

Watson-Marlow tube monitor



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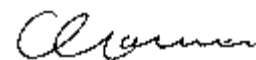
Declaration of conformity

CE When the tube monitor is used with any Watson-Marlow pump it complies with Low Voltage Directive 2006/95/EC.

Declaration of incorporation

When this unit is to be installed into a machine or is to be assembled with other machines for installations, it must not be put into service until the relevant machinery has been declared in conformity with the Machinery Directive 2006/42/EC.

Responsible person: Christopher Gadsden, Managing Director, Watson-Marlow Limited, Falmouth, Cornwall TR11 4RU, England. Telephone +44 (0) 1326 370370 Fax +44 (0) 1326 376009.



Two year warranty

Watson-Marlow Limited warrants, subject to the conditions below, through either Watson-Marlow Limited, its subsidiaries, or its authorised distributors, to repair or replace free of charge, including labour, any part of this product which fails within two years of delivery of the product to the end user. Such failure must have occurred because of defect in material or workmanship and not as a result of operation of the product other than in accordance with the instructions given in this manual.

Conditions of and specific exceptions to the above warranty are

- Products must be returned by pre-arrangement carriage paid to Watson-Marlow Limited, its subsidiaries, or its authorised distributor.
- All repairs or modifications must have been made by Watson-Marlow Limited, its subsidiaries, or its authorised distributors or with the express permission of Watson-Marlow Limited, its subsidiaries, or its authorised distributors.
- Products which have been abused, misused, or subjected to malicious or accidental damage or electrical surge are excluded.

Warranties purporting to be on behalf of Watson-Marlow Limited made by any person, including representatives of Watson-Marlow Limited, its subsidiaries, or its distributors, which do not accord with the terms of this warranty shall not be binding upon Watson-Marlow Limited unless expressly approved in writing by a Director or Manager of Watson-Marlow Limited.

Information for returning products

Equipment which has been contaminated with, or exposed to, body fluids, toxic chemicals or any other substance hazardous to health must be decontaminated before it is returned to Watson-Marlow or its distributor. A certificate included at the rear of these operating instructions, or signed statement, must be attached to the outside of the shipping carton. This certificate is required even if the product is unused. If the product has been used, the fluids that have been in contact with the product and the cleaning procedure must be specified along with a statement that the equipment has been decontaminated.

Safety

In the interests of safety, this product should only be used by competent, suitably trained personnel after they have read and understood this manual, and considered any hazard involved. Any person who is involved in the installation or maintenance of this equipment should be fully competent to carry out the work. In the UK this person should also be familiar with the Health and Safety at Work Act 1974.



There are dangerous voltages (at mains potential) inside the mains interface. If access is required, isolate the product from the mains before removing the cover. All Molex connections should be checked before the case top is replaced.

Introduction

In the event of a spillage within a pump, fluids normally contained within the tube can escape. The Watson-Marlow tube monitor will detect all liquids, including oils, paraffin and other non-conductive fluids, acting as a "watchdog" to shut down the pump in the event of a spillage.

Installation



Warning This device must not be used in hazardous areas.

All pumps

Place the sensor pad under the pumphead, with the printed side uppermost. Pumpheads such as the 303D, cassette pumpheads and the 701R have a drain hole under the pumphead. The pad should be placed directly under this.

- **Auto-control pumps**

Fit the plug from the tube monitor into the auto/remote connection on the rear of the pump. If other connections are required (Voltage or Current speed control signal, direction, etc), these may also be made.

On "IP55 Washdown" pumps, ensure that multiple cables going into the auto-plug are correctly sealed, or that a multicore cable is taken to an IP55 junction box (mounted close to the pump) and split into the auto-control cable and tube monitor cable.

On auto-control pumps, the tube monitor uses the Run/Stop connection, but an additional Run/Stop volt-free switch may be wired in parallel for process control. If either the tube monitor trips or the additional switch closes, the pump will stop.

Ensure the drive is not set in IRS (inverse remote stop) mode.

- **Manual control and fixed speed pumps**

Connect the tube monitor to the input socket of the Mains Interface. Remove the top cover and ensure that the voltage selector switch is set for the appropriate mains supply (120V for 100-120V 50/60Hz, 240V for 220-240V 50/60Hz).

Route the mains supply cable through the entry point marked "Mains In" and connect to the terminal block as shown on the printed diagram. Route the pump mains lead through the entry point marked "Mains Out" and connect to the terminal block as shown in the diagram. Replace the cover and secure. Ensure that power is available at the Mains Interface (an LED is visible through the top cover).

The Mains Interface is rated at 240V, 4A and is suitable for all Watson-Marlow single phase pumps.

The Mains Interface also incorporates an external "volt free contact" to allow an alarm system to be initiated if the tube monitor detects a spillage. The connections are clearly marked on the cover, and the change-over contacts are rated at 1amp, 24V. A suitable plug for this connection is included.

Operation

When the tube monitor is correctly connected to either an auto-control pump (which is switched on) or to the Mains Interface, and the sensor pad is in place, an LED will be illuminated.

The material on which the pad is placed affects the sensitivity of the tube monitor, and the potentiometer must be adjusted until it will just reset. Ensure that the pad is wiped completely dry before setting the sensitivity.

If the "Trip" LED is illuminated, press the "Reset" button (hold down for one to two seconds before releasing). If the Trip LED remains illuminated, reduce the setting on the "Sensitivity" potentiometer and press Reset again.

If the "Set" LED is illuminated, increase the sensitivity until the tube monitor trips. Reduce the setting slightly and press Reset.

This Sensitivity control may also be used to determine the amount of liquid required to trip the pump. By reducing the Sensitivity, more liquid will be needed to land on the Sensor Pad before the pump stops.

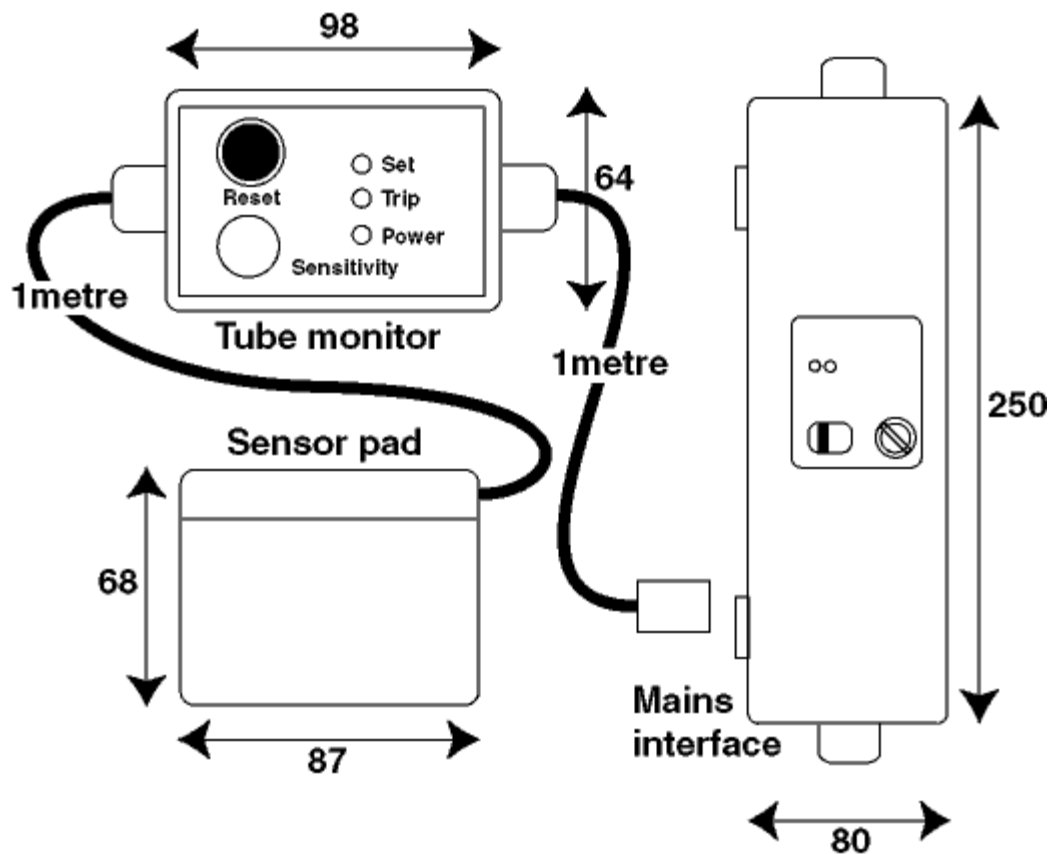
Replacement sensor pads

The Sensor Pad is coated with a resistant Polyester film and should be wiped dry after any spillage. If, after repeated use, it becomes damaged, a replacement Sensor Pad, complete with lead and connector, may be ordered.

Replacement pad order code 059.4521.000

To fit the replacement pad, disconnect the tube monitor from the pump or Mains Interface. Remove the tube monitor cover and disconnect the two-way Molex connection. Unscrew the gland connection (and locknut). Remove the cable, complete with connector, through the entry point. Feed the new lead and connector back through the entry and plug into the PCB. Re tighten the gland and refit the cover securely, ensuring that the three LEDs are visible through the window.

Outline Dimensions



Trademarks and disclaimer

Watson-Marlow is a registered trademark of Watson-Marlow Limited.

Disclaimer The information contained in this document is believed to be correct but Watson-Marlow Limited accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

Publication history

PB0145gb-02; m-tubemon-gb-02.htm: Watson-Marlow tube monitor
 First published 08 02.

Decontamination certificate

In compliance with the *UK Health and Safety at Work Act* and the *Control of Substances Hazardous to Health Regulations*, you are required to declare the substances which have been in contact with product(s) you return to Watson-Marlow or its subsidiaries or distributors. Failure to do so will cause delays. Please ensure that you fax us this form and receive an RGA (Returned Goods Authorisation) before you despatch the product(s). A copy of this form must be attached to the outside of the packaging containing the product(s). Please complete a separate decontamination certificate for each product.

You are responsible for cleaning and decontaminating the product(s) before return.

Your name

Company

Address

Postcode/zip

Country

Telephone

Fax

Product type

Serial number

To speed the repair, please

describe all known faults

The product has ... Been used Not been used

If the product has been used, please complete all the following sections. If the product has not been used, please just sign this form.

**Names of chemicals
handled with product(s)**

**Precautions to be taken in
handling these chemicals**

**Action to be taken in the
event of human contact**

I understand that the personal data collected will be kept confidentially in accordance with the UK Data Protection Act 1998.

Signature

RGA number

Your position

Date

Please print out, sign and fax to Watson-Marlow Pumps at +44 1326 376009.