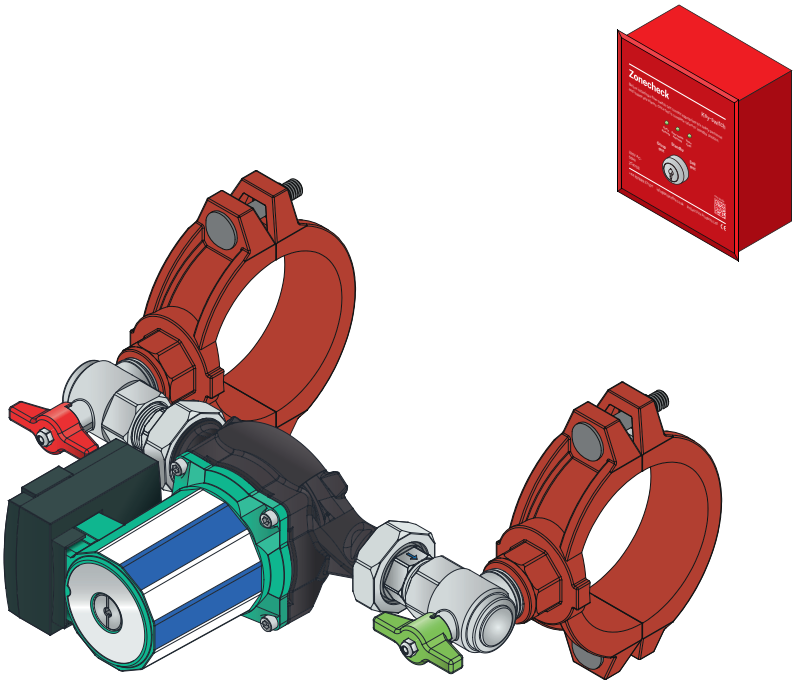
# Zonecheck®

## Retrofit

with key-switch

ZC-RFUS-IB-12/21-03




Instruction Booklet

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**Information**
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Zonecheck is a registered product name of Project Fire Products Ltd. European patent No. 0907833.

# Contents


1 Pre-checks
2 Installation
3 Commissioning
4 Testing
5 Orientation
6 Typical connection
7 Stand Alone wiring
8 Group wiring
9 Flow-switch Wiring
10 Dimensions
11 Specifications
12 Troubleshooting
13 Important Information
14 Standards & Approval
15 Warranty
16 End of Life Cycle

# Pre-checks

**Before you install Zonecheck follow these simple steps.**

1 Open the box and remove all packaging.
2 Check you have the correct sized mech tees.
3 Check that there is a key-switch and key in the box.
4 Inspect the product to make sure it hasn't been tampered with. If you have any queries please contact your supplier.

# Component list

1 Zonecheck Retrofit (mech-tees already connected)
2 Keyswitch (for activating testing)
3 Document pack with includes instruction booklet, testing schedule,

# Installation

*Zonecheck should be installed by a competent fire sprinkler installer and a suitably qualified electrician.*

1. Contact building management to inform them of proposed works.
2. Isolate and drain down selected zone.
3 Marry the Zonecheck Retro-fit up to the pipe around the flow-switch ensuring that it is in the correct orientation (pump horizontal) and direction (pump direction opposite to sprinkler flow direction) (see page 05).
4. Measure the distance between the mech-tee outlets.
5. On the centre-line of the pipe mark two points equally spaced either side of the existing flow-switch using the measurement you have just taken (this should be around 313mm - see page 10 for details).
6. Cut two holes on the designated marks with a hole-saw:

    2"-4"pipe ..... Ø38mm *(1½" hole-saw)*
    6" pipe ..... Ø51mm *(2" hole-saw)*
    8" pipe..... Ø64mm *(2½" hole-saw)*

7. Remove burrs and clean pipe surface around the hole.
8. Fit the Zonecheck to the pipe. Double check it is facing the correct direction & in the correct orientation (see pages 04 & 05) before tightening the mech-tee bolts.
9. Fit the key-switch to the wall in a suitable location that is easy to reach from floor level.
10. Wire the Zonecheck & flow-switch in accordance with the instructions on pages 07-09.
11. Re-charge the zone with water *(on completion, proceed to commissioning - page 03).*

**DO NOT ATTEMPT TO MODIFY ZONECHECK,
TAMPERING WILL VOID THE WARRANTY.**

# Commissioning

Ensure the following three tasks have been completed before starting:

- Zonecheck mechanically installed
- Zonecheck wired and power is on
- Zone charged with water

1 Close the inlet valve (red) and outlet valve (green), make sure the key-switch is turned to the STANDBY position (fig.1).
2 Remove the access plug from the pump cartridge (fig.2).
3 Using an flat-headed screwdriver turn the spindle clockwise and anti-clockwise to check the free movement of the spindle and impeller (fig.2), replace the access plug.
4 Open the red and green valves on the Zonecheck (fig.1).
5 Connect a hosepipe to the test-valve at the furthest point on the zone.
6 Contact building management to authorise a flow-switch test.
7 Discharge water through the hose (this is a once only commissioning test).
8 Check that the FLOW-SWITCH ACTIVATED LED is illuminated on the key-switch.
9 Close the test valve.
10 Turn the Zonecheck key-switch to SELF TEST and check the PUMP RUNNING and FLOW-SWITCH ACTIVATED LEDs are illuminated (this could take up to 90 seconds).
11 Confirm that building management have received their test signal.
12 Turn the key-switch key to STANDBY and remove key.
13 Fix operating instructions to wall, preferably next to the key-switch. Also place the Zonecheck isolation valve location sticker in a suitable position to let others know where the unit is.
14 Ensure that the end user is instructed on how to carry out a routine test.
15 Fill in and hand over a completion certificate.

Fig.1

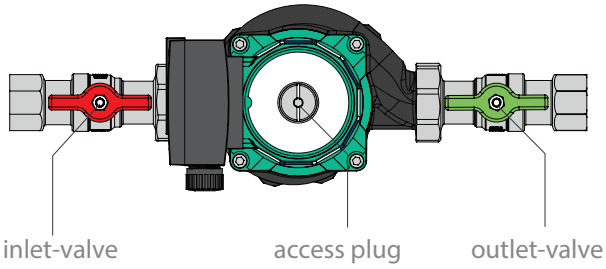
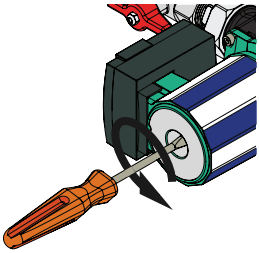



Fig.2



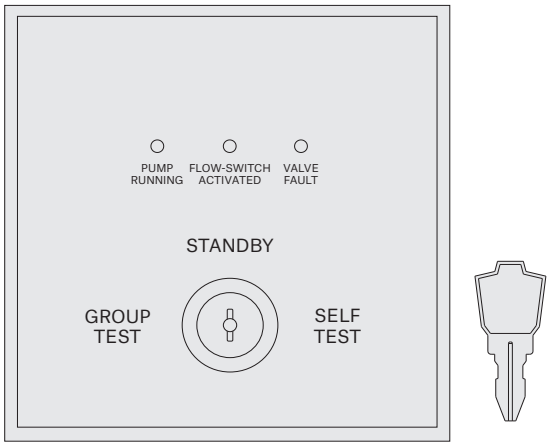
# Testing

**Test one Zonecheck**

1 Insert the key into the key-switch and turn to SELF TEST (the PUMP RUNNING LED will activate).
2 When the flow-switch operates, the FLOW-SWITCH ACTIVATED LED will activate (please wait for up to 30 seconds for the flow-switch to operate).
3 Return to STANDBY position and remove the key.

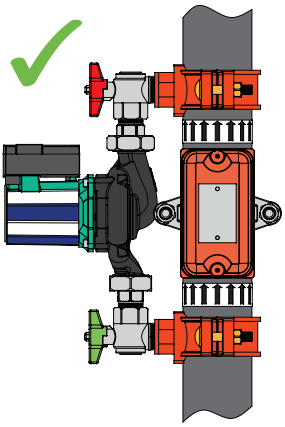
**Test a group of Zonechecks**

1 To test all the Zonechecks in the group, insert the key into the key-switch and turn to GROUP TEST.
2 Look at the central fire control panel to confirm simultaneous activation of all the flow-switches within the group.
3 Return to STANDBY position and remove the key.

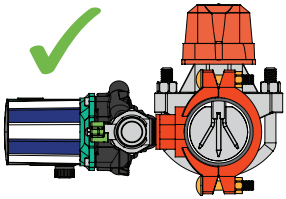


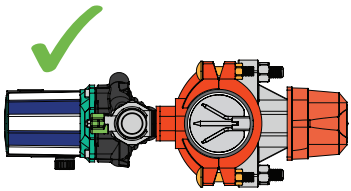
# Orientation

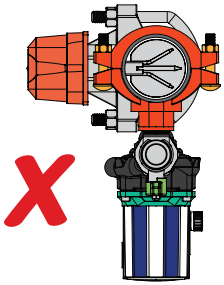
- The pump direction-of-flow arrow faces the opposite direction to the system flow.
- Do not position the flow-switch on the underside of the pipe.
- For riser applications, make sure the pump flow runs opposite (downwards) to the sprinkler system flow.



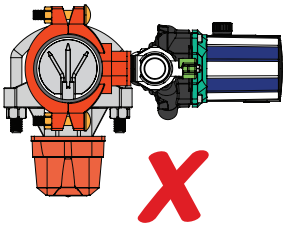
plan view





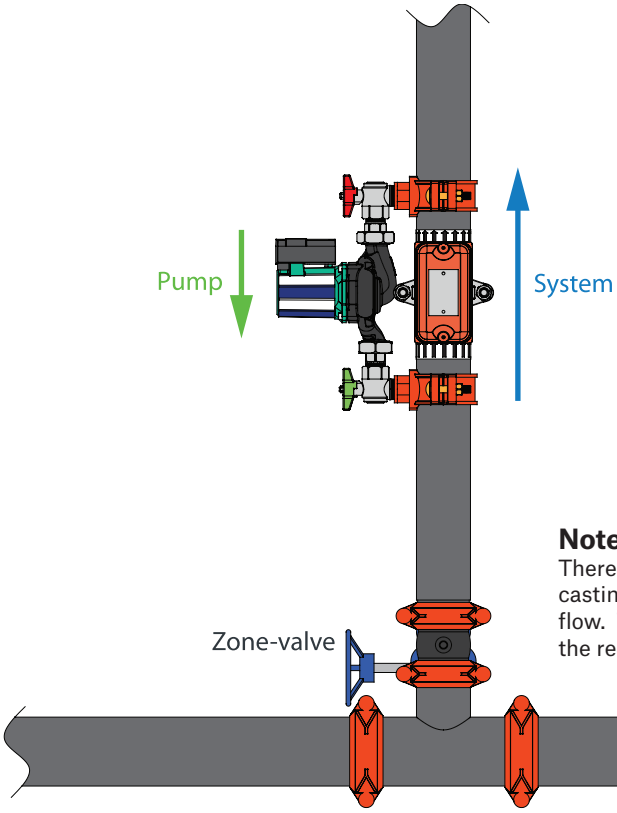


pump not horizontal



flow-switch on under-side of pipe

# Typical Connection

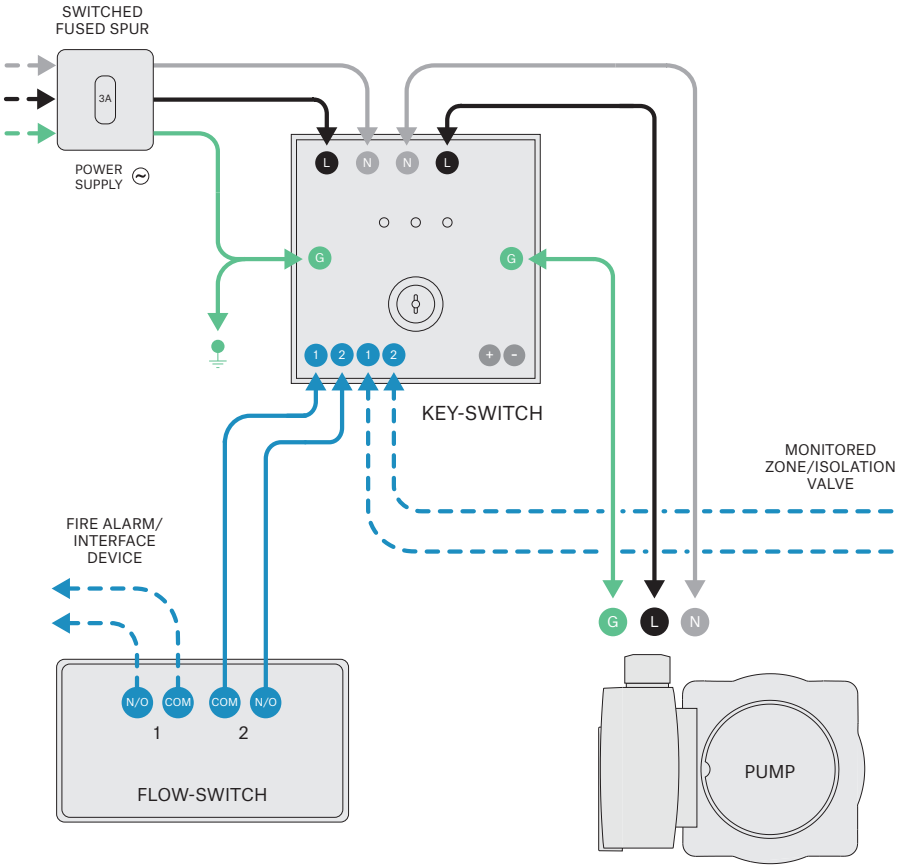



**Note**
There is an arrow on the pump casting which shows the pump flow. The water show move from the red valve to the green valve.

view from above

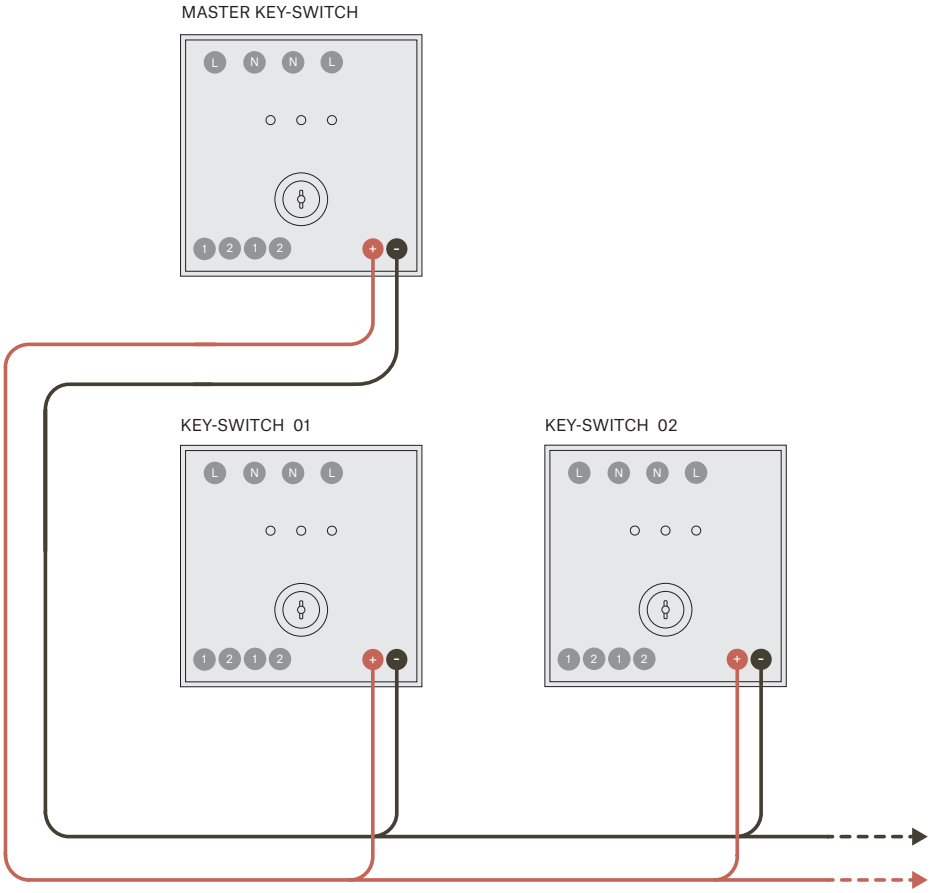
# Stand Alone Wiring

Please note Zonecheck should be installed by a competent fire sprinkler installer and wired up by a qualified electrician.



# Group Wiring

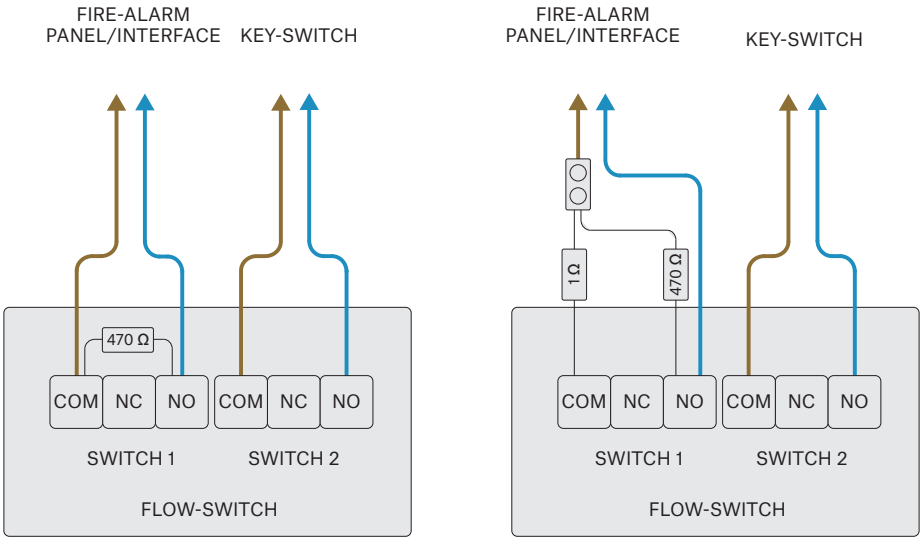
Upto 25 Zonechecks can be tested simultaneously when the Zonecheck units are wired in parallel via interconnect by turning the master key-switch to GROUP TEST. The maximum cable distance of 300m should not be exceeded when grouping key-switches.



# Flow-switch Wiring

Zonecheck should be installed by a competent fire sprinkler installer and wired up by a qualified electrician.

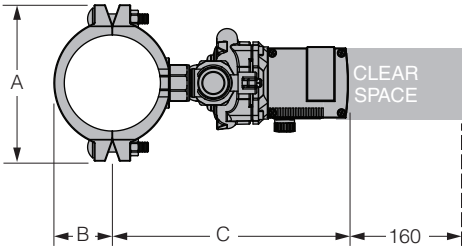
The following diagrams show typical fire-alarm/interface connections for flow-switch end-of-line resistors. The wiring setup depends on the make and model of the fire panel used. Always refer to your specific fire-alarm panel instructions for more information.

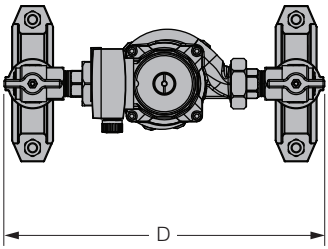



**DIAGRAMS SHOW TYPICAL APPLICATIONS ONLY.**
**ALWAYS REFER TO FIRE-ALARM INSTRUCTIONS.**

## Dimensions

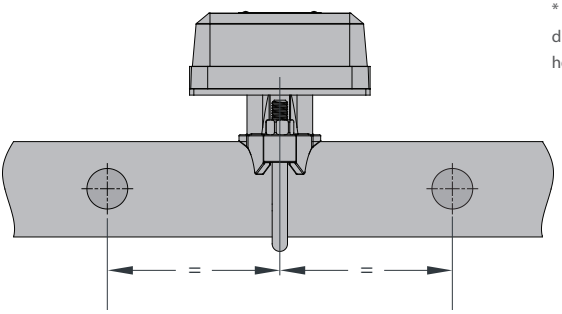
Please check your version of flow-switch (System Sensor or Potter) before referring to dimensions. Dimensions shown in mm.




| Model | Ø | A | B | C | D |
|---|---|---|---|---|---|
| ZC450-USR50 | 50 *2″* | 130 | 45 | 265 | 395 |
| ZC450-USR65 | 65 *2½″* | 150 | 52 | 275 | 395 |
| ZC450-USR80 | 80 *3″* | 162 | 56 | 280 | 395 |
| ZC450-USR100 | 100 *4″* | 195 | 72 | 290 | 416 |
| ZC450-USR150 | 150 *6″* | 260 | 100 | 335 | 416 |
| ZC450-USR200 | 200 *8″* | 330 | 125 | 380 | 425 |

## Hole Locations




* Due to assembly with screwed threads, exact dimension will vary slightly. If in doubt, measure hole centres on product before drilling.

# Specifications

**Zonecheck Retrofit**

| | |
|---|---|
| Working Pressure Rating | Water, 12 bar (175 psi) maximum |
| Operating Temperature Range | 0°C - 49°C (32°F – 120°F) |
| Mech Tees to suit pipe diameter | 50, 65, 80, 100, 150mm (2, 2½ 3, 4, 6 “) |
| Approvals | LPCB, UL, FM and VdS |

**Circulation Pump**

| | |
|---|---|
| Operating Voltage | 120v 60Hz |
| Full Load Current | 0.93 A |
| Power Rating | 195 W maximum |
| IP Rating | IP44 |

**Key-switch**

| | |
|---|---|
| Mounting | Flush-mounting |
| Type | ZCKSE |
| Operating Voltage | Single-phase 120V 60Hz |
| Internat Consumption | 7.5 W Maximum |
| Operation Modes | Self-test: Wired locally<br>Group test: Interconnected |
| Standby (Ready state) | No LED |
| Test Initiation | ‘Pump Running’ LED |
| Flow Switch Activation | ‘Flow-switch Activated’ LED |
| Valve Fault (optional) | ‘Valve Fault’ LED |

# Troubleshooting

Zonecheck Retrofit should be troubleshooted by a competent fire sprinkler installer and wiring checked by a qualified electrician.

| | |
|---|---|
| **No lights on key-switch.** | Open the key-switch and check the wiring against the wiring diagram. Confirm the power supply has been connected properly. |
| **Only PUMP RUNNING LED illuminates** | 1 Check the red & green Zonecheck valves are open.<br>2 Check Zonecheck has been installed facing the correct way.<br>3 Remove the plastic lid from the flow-switch, push and hold the trigger with your finger for 30 seconds. If the water-flow light (on the key-switch) operates see below. If not check the wiring against the diagram. |
| **Pump runs hot and does not operate the flow-switch.** | 1 Carefully loosen the vent valve on the Zonecheck pump to remove the air, allow water to drain to make sure all air is bled from the unit (see commissioning instructions).<br>2 Retighten the vent valve.<br>3 Run the pump by activating the key-switch<br>4 Repeat steps 1-3 if necessary |
| **Pumps runs while in STANDBY** | Key-switch has been incorrectly wired. Isolate the power then check the wiring diagram and rewire.<br><br>If there is still a problem, contact technical support at Project Fire. |

# Important Information

- Zonecheck Retrofit should be installed by a competent fire sprinkler installer and wired up by a qualified electrician.
- Ensure Zonecheck Retrofit is installed both mechanically and electrically commissioned and tested prior to leaving site.
- Ensure protection to Zonecheck is employed whenever there is an extended period from installation to commissioning.
- If the Zonecheck Retrofit could be activated when the sprinkler system zone is drained down then it is vitally important that the Zonecheck red and green valves are left in the closed position. This is to ensure the motor is not accidentally run dry and damaged. (Please ensure the commissioning engineer is aware of the closed Zonecheck valve status).
- Always use a flat faced wrench for Zonecheck commissioning.
- The suggested location for the key-switch is at low level for visibility and access.
- The suggested location for Master key-switch (optional, see group testing) is adjacent to the fire alarm panel.
- Each Zonecheck Retrofit is factory assembled and tested. Do not attempt to reconfigure. Tampering will void the warranty.
- Maximum working pressure - 12 bar (175 psi), test pressure - 18 bar (260 psi).
- Use Zonecheck flow-switch testers in wet-pipe systems only. Do not use in dry pipe, deluge, or pre-action systems.
- Only activate the Zonecheck key-switch when the valves are opened and the sprinkler system is full.
- The pump direction-of-flow arrow faces the opposite direction to the system flow (see page 06)
- A local monitored zone/isolation valve can be wired to the key-switch for added functionality. If connected, when the valve is not in the fully open position the key-switch ‘VALVE FAULT’ LED will illuminate.

# Standards & Approvals

All international fire code standards such as NFPA etc all make the flow-switch test mandatory. Zonecheck can carry out this test at the turn of a key. Zonecheck is approved by LPCB, UL, FM and VdS.

# One Year Warranty

Project Fire Products warrants its enclosed Zonecheck flow-switch tester to be free from defects in materials and workmanship under normal use and service for a period of one year from date of manufacture. Project Fire Products makes no other express warranty for this flow-switch tester. No agent, representative, dealer or employee of the Company has the authority to increase or alter the obligations or limitations of this warranty. The Company's obligation of this warranty shall be limited to the repair or replacement of any part of the flow switch tester, which is found to be defective in materials or workmanship under normal use and service during the one-year period commencing with the date of manufacture. After phoning Project Fire's number, 01889 271 271 for a Return Authorization number, send defective units postage prepaid to Project Fire, Pasturefields Industrial Estate, Pasturefields Lane, Hixon, Staffs, ST18 0PH. Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to repair or replace units, which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault.

# End of Life Cycle

Project Fire recommend that at the end of the products life cycle the items need to be disposed of correctly:
Disposal of business or commercial waste should be in compliance and accordance with local government guidance and regulations.
Disposal of electrical waste should be in compliance and accordance with “Waste Electrical and Electronic Equipment recycling” (WEEE)

projectfire

innovators in fire protection

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