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> Merrill MPSM43050 30/50 Low Water Cutoff Pressure Switch User Manual

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Model: MPSM43050

INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your Merrill MPSM43050 30/50 Low Water Cutoff Pressure Switch. Please read these instructions thoroughly before installation or use to ensure proper function and to prevent potential hazards.

The Merrill MPSM43050 is designed to monitor water pressure and provide a low water cutoff function, ensuring the safe operation of water systems by preventing pumps from running dry. It features a manual lever for system testing and reset.

SAFETY INFORMATION

WARNING: Improper installation, operation, or maintenance can result in serious injury or property damage. Always follow local codes and regulations.

- Always disconnect power before installing or servicing the switch.
- Ensure all electrical connections are made by a qualified electrician and comply with local electrical codes.
- Do not exceed the maximum pressure rating of the switch or the system components.
- This device is designed for water systems. Do not use with other fluids unless explicitly approved by the manufacturer.
- Wear appropriate personal protective equipment (PPE) during installation and maintenance.

PRODUCT OVERVIEW

The Merrill MPSM43050 is a combination pressure switch and low water cutoff device. It is typically used in well water systems to control pump operation based on system pressure and to protect the pump from damage due to insufficient water supply.



Image of the Merrill MPSM43050 30/50 Low Water Cutoff Pressure Switch, showing its main body, pressure connections, and manual lever. This image illustrates the general appearance and key components of the device.

Key features include:

- Adjustable pressure settings (30-50 PSI range).
- Integrated low water cutoff function.
- Manual lever for testing and resetting the low water cutoff.
- No-Lead construction for potable water applications.

SETUP AND INSTALLATION

Pre-Installation Checks

- Verify that the switch's pressure rating matches your system requirements.
- Ensure all necessary tools and materials are available (e.g., pipe wrench, thread sealant, wiring tools).
- Confirm that the power supply to the pump is disconnected at the circuit breaker.

Mounting Instructions

1. The pressure switch should be mounted vertically on a 1/4-inch NPT pipe fitting, typically on the pump discharge or a pressure tank tee.
2. Apply appropriate thread sealant (e.g., PTFE tape or pipe dope) to the male threads of the pipe fitting.

3. Thread the switch onto the fitting and tighten securely with a pipe wrench. Do not overtighten.
4. Ensure the manual lever is accessible for future operation.

Wiring Instructions

CAUTION: All wiring must be performed by a qualified electrician in accordance with national and local electrical codes.

1. Remove the cover of the pressure switch.
2. Connect the incoming power supply wires to the designated terminals (typically L1 and L2 for line voltage).
3. Connect the pump motor wires to the designated terminals (typically T1 and T2 for motor load).
4. Ensure proper grounding by connecting the ground wire to the designated ground terminal.
5. Double-check all connections for tightness and correct polarity.
6. Replace the switch cover securely.

Pressure Setting Adjustment

The MPSM43050 is factory set for a 30-50 PSI operating range. Adjustments can be made if necessary:

- To adjust the cut-in (low) pressure, turn the large nut (main spring) clockwise to increase pressure or counter-clockwise to decrease.
- To adjust the differential (cut-out pressure relative to cut-in), turn the small nut (differential spring) clockwise to increase the differential or counter-clockwise to decrease.
- Always make small adjustments and test the system to verify the new settings.

OPERATING INSTRUCTIONS

Normal Operation

Once installed and wired, restore power to the pump. The pump will start and run until the system pressure reaches the cut-out setting (e.g., 50 PSI). The pump will then shut off. As water is used and system pressure drops to the cut-in setting (e.g., 30 PSI), the switch will activate the pump again.

Low Water Cutoff Function

The integrated low water cutoff feature protects the pump from damage if the water source runs dry. If the water level drops below a safe operating point, the switch will automatically shut off the pump, preventing it from running without water.

Manual Lever Operation

The manual lever is used to test the low water cutoff function or to manually reset the switch after a low water event. To reset, ensure the water source has recovered, then depress and hold the manual lever until the system repressurizes and the pump resumes normal operation. Release the lever once pressure is established.

MAINTENANCE

Regular maintenance helps ensure the longevity and reliable operation of your pressure switch.

- **Annual Inspection:** Annually inspect the switch for any signs of corrosion, wear, or damage. Check electrical connections for tightness.
- **Pressure Verification:** Periodically verify the cut-in and cut-out pressure settings using a reliable pressure gauge. Adjust if necessary.

- **Low Water Cutoff Test:** Test the low water cutoff function periodically by simulating a low water condition (if safe to do so) or by using the manual lever to ensure it operates correctly.
- **Cleaning:** Keep the exterior of the switch clean and free from dirt or debris. Do not use harsh chemicals.

TROUBLESHOOTING

Refer to the following table for common issues and their potential solutions.

Problem	Possible Cause	Solution
Pump does not start.	No power; Low water cutoff activated; Faulty wiring; Switch malfunction.	Check circuit breaker; Verify water source and reset manual lever; Inspect wiring; Test switch continuity.
Pump runs continuously.	System leak; Pressure switch set too high; Faulty switch.	Check for leaks in the system; Adjust cut-out pressure; Replace switch if faulty.
Pump cycles too frequently.	Waterlogged pressure tank; Small leak in system; Incorrect pressure differential.	Check and recharge pressure tank air pre-charge; Locate and repair leaks; Adjust differential setting.
Low water cutoff activates prematurely.	Sensor obstruction; Actual low water condition; Faulty sensor.	Inspect and clean sensor area; Verify water source; Consult a professional for sensor replacement.

If troubleshooting steps do not resolve the issue, contact a qualified professional or Merrill customer support.

SPECIFICATIONS

Model Number	MPSM43050
Pressure Range	30-50 PSI (Adjustable)
Low Water Cutoff	Integrated with Manual Reset Lever
Material	No-Lead Construction
Connection Size	1/4-inch NPT Female
Manufacturer	Merrill
Item Weight	7 pounds
Item Package Quantity	1

WARRANTY AND SUPPORT

Merrill products are manufactured to high-quality standards. For specific warranty details, please refer to the documentation included with your purchase or visit the official Merrill website. For technical support or assistance, please contact Merrill customer service.

No official product videos from the seller were found for this product.

