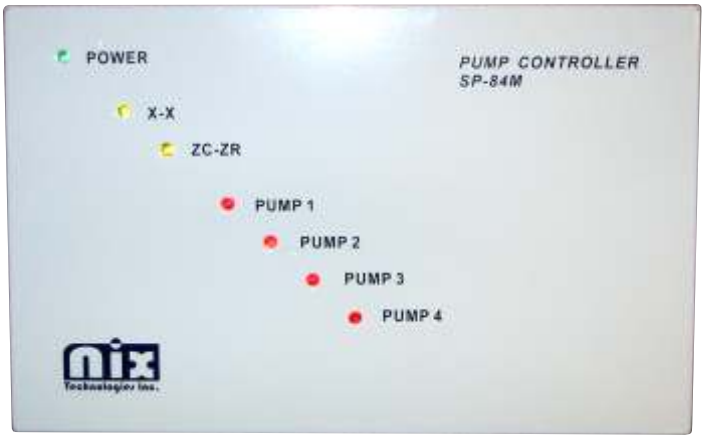
SPEEDPUMP SP-84M FOUR ZONE SWITCHING RELAYS WITH PRIORITY FOR HYDRONIC HEATING SYSTEMS

SELEC-PRIORITY™

P R O G R A M M A B L E



General Applications:

The SP-84M pump controller is operated by low voltage thermostats or any other low voltage controllers having an SPST switching action. The SP-84M pump controller provides intermediate switching to permit up to four separate line voltage loads such as pumps. SP-84M is expandable up to ten zones with SP-M2 module.

Product Features and Benefits:

- High Quality Electronics Circuit Board which Centralizes Wiring and Control Operation
- SELEC-PRIORITY ™ independent programmable priority switch for each of the secondary pump (ie. zone 2, zone 3, zone 4)
- Master priority switch for domestic hot water priority control
- Selectable interlocking function of secondary pumps to the primary pump (zone 1)
- External LED Display provides functional status
- Plug-in/Removable Relays with Relay Clamps
- Basic model controls up to 4 pump configurations
- State-of-the-art modular design by using plug-in communication cable to expand basic module up to 10 zones with SP-M2
- Designed for cold start or tankless coil applications
- High Capacity Transformer
- Easy-Connect Terminals/Screwless Terminals for Thermostat Connections
- Compatible with Most Digital/Mechanical Thermostats
- CSA/NRTL (National Recognized Testing Laboratory) Certified

SPECIFICATIONS

Model	Relay Switching Action	Thermostat Current	Transformer Rating (nominal)	Single Phase Motor Rating for Each Zone		Dimension	Shipping Weight
				120 V	240 V	L x W x H	
SP-84M	DPST	0.18A	120/24VAC 60Hz 20VA	1/3hp (10A)	1/2hp (10A)	10" x 6" x 3" (25.4cmx15.2cmx7.6cm)	4.9lbs. (2.2 kg.)
SP-M1	DPST	0.18A	___	1/3hp (10A)	1/2hp (10A)	8" x 6" x 3" (20.3cmx15.2cmx7.6cm)	2.7lbs. (1.22 kg.)
SP-M2	DPST	0.18A	___	1/3hp (10A)	1/2hp (10A)	8" x 6" x 3" (20.3cmx15.2cmx7.6cm)	2.8lbs. (1.26 kg.)

SP-84M-1: One zone expansion module **SP-84M-2: Two zone expansion module**

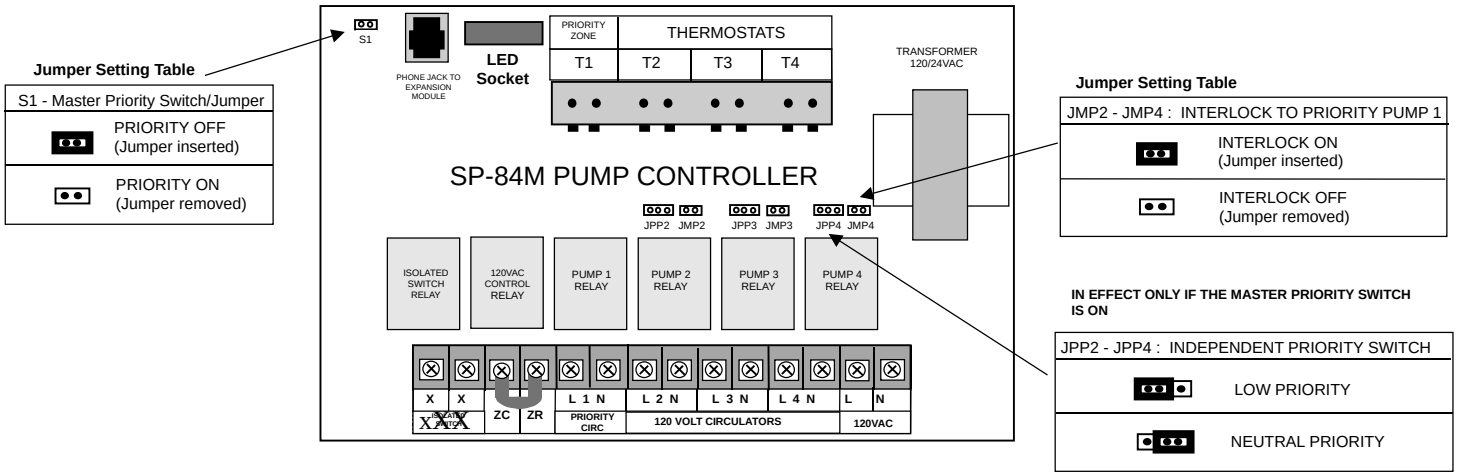


Figure 2. Pump Controller SP-84M Diagram

PRIORITY OPERATION

When the master priority jumper (S1) is set to ON position and the priority pump 1 is actuated, pumps for zone 2, 3, or 4 will not operate if they are set as low priority (factory setting) with independent low/neutral priority jumpers (JPP2, JPP3 or JPP4). If they are set as neutral priority, they operate independently from pump 1. When the master priority jumper switch is set to off position (factory setting), all zones operate independently of each other.

INTERLOCKING TO PRIMARY PUMP

Independent interlock jumpers (JMP2, JMP3 and JMP4) can be set for secondary pumps (eg. zone 2, zone 3, or zone 4) to provide interlocking function to the primary pump. For example, when interlock jumper is set to ON position for zone 2, pump 1 is actuated if pump 2 is actuated. However, pump 2 does not have to operate when pump 1 is required to operate. The same is applied for pump 3, 4 etc. This function is disabled if interlock jumper is set to OFF position (factory setting).

WIRING INSTRUCTIONS

COLD START BOILER APPLICATION

OPERATION
When zone thermostat calls for heat, the appropriate pump is actuated and the isolated end switch (X-X) will start the boiler.

JUMPER PLACEMENT
The jumper (factory installed) should be placed between terminal ZC and ZR. Connect isolated switch (X-X) to T-T terminals on boiler control.

TANKLESS COIL BOILER APPLICATION

OPERATION
When zone thermostat calls for heat, the appropriate pump is actuated and the boiler is started. If the boiler temperature drops below the low limit setting, all pumps will cease until the boiler temperature is increased above the low limit.

JUMPER PLACEMENT
Remove the factory installed jumper between terminals ZC and ZR.
Connect ZC and ZR terminals to corresponding ZC and ZR terminals on boiler control.

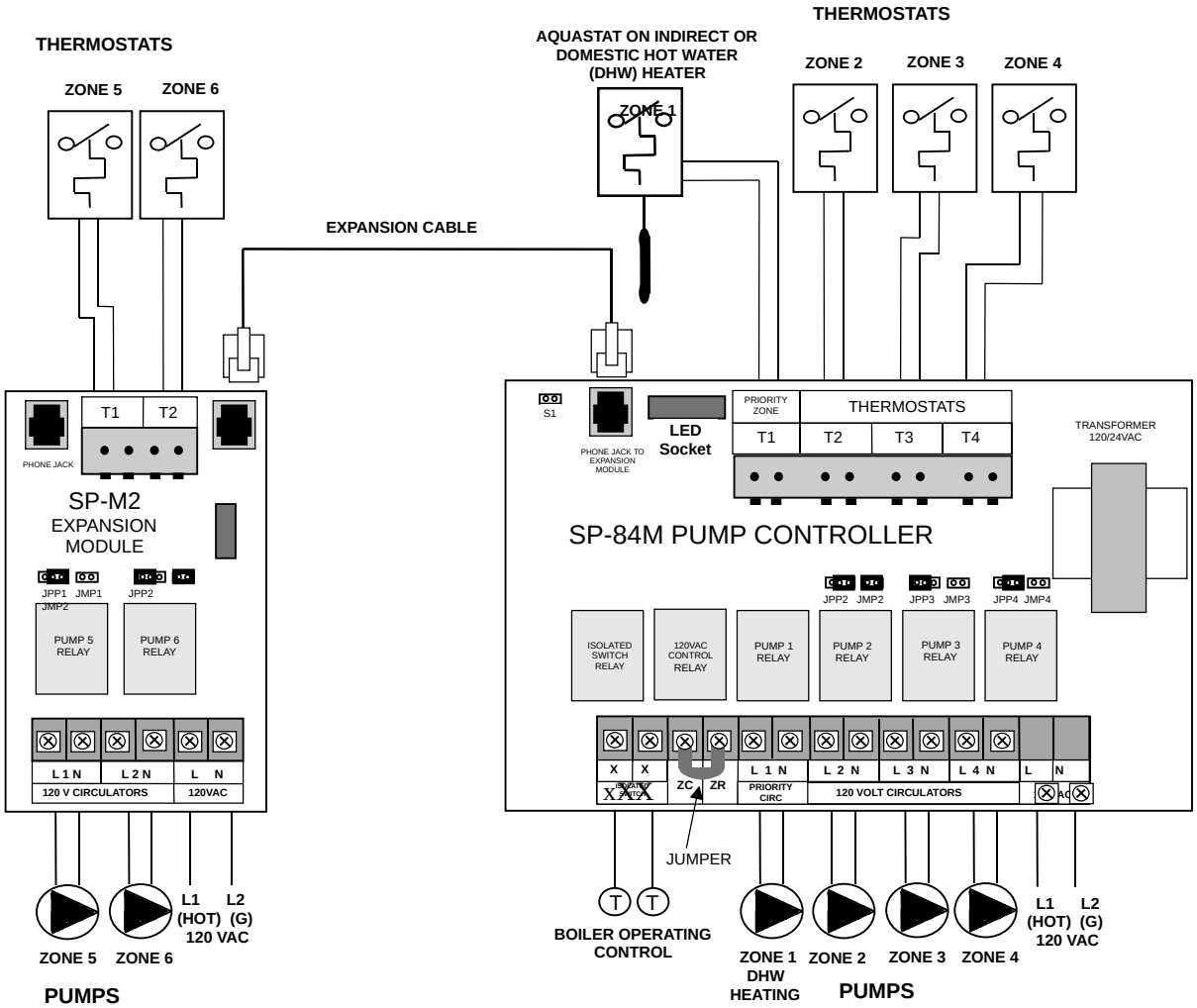


Figure 3 COLD START BOILER APPLICATION WITH PRIORITY FOR DOMESTIC HOT WATER AND DIFFERENT FUNCTIONAL SETTINGS

Figure 3 shows a 6 pump system with zone 1 as high priority and with the following setting:

Pump (Zone)	2	3	4	5	6
Interlock to Pump 1	ON	OFF	OFF	OFF	ON
Independent Priority Switch	Neutral	Low	Neutral	Neutral	Low

When Pump 1 turns on:

Pump (Zone)	1	2	3	4	5	6
Before Pump 1 turns on	OFF	ON/OFF	ON	ON/OFF	ON/OFF	ON
After Pump 1 turns on	ON	ON/OFF	OFF	ON/OFF	ON/OFF	OFF

When the high priority zone on the Pump 1 circuit is on, zone 2, 4 and 5 will operate independently (ON/OFF) as neutral priority zones. The two operating low priority Pump 3 and 6 will be deactived.

When Pump 1 is off and Pump 2 turns on:

Pump (Zone)	1	2	3	4	5	6
Before Pump 2 turns on	OFF	OFF	ON	ON/OFF	ON/OFF	ON
After Pump 2 turns on	ON	ON	OFF	ON/OFF	ON/OFF	OFF

When Pump 2 is actuated, it also turns on Pump 1 due to the interlocking function. The Pump 1 (priority) will in turn deactivate Pump 3 and 6 as they are set with low priority. The neutral priority Pump 4 and 5 will continue to operate as normal.

CAUTION!

1. To prevent electrical shock hazard, disconnect power supply before installing.
2. All wiring must comply with national and local electrical codes, ordinances, and regulations. Never connect the load terminals to a load that takes more current than the amount listed for the relay in the electrical ratings.
3. A line voltage is present between terminal ZC and ZR. Connection of these terminals to low voltage equipment may damage the equipment.
4. NIX Technologies is not responsible for damages resulting from misuse of its products.
5. This literature is provided for informational purposes only.

NIX Technologies Inc.
Thornhill, ON
Canada L3T 7K8
Bus: (905) 764-4700 Fax: (905) 764-4738
Website://members.aol.com/nixtec
Email: nixtec@rogers.com