

Coda Octopus Martech Ltd

Installation and Operation Manual

Fire Sprinkler Watchdog

MODEL No. : FSW01

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Test, measurement and control solutions, engineered for demanding applications in aerospace and subsea

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Safety Instructions

WARNING! All electrical installation and maintenance work on the unit should be carried out by a competent person.

Products manufactured by Martech are safe and without risk provided they are installed, used and maintained in good working order in accordance with Martech's instructions and recommendations.

The Fire Sprinkler Watchdog is intended to be permanently connected to the fixed electrical wiring of the mains system.

The inclusion of a Residual Current Device (RCD) (Earth trip) with a trip current of 30mA is recommended. This may already be part of the consumer unit.

There are 2 replaceable AAA alkaline batteries (supplied) fitted inside the Fire Sprinkler Watchdog. Only a competent tradesperson should remove the exterior cover.



WARNING! Turn off the electrical supplies before removing the cover. The electricity must be turned off at the mains and the appropriate circuit fuse removed, if applicable.

WARNING! Not to be mounted on a surface with a temperature of >20°C above ambient.

Description

The Martech Sprinkler Pump Watchdog has been developed to meet the latest requirements for sprinkler system integrity and maintenance, and draws on a wealth of experience in fire sprinkler installation. Incorporating micro-processor control, the watchdog performs the following key functions:

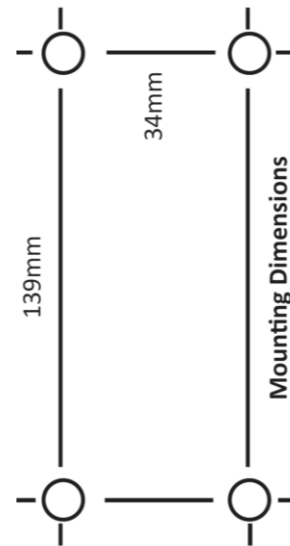
- Automatic periodic pump test
- Check for pump failure
- Routine maintenance reminder
- Auto-dialler connection

During normal operation the watchdog automatically runs the pump periodically (every week) and measures key parameters to check the pump's performance and health helping to ensure the fire sprinkler system is fully operational when it matters.

Four LED indicators on the Watchdog front panel illuminate to show that mains power is applied to the unit; when the pump is running; if a fault has been detected; and when routine maintenance of the pump is due. In addition, a beeper sounds during the automatic pump test (max 10 seconds) to alert to a fault condition or that a service is required.

Designed and manufactured in the UK, the Sprinkler Pump Watchdog complies with all safety requirements, and gives you the peace of mind that your fire safety system is in full working order. The Fire Sprinkler Watchdog is an electronic device constructed from fire resistant ABS and intended to be bulkhead/wall mounted. The Fire Sprinkler Watchdog has been developed to meet the latest requirements of BS9251 for sprinkler system integrity and maintenance. The device incorporates microprocessor control which allows the watchdog to perform the following key functions:

Mechanical Installation



The Fire Sprinkler Watchdog should be fitted to a wall near the sprinkler pump. Fit the enclosure to the wall with the cable glands on the underside. The diagram above shows the positions for the four fixing screws. The fixing holes for the enclosure are revealed with the lid removed.

Electrical Installation

Before connecting the Fire Sprinkler Watchdog, the electricity must be turned off at the mains and the appropriate circuit fuse removed. The electrical connections to the mains supply use the left cable gland and connect to the terminal block J5 (see diagram page 5). The connections to the pump use the right cable gland and connect to the terminal block J6 (see diagram page 5). This connection includes a permanent live terminal and a switched live. The permanent live is used to connect to the pump controller that provides power to the pump in the event of a sprinkler operating. The switched live is a power supply that is activated by the watchdog to test the pump.

The centre gland in the bottom of the enclosure is to be used to connect wires to a remote device (e.g. auto-dialler) to signal alarm conditions. The alarm contacts use the three terminals on a change over relay.

After wiring is complete, insert 2 "AAA" alkaline batteries (supplied) into the battery holder.

Setting-up

The Fire Sprinkler Watchdog measures the current taken by the motor to determine whether the pump is operating correctly. Because the Fire Sprinkler Watchdog is compatible with a wide range of pumps each of which have different power requirements, it must be set up at the time of installation so that the correct reference current is stored in the unit. To configure the Fire Sprinkler Watchdog after initial installation for the installed pump:

1. Apply mains power.
2. Press and hold the service test button SW1 (inside the unit) **TAKE CARE TO AVOID ELECTRIC SHOCK**
3. The pump should run (you must confirm that the pump is running)
4. After approx. 10 seconds, the unit will beep to confirm that it has measured the current and set it as the reference level
5. Release the service test button SW1
6. Fit the lid to the Fire Sprinkler Watchdog using the screws provided.

7. Test the unit again by pressing the test button on the front panel

WARNING! It is critical that during the set-up and subsequent tests, the installer confirms that the pump is operating and actually running. Failure to validate correct pump operation may result in the Fire Sprinkler Watchdog operating incorrectly and may result in the pump not operating correctly in the event of a fire.

NOTE. For new pumps it is important to run the pump for several minutes in accordance with the manufacturer's directions to ensure the pump is run-in before performing the set up procedure.

Operation

After the Fire Sprinkler Watchdog and sprinkler pump have been installed switch on the electricity supply. Ensure that the 'Power' indicator is illuminated. If not the electricity supply is not connected correctly and the fault must be investigated.

The operation of the sprinkler pump may be tested by briefly pressing the test button. Ensure that 'Pump' indicator illuminates for 10 seconds. During this period the sprinkler pump should run. If the pump does not run because it is not connected correctly and takes no current or excessive current the 'Fault' indicator will start flashing. If so investigate the fault.

The Fire Sprinkler Watchdog has an internal clock that is used to time the weekly pump test. The clock is reset by pressing and holding the test button until the buzzer sounds. This will initiate the pump test which will re-occur every week at this time.

Service

The batteries should be replaced as part of the sprinkler system annual service. **Standard alkaline batteries will maintain the unit settings during power failures for up to 1 week of power loss in total. ONLY USE GOOD QUALITY ALKALINE BATTERIES.**

After servicing, to commission the Fire Sprinkler Watchdog press the service pushbutton within the enclosure (SW1 diagram on page 5), this will reset the Service indicator.

Fit the lid and press and hold the test button until the beeper sounds, the pump will run. This will set the Fire Sprinkler Watchdog to test the pump at this time every week.

The indicators will be as follows:

PUMP – on - while pump is running (approx. 10s)

SERVICE – off

FAULT – off

POWER – on - the Fire Sprinkler Watchdog is working.

Indicators

The table at the end of the document gives the function of the four LED indicators on the front panel of the Fire Sprinkler Watchdog, and also the function of the alarm contacts.

Technical Specification

Dimensions

Width 160mm
Height 90mm
Depth 50mm

Construction Fire resistant ABS to UL 94V, IP65 rated and Pollution degree 1.

Glands The Sprinkler box installation contains 3 off M16

click-in cable glands (2 required, 1 optional). The following cable diameters apply: MIN=5mm MAX=9mm

Safety CE assessed and compliant. For a copy of the certificate please contact Coda Octopus Martech.

Power 230±10%Vac 50/60Hz, Max voltage 260V, 10Amps recommended normal pump operating current, 16A max peak/overcurrent. (Watchdog standby <5Watts). Internal battery backup for clock/timer - standard AAA cells. Requires installation by a competent person.

Lid Securing Screw Torque max. Torque 0.7NM.

Controls & indicators 4 front panel LED indicators for:

- **Pump;** on when power is applied to pump. (pump should be running)
- **Fault;** on if a fault is detected such as pump not running
- **Service;** on when the next pump service is due.
- **Power;** on when main power is applied to the unit

Operation The standard operating mode cycles the pump for 10 seconds every week and measures key electrical parameters to determine the health of the pump. This includes checking for excess current (e.g. the pump is seized or developing a fault) and for low/no current (e.g. the wiring is open circuit, a fuse has blown and pump is not running).

Other features Battery backed internal clock timer ensures that time and day selected for automatic pump testing is maintained in the event of a power failure.

Volt-free contact for connection to auto-dialler; contact closes when a fault is detected or service is required to automatically alert a service agent (optional).

Operational temperature range -10 °C to +70 °C.

Indicator	LED Action	Sounder	Description	Alarm Contacts COM to NO
Pump	On - constant	None	Indicates motor power applied.	Open
Service	On - constant	None	Yearly service required.	Closed
Service: low battery	Flashing: every 2 seconds	Beep: every 10 seconds	Internal battery requires replacing.	Open
Fault: overcurrent	Flashing: every second	Beep: every 10 seconds	Excess current drawn when motor "on".	Closed
Fault: undercurrent	Flashing: every 2 seconds	Beep: every 10 seconds	Low or zero current drawn when motor on. This will also occur if there has been a mains outage during the motor test period. Beeps & when mains restored also flashes.	Closed
Power	On - constant	None	Indicates 240V Mains present at box.	Open
Power	Off	Beep: every 10 seconds on attempt to test	240V Mains is not present but it is trying to run the motor as scheduled by service interval.	Open

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