

Introduction

The VACUUM PRESSURE TEST / WATER ALARM is a combined system. It works as an water alarm / leak detector by sensing the presence of water on a dedicated sensor, mounted at the bottom of the uw-housing. Additionally the device can check the pressure inside the housing for detecting a vacuum condition and monitoring the quality of the applied vacuum, in order to detect any sealing leakage, or wrong assembling / use of the housing.

Unit

When the VACUUM PRESSURE TEST / WATER ALARM system is installed you can indicate it by the transparent / white LED and the small square sensor plate with golden lines on it. Additionally you will have a VACUUM VALVE installed at your housing and a manual VACUUM PUMP delivered.

Power

The device is powered by a small lithium CR32 battery which can be easily changed by yourself. Special care was used in order to minimize current consumption and increase battery life by a multi-color LED and audible alarm piezoelectric transducer. The circuit checks the battery state as well and will advise you to replace it when necessary. When changing the battery – open the metal holder with a small screwdriver, turn the unit, replace the CR32 lithium battery and place the unit in reverse order.

Vacuum Pump

In order to generate a proper vacuum in your uw-housing there is a mechanical vacuum pump delivered with the set. The mechanical vacuum pump is operated by pushing and pulling the handle regularly. When you start, attach the flexible connection of the pump to the RED VACUUM VALVE, ensure it is CLOSED and start pumping. When finished remove the pump from the valve and close it with the BLACK PROTECTION CAP.

Vacuum Valve

The access to the VACUUM VALVE can be opened by unscrewing the BLACK PROTECTION CAP. The VENT VALVE is indicated by red color and can be opened by turning it to the left until it stops and closed by turning it to the right until it stops. The vent valve is captive. When starting the VACUUM PRESSURE TEST the RED VENT VALVE must be closed. For starting the vacuum test you have to activate the circuit (see further instructions) - fit the VACUUM PUMP on the RED VENT VALVE and start pumping. When reaching the correct vacuum state stop pumping and close the RED VENT VALVE with the protection cap. You are unable to place the BLACK PROTECTION CAP when the RED VENT VALVE is not closed. There is a spare cap and an o-ring packed with the accessories set.

WATER ALARM

The WATER ALARM starts when water touches the sensor. An audible intermittent alarm is activated and a RED LED starts to blink.

Activation

The alarm can be activated at any time for testing by shorting the sensor contacts, just touching it by a wet finger. When activated an audible alarm is emitted and the RED LED blinks, both at a frequency of 2Hz.

If the battery voltage drops down to a low value and battery needs to be replaced, the duration of the single audible alarm and LED, is reduced to 1/4s in order to advise to replace battery. The frequency of the alarm is reduced to 1Hz. LED color is ORANGE instead of RED.

If the battery voltage drops down further, only a short audible alarm is emitted, no LED is activated. In this case the battery needs to be replaced. A vacuum pressure test is not possible due to the critical battery state. The frequency is reduced to 0,5Hz with a 1/4s audible alarm.

VACUUM PRESSURE TEST

The VACUUM PRESSURE TEST is used to check if there are any leakage in the housing system. The vacuum condition is generated inside the housing with a mechanical pump which is part of the set. The device is able to detect a vacuum state and check if it's constant or if there is any leakage that will result in a pressure loss.

Activation

The device has to be activated for the vacuum pressure test by shorting the water alarm contacts by a wet finger. An audible intermittent alarm is activated and the **RED LED** blinks.

After activating the device enters a pressure check state for 2 minutes. During this time close the housing and start pumping air out from the housing at the **VACUUM VALVE** with the manual **VACUUM PUMP**.

When a small vacuum is detected, the device starts the pressure test. The **LED starts to blink GREEN** and an audible tone is produced. Within 2 minutes you should continue to pump out air with the pump until the correct pressure is reached.

Attention!

When this happens another audible tone is emitted and the **LED starts to blink RED and GREEN**. The user must **stop to pump** in order not to create a too deep vacuum inside the housing that could damage the camera system.

Test passed ☺

If there are is no leakage the test will stop after 4 minutes. An audible sound will be emitted for 2 seconds and **GREEN LED** will blink 10 times.

Test not passed ☹

If during test there is a leakage detected, the test is immediately stopps, an audible intermittent alarm is emitted for 10s while **RED LED** is blinking.

Device state table and LED indication.

Device state	Indications	Actions
Sleep, no current consumption	All off	Stand by on the water alarm sensor
Water Alarm	2Hz audible alarm, red LED blinks	Water alarm sensor is activated
Water Alarm, low battery	1Hz audible alarm, orange LED blinks	Change CR32 battery
Water Alarm, very low battery	0,5Hz audible alarm, no LED	Vacuum pressure test is not possible
Pressure Test started	1 x 2s audible sound, green LED blinks	Vacuum applied, wait for higher vacuum within 2 minutes
Correct vacuum reached	1 x 2s audible sound, green / red LED blinks	Test in progress for 4 minutes
Test passed ☺	1 x 2s audible sound, green LED blinks for 10s	Correct vacuum reached – housing is safe
Test not passed ☹	4Hz audible alarm and red LED blinks for 10s	Correct vacuum not reached, leaking expected
Pressure Test aborted	All off, sleep state	Correct vacuum not reached within 2 minutes

Service

Basically, the battery should be checked regularly. A spare o-ring , vacuum valve protection cap and o-ring lubricant will be delivered with the housing. When adhering to the required operating conditions we recommend a factory service every 2 to 3 years depending on how often the housing is used.

Guarantee

For the **VACUUM PRESSURE TEST / WATER ALARM** system delivered we shall give a year's guarantee for function from the date of invoice. This guarantee shall not apply in the event of accident damage, negligence, improper handling; water entering, capacity loss of batteries, disregarding of operating conditions and operating instructions, as well as unauthorized repairs or changes. Seacam shall not be liable for indirect damage or damage to built-in cameras, and reserves the right to make technical changes and replacements.

Seacam wishes you a great success with the new unit.

GENERAL

If you have any question, make a telephone call we like to help you. Our phone numbers are:
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