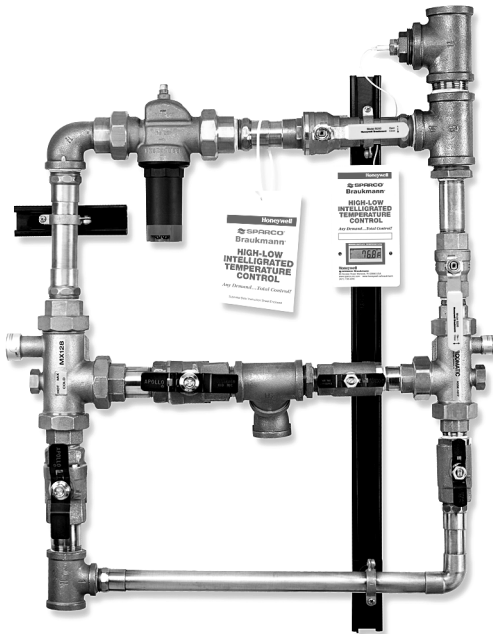


High - Low Temperature Control System

HL 150; HL 200; HL 250

PRODUCT DATA



FEATURES

- Constant water temperature under low through high capacity demand periods.
- Proportional valve (control of hot and cold water).
- Flow reduction in seconds if cold water supply is interrupted.
- Allen wrenches included for adjustment of temperature setting.
- Union tailpieces on both mixing valves for ease of maintenance.
- Install in any position, heat trapping not required.
- Bronze / stainless steel construction for both mixing valves.
- Recirculation connection in small mixing valve for fast response.
- DialSet® Pressure Regulating Valve assures constant temperature from low through peak demand periods.
- Isolation ball valves with internal checks to prevent crossflow and to allow easy maintenance without system shutdown.
- Digital readout thermometer for mixed outlet water temperature.
- Mixing valves are ASSE 1017 tested and certified.
- Wear surfaces on both mixing valves are Teflon® coated to prevent mineral deposits.
- Maximum pressure differential between hot and cold ports is 7 psi (48 kPa).
- Maximum inlet temperature 200 °F (93 °C).
- Maximum inlet pressure 150 psi (1034 kPa).
- Maximum Temperature difference between hot and mix is 10 °F (6 °C).

Contents

Features	1
Application	2
Benefits	2
Operation.....	2
Setup Instructions.....	2
Ordering Information	2
Product Information	3
Recirculation.....	4



APPLICATION

Mixing of hot and cold water to produce tempered water for industrial or commercial applications requiring accurate control of domestic hot water temperature during all capacity flow rates from low to high such as the following applications:

- Apartment Buildings.
- Nursing Homes.
- Hospitals.
- Hotels.
- Industrial Plants.
- Office buildings.
- Schools.
- Gymnasiums.

BENEFITS

Honeywell High-Low Control System provides energy savings, increased comfort and safety for the user.

OPERATION

Automatic operation is provided by the thermostatic element. The element controls the hot and cold water supply based on valve setting. If cold water is shut off, the valves will reduce mixed flow rate in seconds (speed / residual flow rate varies by sizes). A combination of small and large mixing valves controlled by a Pressure Regulating Valve assures constant temperature from low through maximum recommended gpm for the High-Low Control System selected (see Table 1).

ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE[®] wholesaler or distributor, refer to the TRADELINE[®] Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Honeywell Automation and Control Products Sales Office (check white pages of your phone directory).
2. Honeywell Customer Care
1885 Douglas Drive North
Minneapolis, Minnesota 55422-4386

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Toronto, Ontario M1V 4Z9.

International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

SETUP INSTRUCTIONS

(To set outlet temperature at 120 °F (49 °C)).

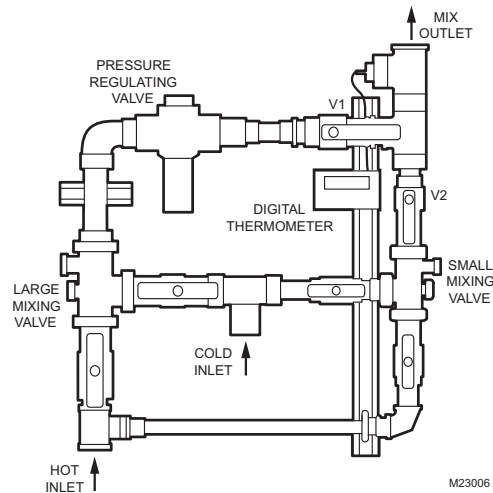


Fig. 1. High - Low Temperature Control System Installation.

1. Honeywell High – Low Temperature Control System must be installed per Fig. 1.
2. Verify that the hot water and cold water supplies are fully operational.
3. Close the Outlet Ball Valve (V1) of the large mixing valve and fully open all other ball valves.
4. Open downstream fixtures to achieve approximately 2 gpm (7.5 lpm) of flow through the small mixing valve.
5. Using the allen wrench supplied, set the small mixing valve 10 °F (6 °C) less (i.e. at 110 °F (43 °C)) than the final outlet mix temperature (120 °F (49 °C)), as read on the digital thermometer.
6. Close the Outlet Ball Valve (V2) to the small mixing valve and fully open the Outlet Ball Valve (V1) to the large mixing valve.
7. Open additional fixtures downstream to achieve approximately 4 gpm (15 lpm) of flow through the large mixing valve.
8. Using the allen wrench supplied, set the large mixing valve to the final outlet mix temperature (120 °F (49 °C)).
9. Increase the system flow rate to approximately 12 to 14 gpm (45 to 53 lpm) by opening downstream fixtures.

10. Open the Outlet Ball Valve (V2) to the small mixing valve.
11. Observe the outlet temperature. Temperature should drop by approximately 6 to 7 °F (4 to 5 °C)(114 to 113 °F (46 to 45 °C)).
 - If temperature drops more than 7 °F (5 °C), adjust the pressure-regulating valve clockwise until the temperature difference is 7 °F (5 °C).
 - If the temperature drops less than 6 °F (4 °C), adjust the pressure regulating valve counter clockwise until the temperature difference is 6 °F (4 °C).
12. Shut the Outlet Ball Valve (V1) for the large mixing valve.
13. Decrease the system flow rate to approximately 2 gpm (7.5 lpm) by closing downstream fixtures.
14. Using the allen wrench supplied. Set the small mixing valve to final outlet mix temperature (120 °F (49 °C)).
15. Open the Outlet Ball Valve (V1) for the large mixing valve.
16. Set up procedure is complete and system is operational.

PRODUCT INFORMATION

Table 1. Maximum Flow Rates.

Product Number	Inlet Port Size	Outlet Port Size	Weight in lb (kg)	Maximum Flow in gpm (lpm)	Flow vs. Pressure Drop				
					System Differential Pressure in gpm at:				
					5 psi (34 kPa)	10 psi (69 kPa)	15 psi (103 kPa)	20 psi (138 kPa)	30 psi (207 kPa)
HL 150	1.25 in.	1.5 in.	58 (26.3)	1.0 (3.8)	18	30	38	44	57
HL 200	2.0 in.	2.0 in.	80 (36.3)	1.0 (3.8)	24	40	54	68	84
HL 250	2.0 in.	2.5 in.	105 (47.6)	3.5 (13.2)	40	70	96	120	150

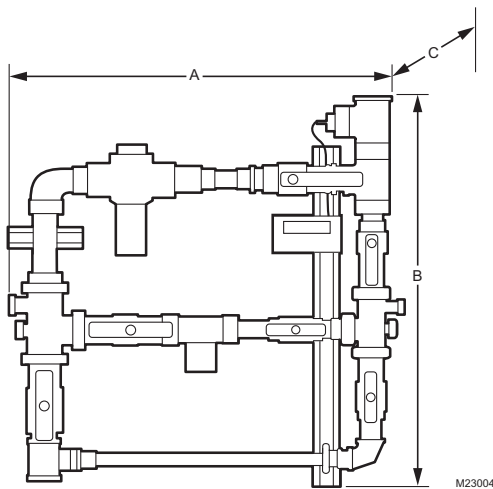


Fig. 2. HL150, HL 200 and HL 250.

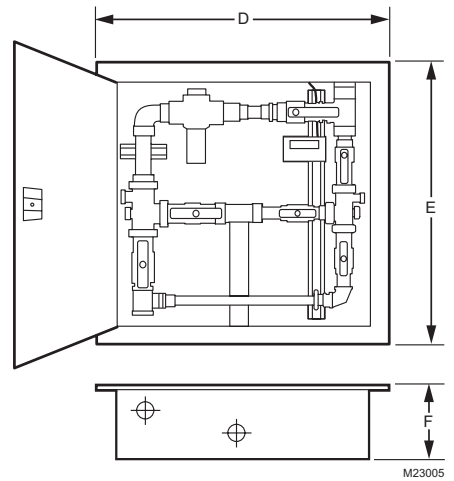


Fig. 3. HL 150, HL 200 and HL 250 Cabinet Option.

Table 2. Dimensions in inches (mm).

Product Number	A	B	C	D	E	F
HL 150	30 (762)	36 (914)	8 (203)	34 (864)	40 (1016)	10 (254)
HL 200	38 (965)	44 (1118)	9 (229)	44 (1118)	48 (1219)	10 (254)
HL 250	40 (1016)	44 (1118)	9 (229)	44 (1118)	48 (1219)	10 (254)

RECIRCULATION

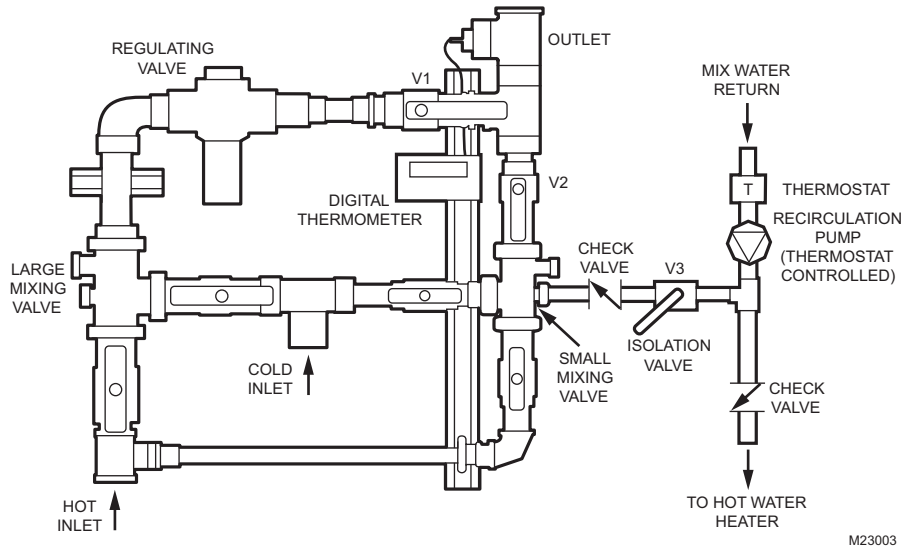


Fig. 4. High - Low Temperature Control System Recirculation Installation.

Instructions

The return of the recirculation loop must be piped to the recirculation port on the Small Mixing Valve and to the Hot Water Heater.

Thermostatic control of Recirculation Pump Recommended. If system is subject to no draw, thermostatic control is required. Thermostat should stop Recirculation Pump when return temperature reaches 90 - 100 °F (32 - 38 °C).

Use Recirculation Adapter, part number MX050-RP, supplied with High-Low System.

Typical Specification

Honeywell's HL Series High - Low Temperature Control System, consisting of high capacity and a low capacity ASSE 1017 certified MX Series Teflon Lined Thermostatic Mixing Valve with an ASSE 1003 certified DialSet® Pressure Regulating Valve. The system has internal isolation ball valve/check valves to prevent crossflow thermal migration and to allow replacement of major components without shutting the entire system down. It has a recirculation port connection to provide a place for an optional recirculation system to be connected. A digital temperature indicator for the mixed output is provided. The temperature control system has a tamper-proof adjustable output from 110 to 150 °F (43 to 66 °C). It has a cold water inlet, a hot water inlet and a controlled mixed water temperature outlet.

- HL 150 with 1-1/4 in. inlet and 1-1/2 in. outlet NPT connections.
- HL 200 with 2 in. inlet and 2 in. outlet NPT connections.
- HL 250 with 2 in. inlet and 2-1/2 in. outlet NPT connections.

DIALSET® IS A REGISTERED TRADEMARK OF HONEYWELL INC.
TEFLON® IS A REGISTERED TRADEMARK OF E.I. DU PONT DE NEMOURS AND COMPANY.

Automation and Control Solutions

Honeywell International Inc.
1985 Douglas Drive North
Golden Valley, MN 55422
customer.honeywell.com

Honeywell Limited-Honeywell Limitée
35 Dynamic Drive
Toronto, Ontario M1V 4Z9

Honeywell

