MS2 Vessel Monitoring

Installation and Activation
Getting Started Guide

Reading the Status Light

The transponder LED will blink a sequence of different colors to indicate network status, alarms and notification status. The sequence will **always** begins with a Blue or Yellow blink to indicate the transponder's network status. The sequence will repeat itself indefinitely.

Yellow LED
Searching For Network

Blue LED
In Network

Red LED
Alarm Notifications

Magenta LED
Suspended Notifications

Alarms are detected by a series of red blinks. If more than one alarm is detected, you will see a short white blink between alarm codes. To test this, wait for the network status blink (Yellow or Blue) and then count the Red blinks. Remember, the network status always begins the sequence. If you lose count, wait for the sequence to start over.

Use the table below to correlate the number of RED blinks to an alarm.

A Few Examples:

Blue, Red, Red = In Network (Blue) , Water Sensor 2 Alarm (Red x 2)

Blue, Red, White, Red x 8 = In Network (Blue) , Water Sensor 1 Alarm (Red x 1) & High Input Voltage Alarm (Red x 8)

Alarm Codes

Red Blink	Alarm Condition	Red Blink	Alarm Condition
1	Water Sensor 1	7	Low Input Voltage
2	Water Sensor 2	8	High Input Voltage
3	Auxiliary Input 1	9	Orientation Alarm
4	Auxiliary Input 2	10	Orientation Warning
5	Low Temperature	11	Low Input Voltage 2
6	High Temperature	12	High Input Voltage 2

Warranties and Limitations

While your monitoring system or device is reliable and sophisticated, it does not offer guaranteed protection against burglary, fire, sinking, or other emergency. Any monitoring system, whether commercial or residential, is subject to compromise or failure-to-warn for a variety of reasons. These include:

- Intruders may gain access through unprotected openings or have the technical sophistication to bypass an alarm sensor or disconnect an alarm warning device.

- Intrusion detectors, smoke detectors, bilge/water detectors and many other detection devices will not operate without power or if disconnected from transponder.

- Cellular and wireless communication are subject to compromise by sophisticated means and service limitations.

Under the terms of this warranty, Seller's obligation shall be limited to repairing or replacing, at its option, free of charge for materials or labor, any product(s) which is not proved in compliance with Seller's specifications or proves defective in materials or workmanship under normal use and service. Seller shall have no obligation under this Limited Warranty or otherwise if the product(s) is altered or improperly repaired or serviced by anyone other than MarineSync factory service. For warranty service, return product(s) transportation prepaid to MarineSync Corporation.

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Seller does not represent that the product(s) it sells may not be compromised or circumvented; that the product(s) will in all cases prevent any personal injury or property loss by burglary, sinking, fire, or otherwise; or that the product(s) will in all cases provide adequate warning or protection. Buyer understand that a properly installed and maintained system may only reduce the risk of burglary, sinking, fire, or other events occurring without monitoring, but is not insurance or guarantee that such will not occur or that there will be no personal injury or property loss as a result.

CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE, OR OTHER LOSS BASED ON A CLAIM THAT THE PRODUCT(S) FAILED TO GIVE WARNING. HOWEVER, IF SELLER IS HELD LIABLE, WHETHER DIRECTLY OR INDIRECTLY, FOR ANY LOSS OR DAMAGE ARISING UNDER THIS LIMITED WARRANTY, REGARDLESS OF CAUSE OR ORIGIN, SELLER'S MAXIMUM LIABILITY SHALL NOT IN ANY CASE EXCEED THE PURCHASE PRICE OF THE PRODUCT(S), WHICH SHALL BE THE COMPLETE AND EXCLUSIVE REMEDY AGAINST SELLER.

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Technical Specifications

Radio Technology

Frequency: 900MHz ISM Direct Sequence Spread Spectrum
Compliance: IEEE 802.15.4
Open Air, LoS Range: ±1.25 miles
Antenna: Integrated PCB Antenna
Approvals: FCC | IC | RoHS

Device Specifications

Size: 5.30" x 6.03" x 2.06"
(134.6mm x 153.2mm x 52.2mm)
Weight: 12.1oz (342gms)

Power Requirements

Operating Input Voltage: 8 to 42 VDC
Current: < 5mA nominal, 100 mA peak (transmit) @ 12VDC

Switches & Indicators

Switch: Capacitive "touch" input switch, PCB mounted
Indicator: Tri-Color LED, PCB mounted

On Board Internal Sensors (PCB)

Temperature: -55oC to 125oC (-67oF to 257oF)
Accelerometer: 3-axis acceleration sensor (High Res)
Battery Voltage: (2) Analog Inputs, 0.05 VDC accuracy

External Sensor Inputs/Outputs

(4) Dry contact inputs
OA Configurable polarity
Active LOW
ESD & EMI protected
(1) SPDT Relay output
(2) Passthrough voltage outputs rated @50mA

Environmental

Operating Temperature: -30oC to 75oC (-22oF to 167oF)
Ingress Protection (IP): IP69K
Salt Fog: 96Hr
Vibration 10-2000Hz – 20 g peak level
Shock 50 g – 20 pulses
RoHS - Compliant

1 Getting Started

Activation Required

The transponder will not transmit data, monitor or notify until activated. Do not activate your transponder until installed and powered. Please contact MarineSync Corporation to activate at (888) 988-SYNC (7962).

What's Included In the Box


MS2 Transponder


Wiring Harness


Bilge Sensor


Screws

What Else You'll Need To Install

- Cordless Drill
- 16-18AWG Marine Grade Wire (UL 1426)
- Terminal & Butt Connection
- Wire Stripper & Crimping Tool
- Zip Ties

WARNING – This device is not capable of communicating outside of your marina, unless within range of a MarineSync Network Infrastructure. This device doe not track nor transmit GPS data.

2 Mounting Your Transponder

This device is equipped with an internal antenna. Improper mounting of the transponder may result in loss of communication. To maximize performance, the transponder should only be mounted with the wiring harness facing up and mounted no less than 18" above the waterline.

The Transponder MUST be mounted with the connector facing up.


Correct


Incorrect

The Transponder MUST be mounted at least 18" above the waterline.

3 Mounting Your Bilge Sensor

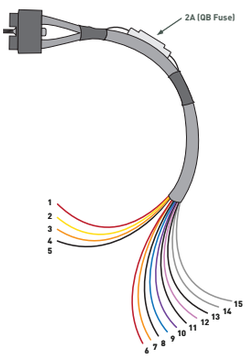
The MS2 bilge sensor should ONLY be used to detect the presence of water. Mount the water sensor above your bilge switch, or in a location where if submerged, you would want to be notified.

WARNING – Do not attempt to use the bilge sensor as a switch to operate pumps or other equipment.

Have any technical questions?
Contact us at 888.988.SYNC

4 Wiring Your Transponder

The transponder wires directly to your vessel's battery to provide uninterrupted power and continuous monitoring. A second battery bank can also be monitored (see optional connections) if a common ground is shared with the primary bank. Use the orange leads of the wiring harness to power the included bilge sensor. All black wires in the harness are common grounds.



Wiring Harness Color Coding Diagram

	Function	Wire Color
1	Main Power (+)	Red 16 ga.
2	Main Ground	Yellow
3	Water Sensor 1 (+)	Orange
4	Water Sensor 2 (-)	Black
5	Water Sensor (sig)	White

Standard Connections

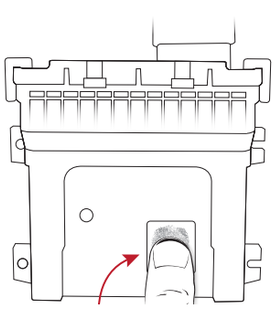
	Function	Wire Color
6	Aux Battery Input	Red 18 ga.
7	Water Sensor 2 (+)	Orange
8	Water Sensor 2 (-)	Black
9	Water Sensor 2 (sig)	Blue
10	Dry Contact Aux 1 (sig)	Purple
11	Dry Contact Aux 1	Black
12	Dry Contact Aux 2 (sig)	Pink
13	Dry Contact Aux 2	Black
14	Relay Output	Grey
15	Relay Output	Grey

Optional Connections

5 Calibrating Your Transponder

Calibration Required

The transponder must be calibrated to establish the baseline for your vessel's orientation. Only calibrate after mounting and powering the transponder. The transponder can also be calibrated remotely through the MS2 dashboard once activated.



To Calibrate Locally

1. Ensure Transponder is mounted and powered
2. Place and hold thumb on touch sensitive pad of label.
3. LED will glow solid WHITE, then begin to flash a series of colors.
4. Release thumb when the LED begins to flash GREEN
5. LED will remain solid green to confirm calibration is complete.

See reverse side for more information on the status light and color codes.