



# TECHNICAL INFORMATION

15ppm Bilge Alarm type BilgMon 488

## Optional Sample Flow Monitoring

### GENERAL

Regulation 14 of MARPOL Annex I requires that ships of 400 gross tonnage and above generally should be fitted with "Oil Filtering Equipment" to prevent oil pollution when bilge water is discharged into the sea. Furthermore IMO's Resolution MEPC.107(49) adopts a set of guidelines and specifications for oil filtering equipment called "Revised Guidelines and Specifications for Pollution Prevention Equipment for Machinery Spaces of Ships" (the "Guidelines"). The Guidelines are divided in several parts containing definitions and detailed technical specifications of the equipment, instructions for Administrations how to perform type approval tests, and installation requirements.

### INSTALLATION OF EQUIPMENT

The equipment to be installed must be type approved by an Administration (or a Class on behalf of an Administration) as proof of that it meets the technical specifications laid down in Part 4 of the Guidelines. But additionally the installation requirements laid down in Part 6 of the Guidelines should be met, and the equipment manufacturer's instructions and recommendations should also be taken into account. The Guidelines do not require that the installation should be tamper proof, but you should avoid arrangements that would make it possible to accidentally disable the proper functioning of the equipment and cause accidental pollution. An example of such arrangements to be avoided is a manual valve in the 15ppm bilge alarm sample line which someone could accidentally leave in the wrong position. However, any actions requiring the use of tools in order to disable, manipulate, or "test" the equipment and installation arrangements could be construed as willful tampering with it, no matter who is doing it and no matter how noble his intentions are. An example of such actions would be someone opening a sample piping drain plug or disconnecting a sample pipe, and therefore the Guidelines do not require any protection against that.

### OPTIONAL PROTECTION AND IMPROVEMENTS

An issue that has been addressed lately is the question about what happens if the sample line to the 15ppm bilge alarm is blocked, and if that could lead to accidental pollution. Most of such cases reported during the last couple of years have been caused either by incorrect installation or by someone tampering with the piping, either intentionally or for "testing" purpose. But naturally the sample pipe could genuinely become blocked even if such incidents are seldom reported, and for that purpose it is possible to add some extra protection even if it isn't mandatory. A flow sensing switch installed in the sample piping loop would react to a too low sample flow, and connected to the 15ppm bilge alarm or the Automatic Stopping Device it would protect against accidental pollution.

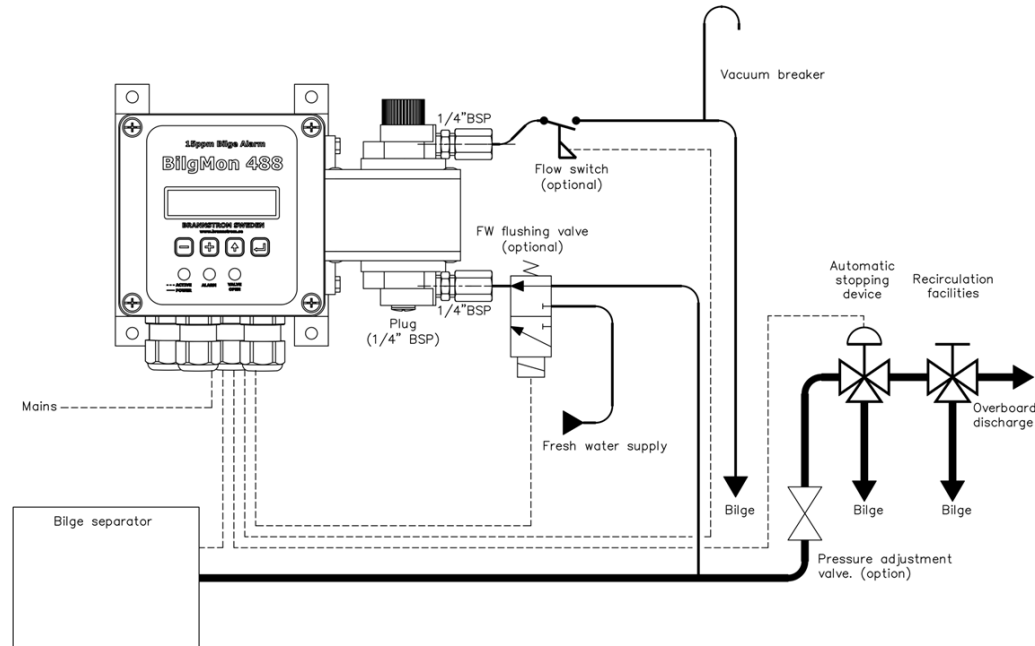


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### WHERE TO INSTALL AN OPTIONAL FLOW SENSING SWITCH

The flow sensing switch could be installed anywhere in the 15ppm bilge alarm sample flow loop. However, when installed in the drain line (see diagram below), it would also react to someone opening a sample pipe drain plug or disconnecting the pipe from the 15ppm bilge alarm sample inlet, which currently seems to be the most common case of sample flow failure.



15ppm bilge alarm type BilgMon 488 fitted with optional flow sensing switch

### HOW TO CONNECT AN OPTIONAL FLOW SENSING SWITCH

Older 15ppm bilge alarms which do not have a specific signal input for a flow sensing switch, have a signal input for the "Separator status" signal from the 15ppm bilge separator. This signal input is normally used for recording the operating status of the 15ppm bilge separator, and it also affects if the Automatic Stopping Device is activated or not. The flow sensing switch could on such older units be connected in series with the status signal from the separator, which would effectively prevent accidental pollution by activating the Automatic Stopping Device in case of low flow. However, in such a case the operation of the separator would not be correctly recorded in the log since the separator would still be operating even if the water would be dumped back to the bilge. Since it could be argued that the added safety of a low flow alarm would not outweigh this incorrect recording in the log, the best solution would be to replace the 15ppm bilge alarm with a newer version, or in case of the BilgMon 488, with a newer master unit only, which has a separate signal input for an optional flow sensing switch. On the newer master unit of the BilgMon 488 the flow alarm is treated just like any other alarm (high oil content, malfunction, etc.) with the additional information "No flow" shown on the display and recorded in the log.



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### FLOW SWITCH MODELS

Since a flow sensing switch is not mandatory, even a lower quality type would improve the safety compared to having no flow switch at all. However, it is still recommended to use a flow sensing switch of good quality, which is suitable for the flow rate of the specific installation, and which doesn't too easily become clogged by oil and solid particles which may pass through the 15ppm bilge separator.

Flow sensing switches can be obtained from the distributors appointed by the manufacturer. The distributor list is found on the website [www.brannstrom.se](http://www.brannstrom.se) or via the direct link [https://www.brannstrom.se/download\\_file/view/85/200](https://www.brannstrom.se/download_file/view/85/200)

The distributors may offer a variety of flow sensing switch models suitable for the specific flow rates of a specific installation, and in addition to other models especially the following ones can be recommended.

- Flow sensing switch BFS-2, 1/4", 0,4 - 2,0 lpm
- Flow sensing switch BFS-5, 1/4", 1,0 - 5,0 lpm



### NEWER BILGMON 488 MASTER UNITS

BilgMon 488 master units with serial numbers in the format 5XXX-NNNN will have a separate signal input for an optional flow sensing switch. These newer master units also have a slightly different terminal numbering for the electrical connection, and for that reason replacing of an older BilgMon 488 master unit should always be done by a competent electrician who can understand the documentation. If in doubt, please consult a distributor ([https://www.brannstrom.se/download\\_file/view/85/200](https://www.brannstrom.se/download_file/view/85/200)).

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