

MicroPulse



**SYSTEMS MONITOR
INSTALLATION
CALIBRATION
OPERATION
INSTRUCTIONS**

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MicroPulse Systems Monitor Warranty

Catcon Products Inc. will warranty all components of the MicroPulse Systems Monitor for a period of 5 years from the date of purchase. In the event of a failure contact Catcon Products Inc. and we will repair or replace the item at no charge.

MICROPULSE SYSTEMS MONITOR RECALIBRATION INSTRUCTIONS

PLACING THE MONITOR INTO CALIBRATION MODE

In the event that you wish to recalibrate the monitor it must be placed into calibration mode. In order to place the monitor into calibration mode with the power off press and hold the status button. While holding the status button turn the power to the monitor on and continue holding the status button until the display begins to flash and then displays all green. The monitor is now ready to calibrate. Proceed to Step 1 of the calibration procedure.

SELECTING A SINGLE TANK FOR CALIBRATION

In order to calibrate a single tank only place the monitor in diagnostics as described in Step 2. Press and release the Status button one time. When the select tank LED is lit press and release the Status button until the LED is lit beside the tank that you want to calibrate. When the LED is lit beside the tank for 2 seconds the Ready for empty LED will light. Proceed with Step 4 of the calibration instructions only filling the tank that you have selected. Calibration values for the tanks not selected will not be affected.

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MICROPULSE SYSTEMS MONITOR INSTALLATION INSTRUCTIONS

Materials Required

MicroPulse Systems Monitor

1 MicroPulse Sensor per holding tank

1 4 conductor flat modular cable assy. per sensor

1 3/4" spin-in or sensor adaptor per holding tank

2 #10 x 3/4" stainless steel self tapping screws per holding tank

1 tube silicon glue

Teflon plumbers tape

MICROPULSE SYSTEMS MONITOR INSTALLATION INSTRUCTIONS

SENSOR INSTALLATION

Each holding tank requires a MicroPulse Sensor. The sensor should be mounted as low in the sidewall as possible using a 3/4" spin-in or the flat sensor adaptor. If a sensor adaptor is used it will require drilling a 5/8" hole in the sidewall. Apply silicone glue liberally to the bottom of the adaptor. Using #10 x 1/2" stainless steel self tapping screws attach the adaptor to the sidewall. Once the adaptor is attached make sure that the hole in the adaptor is clear of any excess glue. Allow to dry per the instructions for the glue. Wrap the threads of the sensor using Teflon plumbers tape and install the sensor. Tighten by hand. It is not recommended to install the sensor in the bottom of the tank. Although the sensor will operate correctly it will provide an area for debris to collect which would be difficult to flush out.



MODULAR CABLE ASSEMBLY

The sensor is connected to the monitor using a 4 conductor flat modular cable with a 4 pos modular jack on each end. The jacks are installed so that pin 1 is connected to pin 1 of each end of the cable. (Caution: Most preassembled cables sold are made pin 1 to pin 4.) Connect one end of the RJ11 cable to the sensor. Connect the opposite end to the corresponding connector on the monitor.

MICROPULSE SYSTEMS MONITOR OPERATION INSTRUCTIONS

TO OBTAIN EXACT READING

To obtain an exact reading of all systems press and release the status button one time. The monitor will flash the LED beside the system it is about to report. It will then display the exact condition of that system by lighting the bar graph from Empty to Full. The monitor will display the exact condition of each system and then return to normal operation mode.

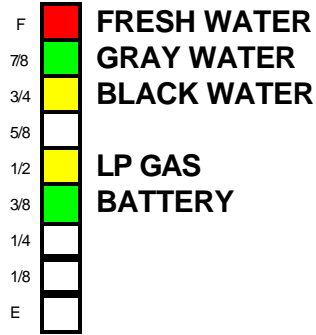
To obtain an exact reading of an individual system press and release the status button until the LED beside the system that you want the condition of is lit. Release the status button and the monitor will display the exact condition of that system by lighting the bar graph from Empty to Full and then return to normal operation mode.

CONSTANT MONITOR MODE

To obtain a continuous exact reading of an individual system press and release the status button until the LED beside the system that you want to monitor is lit. Continue to hold the status button down for about 2 seconds. The LED beside the tank you have selected will begin to flash and the bar graph will display the exact condition of the selected tank. When you want to return to normal monitor mode press and release the status button.

MICROPULSE SYSTEMS MONITOR OPERATION INSTRUCTIONS

MONITOR DISPLAY



In this example the monitor is reporting the following:
 Fresh Water = 1/8
 Gray Water = Empty to 1/2
 Black Water = 5/8 to 3/4
 LP Gas = 1/4 to 3/8
 Battery = 1/2 to Full

NORMAL OPERATION

The MicroPulse Monitor will display the condition of each system at all times. The tri-color LED beside the system will indicate the condition of the system using the following color code.

Fresh Water, LP Gas, Battery are as follows:

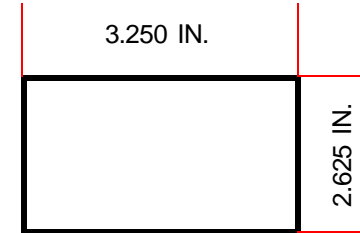
Green LED = 1/2 to Full
 Yellow LED = 1/4 to 3/8
 Solid Red LED = 1/8
 Flashing Red LED = Empty

Gray Water, Black Water are as follows:

Green LED = Empty to 1/2
 Yellow LED = 5/8 to 3/4
 Solid Red LED = 7/8
 Flashing Red LED = Full

MICROPULSE SYSTEMS MONITOR INSTALLATION INSTRUCTIONS

MONITOR CUTOUT



MONITOR WIRE CONNECTIONS

<u>WIRE COLOR</u>	<u>CONNECTION</u>
Red	12VDC, Battery Only
Black	Ground, Battery Only
Purple	Water Pump, 15A, 12VDC
White	LPG 1 Sensor, 90 ohm
Green	LPG 2 Sensor, 90 ohm
Fresh	Fresh Tank Sensor
Gray 1	Gray 1 Sensor
Gray 2	Gray 2 Sensor
Black	Black Sensor

MICROPULSE SYSTEMS MONITOR CALIBRATION PROCEDURE

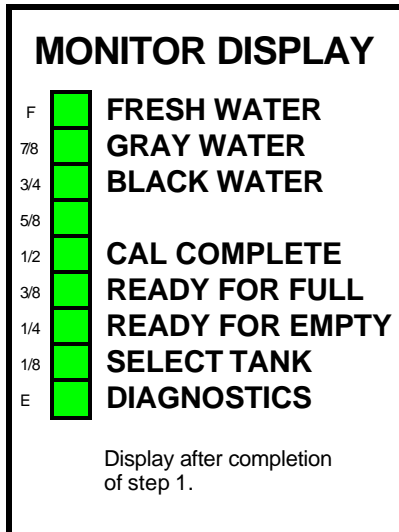
STEP 1

ACTION

Turn power switch on.

RESULT

Display will flash all yellow 1 time, flash all green 5 times and than display all green. This confirms that the monitor is in the calibration mode. Proceed to step 2. (If the display is not lit all Green the monitor is not in calibration mode. See PLACING THE MONITOR INTO CALIBRATION MODE on page 11.)



MICROPULSE SYSTEMS MONITOR CALIBRATION PROCEDURE

MONITOR DISPLAY



Display after completion of step 5. In this example Fresh, Gray, and Black have passed calibration.

STEP 6

ACTION

Remove the calibration decal on the lower 4 LED's. Press and release status button 1 time.

RESULT

Display will turn red from empty to full 1 time, turn green from empty to full 1 time, and all flash green 1 time. Power on greeting will be played and installed tank levels will be displayed.

Calibration is complete.

MICROPULSE SYSTEMS MONITOR CALIBRATION PROCEDURE

STEP 5

ACTION

Fill all tanks to the level that you want the monitor to report full. Maximum suggested is liquid about 1/2 inch below the top of the tank and the minimum is 4 inches above the empty level. When all tanks are set to the desired level press and release the status button 1 time.

RESULT

Display will go blank for a few moments while the full values are being read. When the system has completed reading the full values Fresh Water, Gray Water 1, Black Water, and Cal Complete will light. All other LED's will turn off. If a system has passed calibration the LED beside it will light Green. If a system was not installed the LED beside it will not light and that system will not be reported in normal operation. If a system fails calibration the LED beside it will light red and that system will not be reported in normal operation. In the event that a system fails calibration turn off the monitor and repeat calibration procedure. The most likely cause for a failure is that the full level was not set the minimum of 4 inches above the empty level. If all installed systems display a green LED proceed to step 6.

See next page for example of display after step 5.

MICROPULSE SYSTEMS MONITOR CALIBRATION PROCEDURE

STEP 2










ACTION

Press and release the status button 1 time.

RESULT

This enters the monitor into diagnostics. Display will light Fresh Water, Gray Water 1, Gray Water 2, Black Water. The Diagnostic LED will light green. If a sensor is installed and is working correctly the LED beside the system will light green. If a sensor is not installed or is not connected the LED beside the system will display yellow. **If a system LED displays yellow it will not be included in the calibration routine.** The most likely cause is the RJ11 connectors are not installed correctly or the sensor is not plugged in. When all installed systems are displaying a green LED proceed to step 3.

MONITOR DISPLAY

F		FRESH WATER
7/8		GRAY WATER
3/4		BLACK WATER
5/8		
1/2		CAL COMPLETE
3/8		READY FOR FULL
1/4		READY FOR EMPTY
1/8		SELECT TANK
E		DIAGNOSTICS

In this example Fresh, Gray, and Black Water are installed and working correctly.

MICROPULSE SYSTEMS MONITOR CALIBRATION PROCEDURE

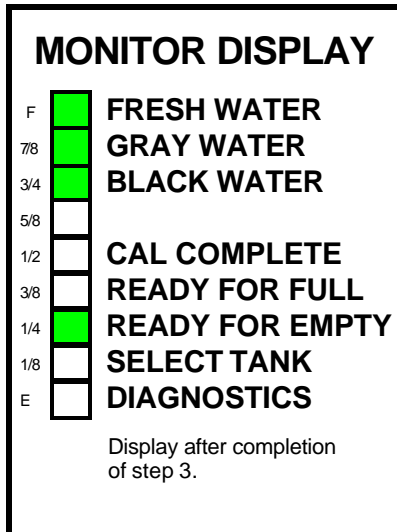
STEP 3

ACTION

Press and release the status switch 1 time.

RESULT

Display will light Fresh Water, Gray Water 1, Black Water, and Select Tank LED's green. After 2 seconds the Select Tank LED will turn off and the ready for empty LED will turn light green. Proceed to step 4.



MICROPULSE SYSTEMS MONITOR CALIBRATION PROCEDURE

STEP 4

ACTION

Fill all water holding tanks to the level that you want the monitor to report empty. Minimum suggested is liquid just covering the sensor. When all tanks are set to the desired level press and release the status button 1 time.

RESULT

When the system has completed reading the empty values all installed systems and the Ready For Full LED's will light green. Any systems not installed will have a blank LED. Proceed to step 5.

