DUTYPOINT SETTING THE BAR

Dutypoint ResiSHIELD

Model - RZ-W

Operation and Maintenance Manual

DOC-RSRZW2306

DUTYPOINT SETTING THE BAR

About us.

Applied knowledge.
Shared know-how.
Fearless innovation.

Together, we are Dutypoint. Since 1976, we've been building up industry-defining expertise in fluid technology.

This knowledge means we solve complex challenges with straightforward solutions that are built around meeting and exceeding our clients' needs. We approach everything with the same philosophy: how will we go above and beyond?

Our commitment to collaboration and sharing knowledge galvanises and cements robust relationships. Relationships that are built to last, because our clients are our partners.

Our focus for the future? Innovation. We want to be the future of our industry, globally. Where we benchmark thought leadership, expertise and customer care.

We set the bar.

Contact details.

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Table of Contents

1. Important Safety Information

1.1 Health & Safety at Work Act 1974

Section 6(a) of this Act requires manufacturers to advise their customers on the safety and the handling precautions to be observed when installing, operating, maintaining and servicing their products. The user's attention is therefore drawn to the following:

- The appropriate sections of this manual must be read before working on the equipment.
- Installation, operating and maintenance must only be carried out by suitably trained/qualified personnel.
- Normal safety precautions must be taken and appropriate procedures observed to avoid accidents.

Refer to Dutypoint for any technical advice or product information. It is the responsibility of the customer and/or the contractor:

- To ensure that anyone working on the equipment is wearing all necessary protective gear/clothing;
- Is aware of appropriate health & safety warnings and to read the information in this manual.

1.2 Safety Messages and Hazard Statement

Table 1.1: Hazard Notice Definitions

Message Level	Definition
DANGER	A hazardous situation which, if not avoided, will result in death or serious injury
WARNING	A hazardous situation which, if not avoided, could result in death or serious injury
CAUTION	A hazardous situation which, if not avoided, could result in minor injury or moderate injury
ELECTRICAL HAZARD	Risks associated with electricity will cause hazards if not properly avoided
Note	A situation which may arise resulting in undesirable conditions and/or will not cause direct hazards to persons

1.3 Qualified Personnel

WARNING

This product is intended for operation by qualified personnel only

- Only qualified personnel are allowed to install or operate this equipment
- Qualified personnel are defined as trained staff, who are authorised to install, commission and maintain equipment, systems and circuits in accordance with relevant laws and regulations. Personnel must be familiar with the instructions and safety procedures described in this document.
- This product should not be used by anyone with mental disabilities, or anyone without the relevant experience and knowledge, unless they have received instructions on using the equipment and on the associated risks, or are supervised by a responsible person.
- Children must be supervised to ensure they do not play on or around the equipment.

1.4 Environmental Protection

All local regulations and codes regarding emissions and waste disposal must be followed. This may include:

- Reporting of emissions to appropriate authorities

- Sorting, recycling and disposal of solid or liquid waste
- Clean-up of spills
- Separate disposal of electrical components from domestic waste

1.5 Mechanical Device Servicing

- Familiarise yourself with the relevant contents of this manual
- Installation, maintenance and repair work must only be carried out by trained, skilled and suitably qualified personnel.
- Disconnect or lock-out the power source to ensure that the item(s) will remain inoperative. Locking out the equipment by switching off the release mechanism or set value WILL NOT prevent accidental starting.
- Allow the item(s) to cool if over-heated.
- CLOSE the isolating valves on the suction and discharge connections of the affected item(s).
- If working on pump, VENT slowly and cautiously – Refer to the relevant section of this manual.
- DRAIN the pump(s).

1.6 Pump Hand Control Mode (Where Fitted)

In the 'HAND' position the pump(s) controlled by the switch will normally run at full speed and completely independently of any control devices, and can result in pump(s) running against a closed valve head if there is no draw. This can cause the system to be maintained at the maximum pressure produced by the pump plus any incoming pressure and additional pressure caused by water surge and can potentially damage the pump and other parts of the system.

The 'HAND' option should only be used with a competent operator in attendance, or when there is a continued demand sufficient to provide constant flow through the pumps to maintain the running pressure of the system to an acceptable level.

1.7 Personal Protective Equipment

Use personal safety equipment according to the site conditions and employer regulations. This may include, but may not be limited to:

- Hard hat
- Safety goggles with side shields
- Protective footwear
- Protective gloves
- Respirator
- Ear protection
- First aid kit
- Safety devices

1.8 Precautions Before Commencing Work

Ensure that the following safety precautions are complied with before commencing work:

- Create a safe working area, and provide a suitable barrier around the work area
- Ensure all safety guards are in place and secure
- Ensure you have a clear path of exit
- Ensure that the product cannot roll or fall over and cause damage to persons or property
- Ensure all lifting equipment is in good condition and rated for the intended task
- Use a lifting harness, safety line and respirator as required
- Allow hot components to cool before handling them
- Ensure that product has been thoroughly cleaned
- Disconnect and lock out power supply, ensuring that it cannot be accidentally re-connected

- Check for any risk of explosion before using hand tools

1.9 Precautions During Work

- Never work alone
- Always wear protective clothing and hand protection
- Stay clear of suspended loads
- Always use appropriate lifting devices
- Beware of risks of sudden starts of any automated equipment such as level control
- Beware of starting jerks of electric motors - these can be powerful
- Do not exceed the stated operating limits of equipment
- Do not remove vent plugs from a pressurised system - ensure pressurised components are relieved of pressure before disassembly
- Ensure guards are in place during operation

1.10 Hazardous Fluids and Chemicals

If hazardous chemicals come into contact with skin or eyes, use the following procedures:

Condition	Action
Chemicals or hazardous fluids in eyes	1) Hold your eyelids apart forcibly with your fingers 2) Rinse the eyes with eyewash or running water for at least 15 minutes 3) Seek medical attention
Chemicals or hazardous fluids on skin	1) Remove contaminated clothing 2) Wash the skin with soap and water for at least 1 minute 3) Seek medical attention

1.11 Electrical Safety - High Voltages

This information is especially applicable when Variable Speed Controllers (Inverters) are fitted to pumps.
When the inverter variable speed drive head is connected to the power supply the components of the power unit as well as certain components of the master control unit – are also connected to the power supply.

DANGER!

Touching these components can seriously endanger life!

- Before removing the frequency inverter cover, the system must be disconnected from the power supply
- After switching off the power supply wait at least 5 minutes before starting work on or in the inverter drive head - the capacitors in the intermediate circuit must be given time to discharge completely via the discharge restors.

ELECTRICAL HAZARD

Up to 800V can be present - if there are faults this can be higher

- All work carried out when the frequency inverter is open must be performed only by suitably qualified and properly authorised personnel.

ELECTRICAL HAZARD

THE SYSTEM MUST ONLY BE OPERATED WHEN IT HAS BEEN CORRECTLY EARTHED AND PIPES BONDED TO EARTH IN ACCORDANCE WITH IEE REGULATIONS

- When connecting external control wires care must be taken not to short circuit adjacent components. Bare cable ends which are not in use must be insulated.

1.12 Electronic Safety Devices

- Inverter drives contain electronic safety devices which switch off the control element in the event of a fault developing.
- A motor can also be stopped by ‘mechanical blocking’
- If it is switched off electronically, the motor is disconnected from the mains voltage supply via the electronics in the inverter drive.
- Voltage fluctuation and power failures (temporary outages) can cause the motor to switch itself off.

WARNING

A motor will have zero current but will remain energised as it stops

- Take necessary precautions - the motor is not voltage-free in the circuit itself

WARNING

Repair of faults can cause items to start up again unexpectedly

Ensure the motor is isolated before commencing any work

WARNING

High voltage tests of inverters may damage the electrical components.

- Bridge before the incoming/outgoing terminals L-L2-L3 and U-V-W.
- To avoid incorrect metering by capacitors incorporated in the electronic circuits, isolate the motor from the inverter drive head.

1.13 Spare Parts

WARNING

Use of non-genuine spare parts may cause damage to equipment, damage to property and voiding of warranty

- Use genuine, Dutypoint-approved spare parts only
- If in doubt, contact Dutypoint Service on 01452 300590.

1.14 Storage

The product must be stored in a covered and dry location free from heat, dirt and vibrations.

NOTE: Protect the product against humidity, heat sources and mechanical damage

NOTE: Do not place heavy weights on the packed product

1.15 Disposal

At the end of its working life, this product should not be disposed of with standard household waste, but rather dropped off at a collection point for the disposal of Waste Electrical and Electronic Equipment (WEEE) for recycling.

Figure 1.2: Waste Symbol

This is confirmed by the *Waste Symbol* found on the product, user manual or packaging.

Depending on their characteristics the materials may be recycled. Through recycling and other forms of processing Waste Electrical and Electronic Equipment, you can make a significant contribution towards helping to protect the environment.

Please contact your local authorities for information on the collection point nearest you.

2. System Specifications

2.1 Range Specifications

Table 2.1: Range Specifications

Message Level	Definition
Application	BS9251:2021 Category 1 Fire Sprinkler Systems
Pumps	Dutypoint TH Horizontal Multistage. See p. 12
Duty Flow Range	30 - 450 l/min
Duty head range	1 - 9.5 bar
Liquid temperature range	1-23 °C
Ambient temperature range	5 - 40 °C
Humidity	Max 50%
Controller Type	Dutypoint Martech WD2
Maximum System Pressure	10 Bar
Volt Free Contacts	- Fire Mode Activated - Common Fault

2.2 ResiSHIELD Range

Table 2.2: Product Identification

ResiSHIELD Range - Product Identification:

Example model number RZ0504E-MD-PL -W

RZ	0504E	-	M	D	-	P	L

Product Range

DK	Domestic Fire Pump Kits
DH	Domestic Fire Pump Sets
RZ	Residential Fire Pump Sets with Horizontal Pumps
RV	Residential Fire Pump Sets with Vertical Pumps

Pump Denomination

Supply Voltage

M	230v 1ph 50hz
T	415v 3ph 50hz

Starting Type

D	Direct On Line (H500)
Y	Star Delta (H510)
S	Soft Start (H520)
V	VFD (H530)

Pressure Control Type

P	System controlled via 2no pressure switches
T	system controlled via 1no pressure transducer and 1no pressure switch

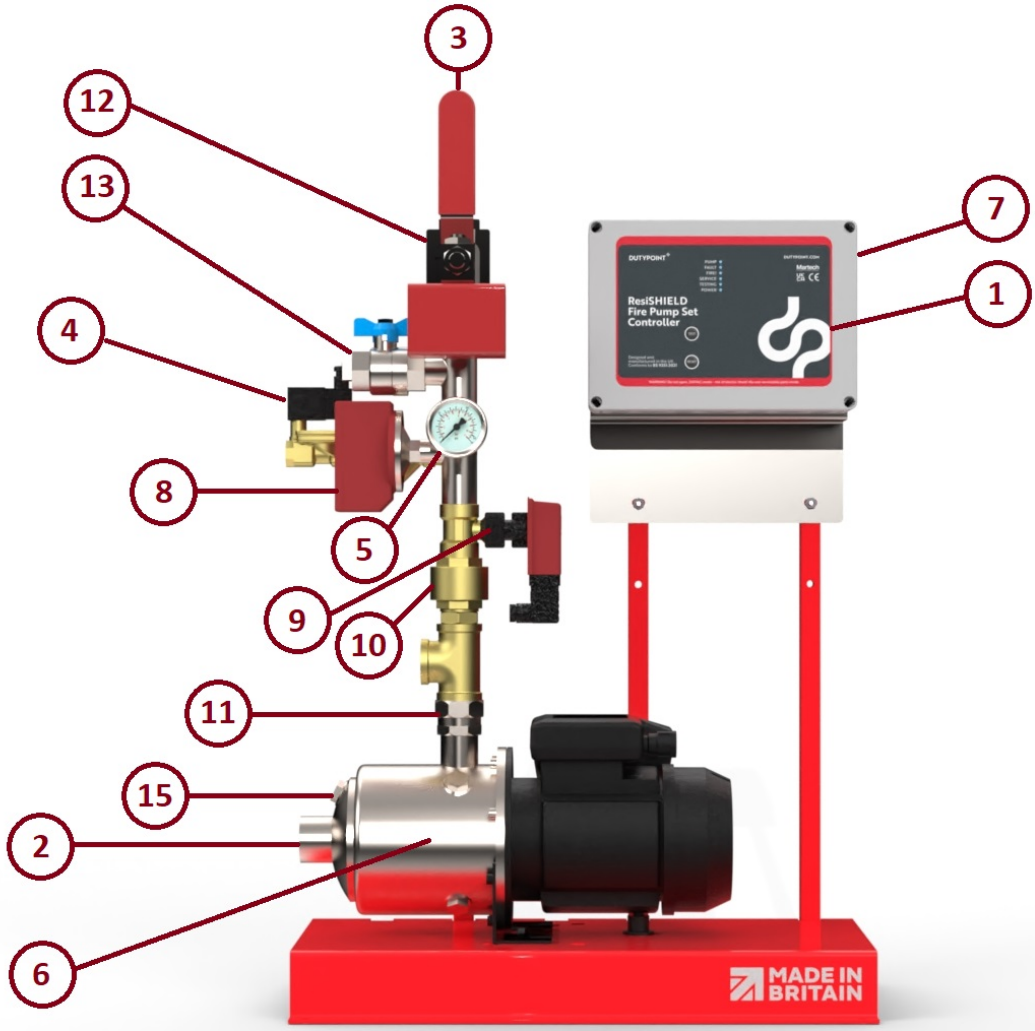
Configuration

L	Suction connection located on left hand side of set
R	Suction connection located on right hand side of set

-W Denotes that a WD2 type panel has been installed

2.3 Product Overview

1. Controller
2. Water Suction Connection
3. Water Discharge Connection
4. Automatic Test Drain Connection
5. Pressure Gauge
6. Pump
7. Control Panel
8. Pressure Switch
9. Flow Switch
10. Non-Return Valve
11. Union
12. Isolation Valve
13. Manual Flow Test Valve
14. Auto Test Solenoid Valve
15. Primer Port



2.4 Technical Data

Table 2.3 : Range Matrix

Model	Pump model	Supply Voltage	Motor Nominal Power (P2) kW	Motor Input Power (P1) kW	FLC (amps)	Suction Size (BSP)	Discharge Size (BSP)	Recommended Supply MCB Type
RZ0302E-M	TH3/2	230/1/50	0.33	0.46	2.5	1 1/4"	1"	D6
RZ0303E-M	TH3/3	230/1/50	0.45	0.6	3	1 1/4"	1"	D6
RZ0304E-M	TH3/4	230/1/50	0.55	0.76	3.7	1 1/4"	1"	D6
RZ0305E-M	TH3/5	230/1/50	0.75	0.91	4.3	1 1/4"	1"	D10
RZ0306E-M	TH3/6	230/1/50	0.9	1.13	5.4	1 1/4"	1"	D10
RZ0307E-M	TH3/7	230/1/50	1.1	1.28	6	1 1/4"	1"	D10
RZ0308E-M	TH3/8	230/1/50	1.3	1.43	6.9	1 1/4"	1"	D10
RZ0309E-M	TH3/9	230/1/50	1.5	1.58	7.5	1 1/4"	1"	D16
RZ0502E-M	TH5/2	230/1/50	0.45	0.59	3	1 1/4"	1"	D6
RZ0503E-M	TH5/3	230/1/50	0.55	0.81	3.9	1 1/4"	1"	D6
RZ0504E-M	TH5/4	230/1/50	0.9	1.1	5.3	1 1/4"	1"	D10
RZ0505E-M	TH5/5	230/1/50	1.1	1.32	6.2	1 1/4"	1"	D10
RZ0506E-M	TH5/6	230/1/50	1.3	1.53	7.3	1 1/4"	1"	D16
RZ0507E-M	TH5/7	230/1/50	1.5	1.74	82	1 1/4"	1"	D16
RZ0508E-M	TH5/8	230/1/50	1.85	2.4	10.5	1 1/4"	1"	D16
RZ1002E-M	TH9/02	230/1/50	0.75	0.87	4.3	1 1/2"	1"	D10
RZ1003E-M	TH9/03	230/1/50	1.1	1.24	6.3	1 1/2"	1"	D10
RZ1004E-M	TH904	230/1/50	1.5	1.7	8.2	1 1/2"	1"	D16

2.4 Technical Data

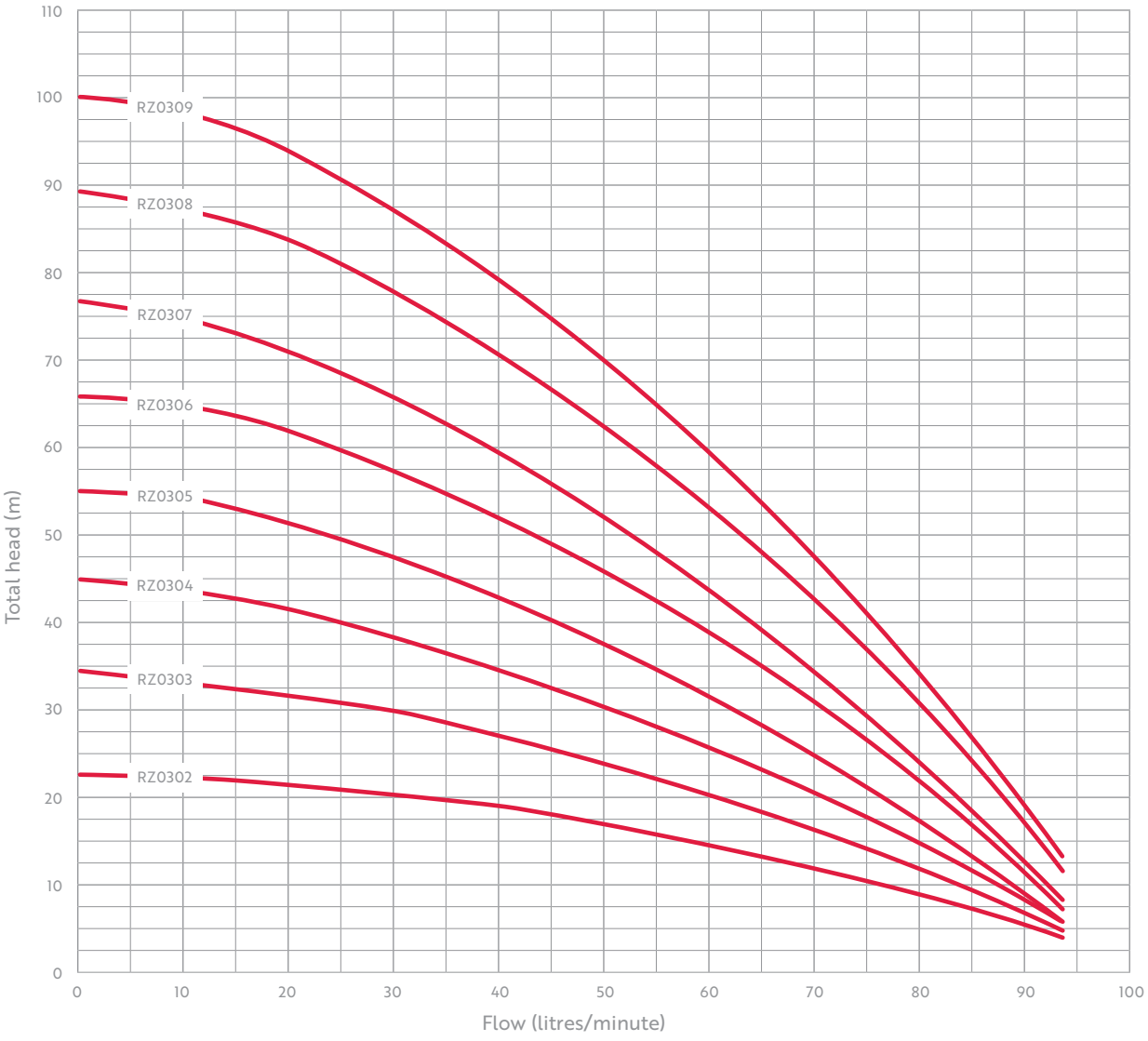
Table 2.3 : Range Matrix

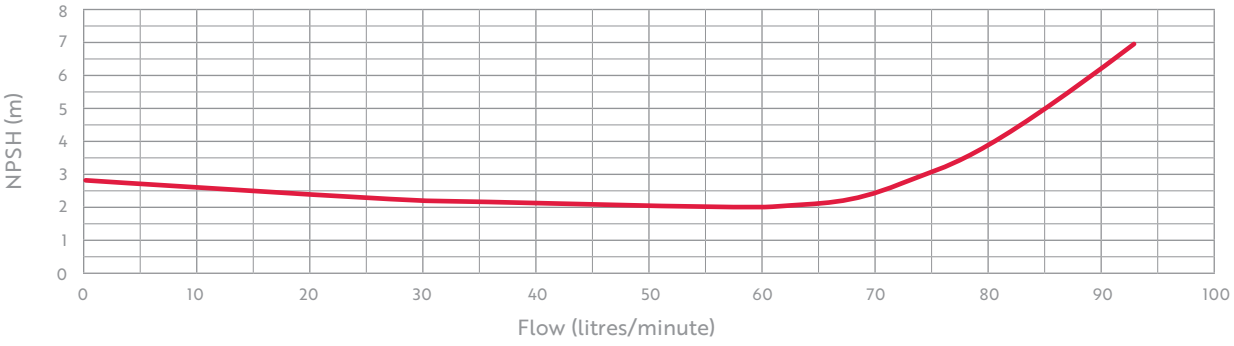
Model	Pump model	Supply Voltage	Motor Nominal Power (P2) kW	Motor Input Power (P1) kW	FLC (amps)	Suction Size (BSP)	Discharge Size (BSP)	Recommended Supply MCB Type
RZ1502E-M	TH15/02	230/1/50	1.5	1.63	7.7	2"	1 1/2"	D16
RZ2002E-M	TH20/02	200/1/50	2.2	2.29	4.3	2"	1 1/2"	D10

2.5 Pump Performance Curves

RZ03 Series

SINGLE PUMP CURVES

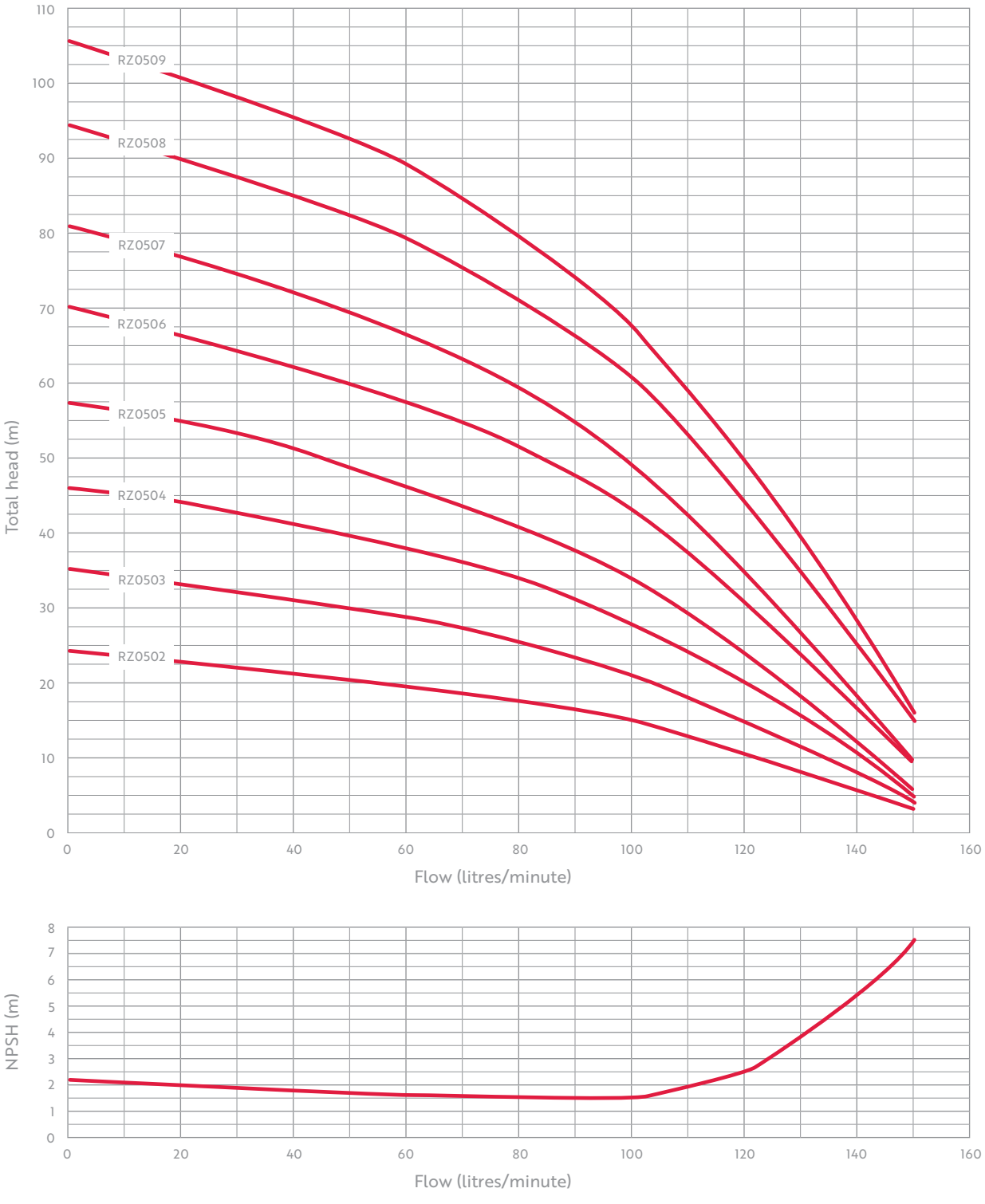




Pump performance curves continued

RZ05 Series

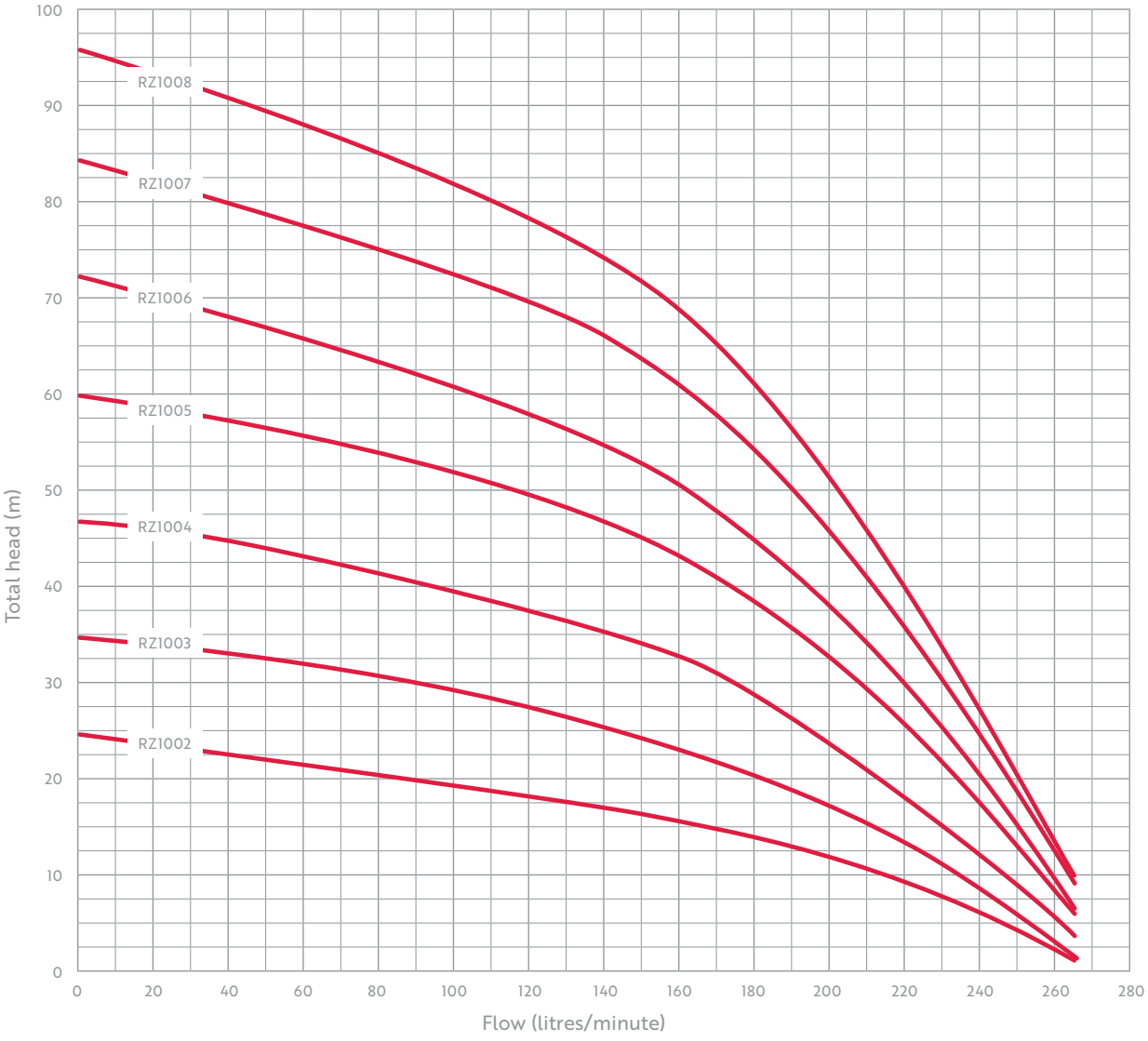
SINGLE PUMP CURVES

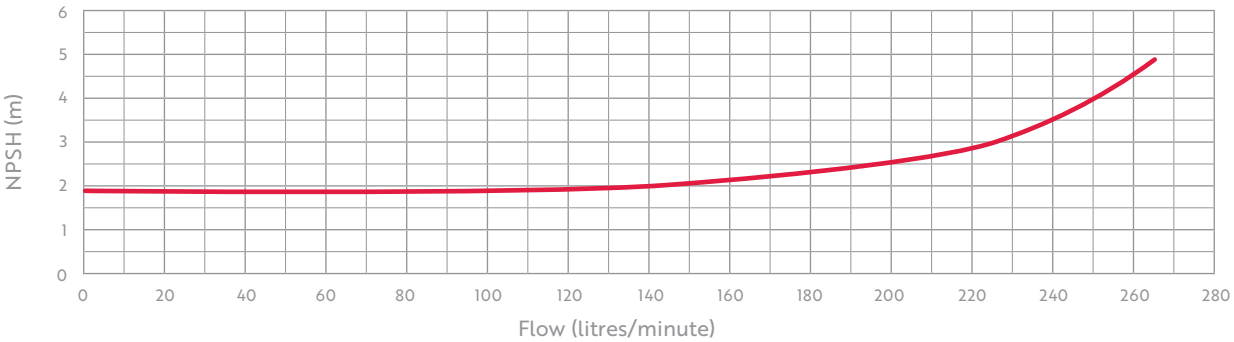


Pump performance curves continued

RZ10 Series

SINGLE PUMP CURVES

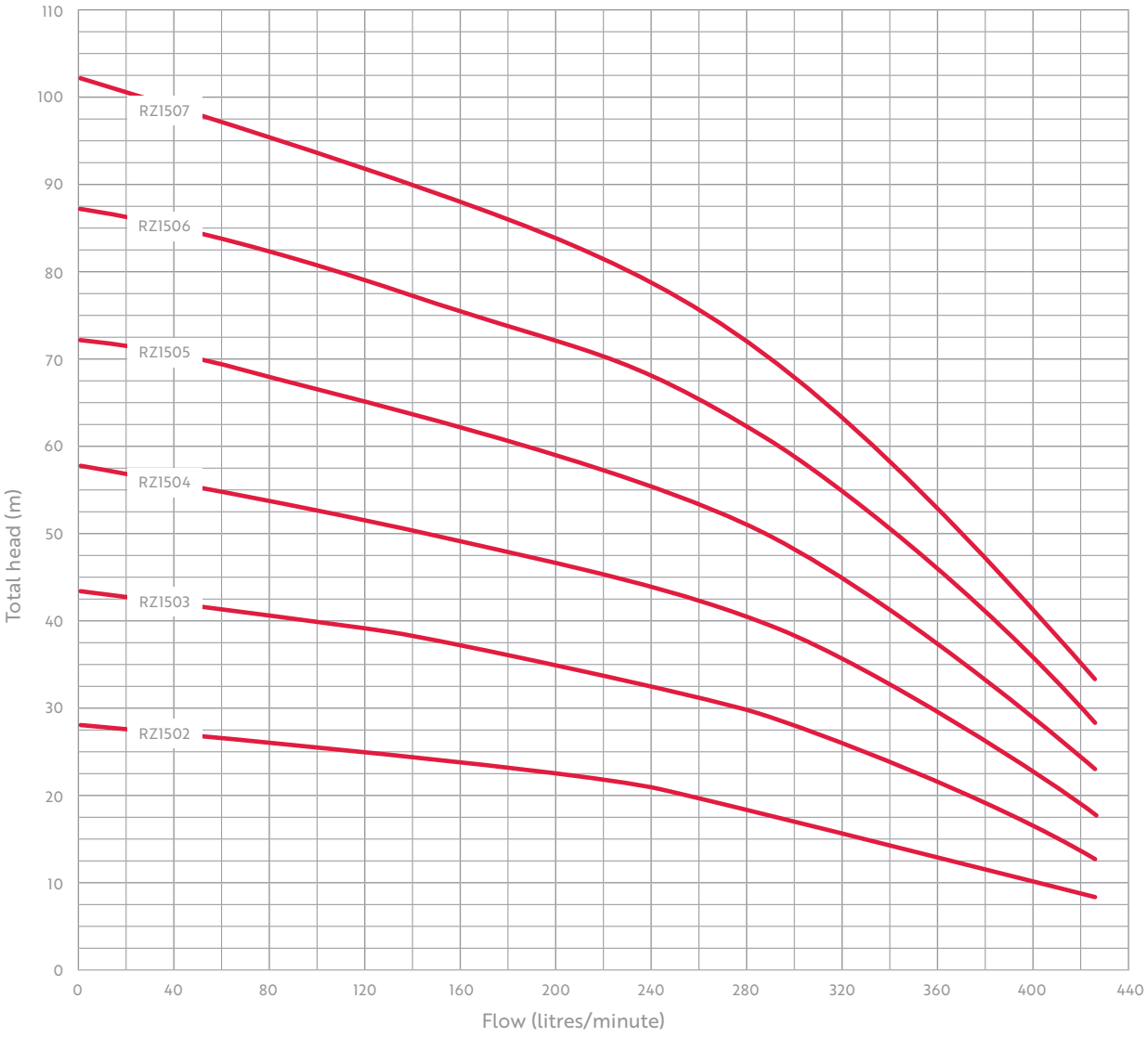


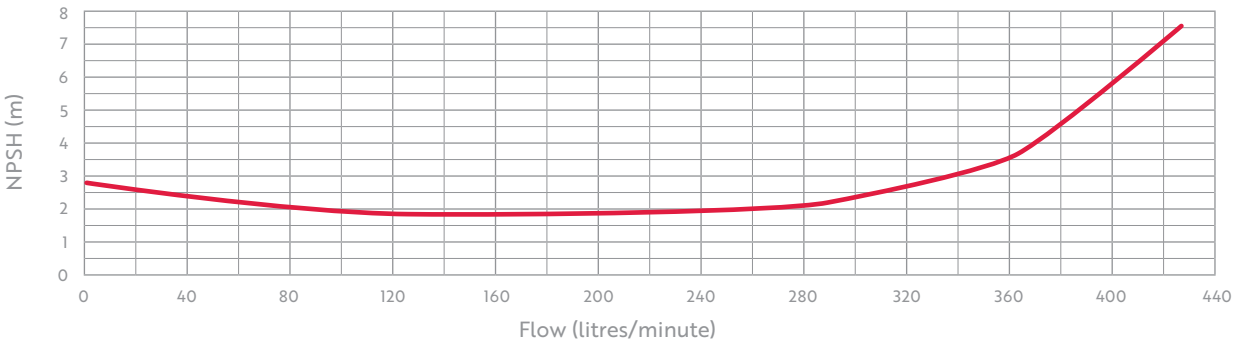


Pump performance curves continued

RZ15 Series

SINGLE PUMP CURVES

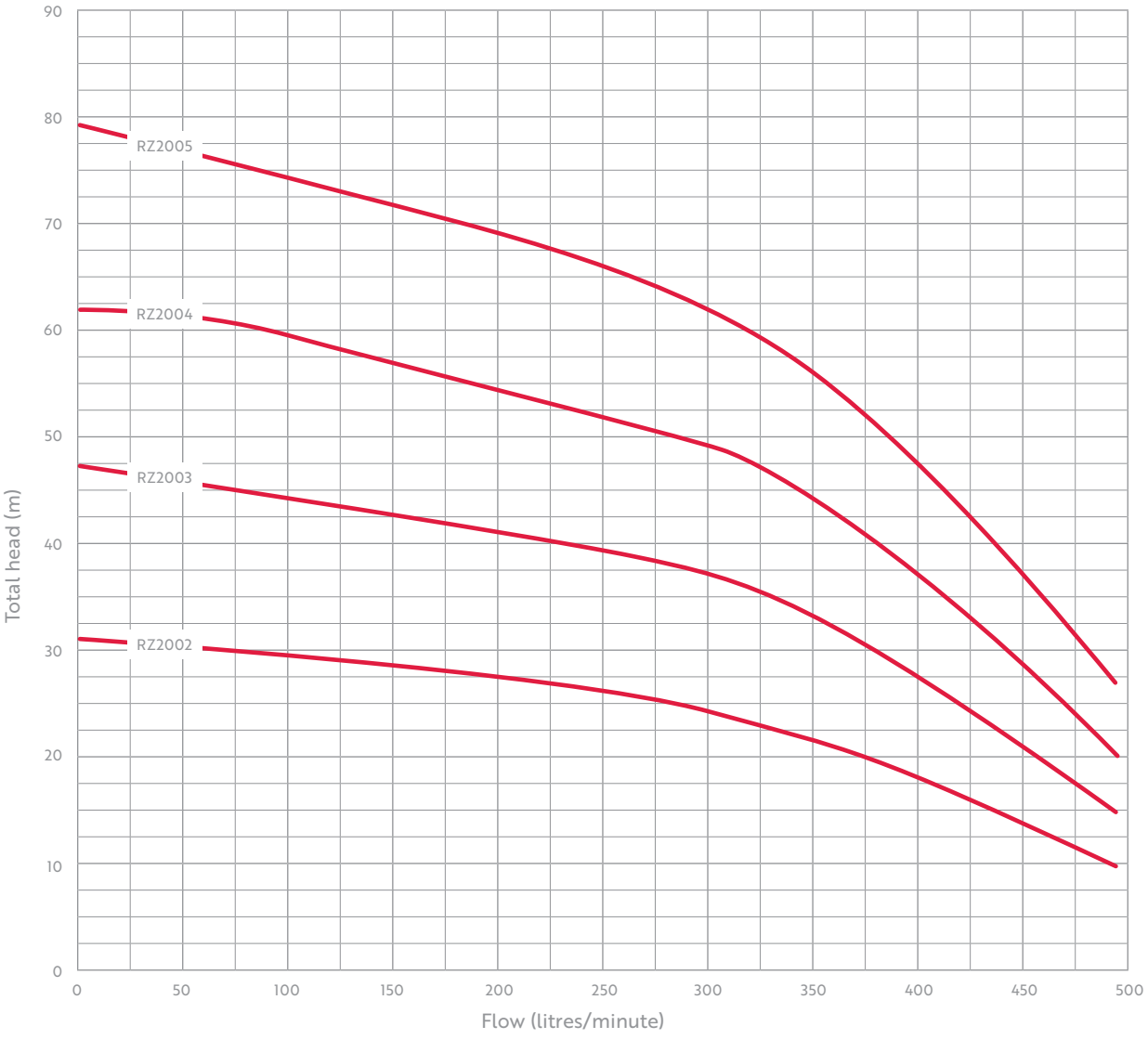


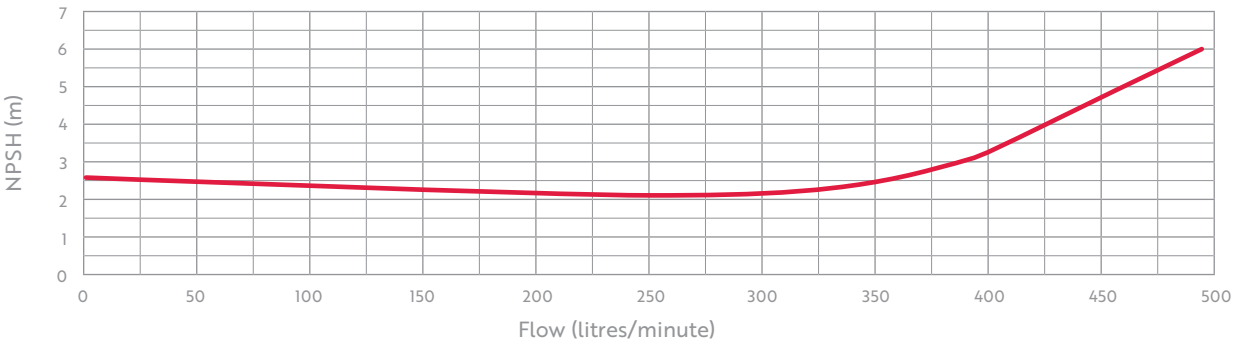


Pump performance curves continued

RZ20 Series

SINGLE PUMP CURVES





3. Control Panel Operation

Operation Manual

Electric Motor Driven Residential Pump

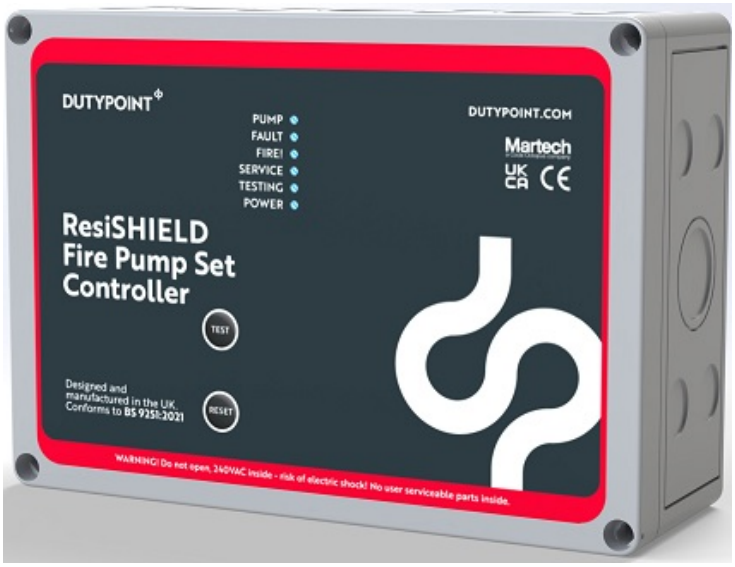
Controller BS9251: 2021

Dutypoint Martech WD2 version

Dutypoint Martech Fire Sprinkler Controller Installation Guide

This document provides essential information on how to install, configure and test the Dutypoint Martech The good news is the Dutypoint Martech is easy to install and requires minimum set up and configuration.

Key features:



Input connections for:

- Dual pressure switch (monitored)
- Flow switch (monitored)
- Water level

Output connections for:

- Pump
- Diverter valve
- Fire panel
- Fault monitor
- Low water alarm

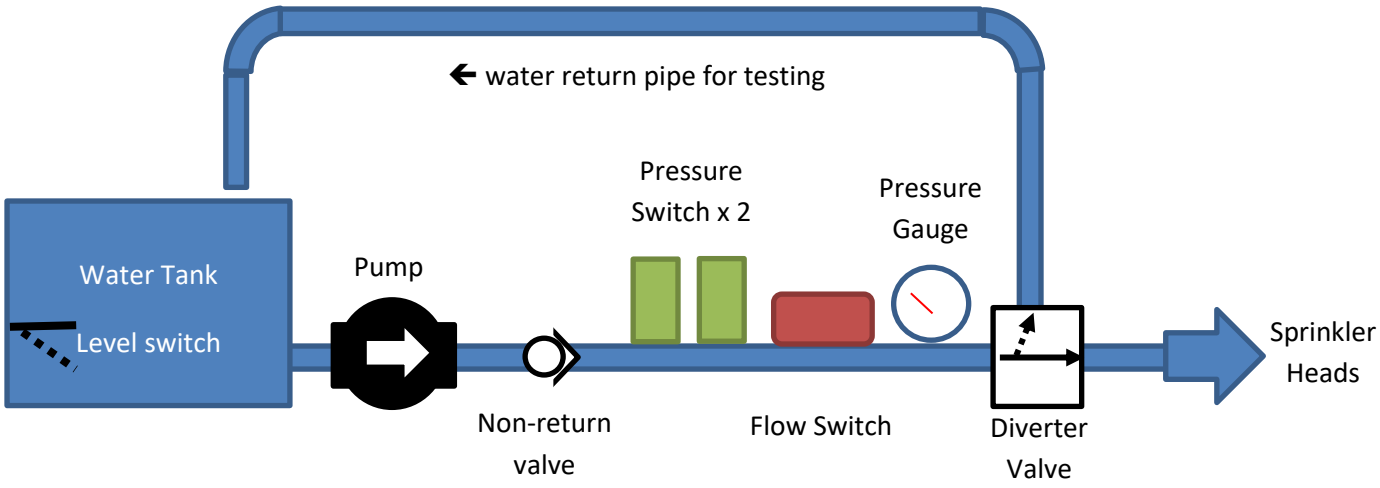
USB connection for:

- Uploading of advanced configuration files
- Software updates

Dutypoint Martech has been designed with failsafe features that help ensure that the pump will run when the pressure drops (in the event of a sprinkler head opening) even if the microprocessor or software fails.

WARNING – Dutypoint Martech is a safety critical device and MUST be installed by a qualified electrician/electrical engineer in accordance with relevant electrical installation regulations and relevant fire sprinkler regulations.
Failure to install and configure correctly may result in the fire sprinkler system failing to operate, resulting in loss of life or severe injury. Coda Octopus Martech Ltd. (Martech) accepts no responsibility for failure of any kind resulting from incorrect installation or from installation by unqualified installers.

SUGGESTED* SYSTEM CONFIGURATION



Important Note*
The above is illustrative ONLY and it is the responsibility of the installer to ensure compliance with all relevant and current standards relating to Fire Sprinkler systems, including but not limited to regulations for electrical installations, water supplies, plumbing and pipework.
Martech accepts no responsibility for non-compliance with the standards relating to the installation and choice of components.

Pressure Switches
Pressure switches are required to be closed at pressure, opening on low pressure, and must be set correctly. For optimum pressure switch settings, please refer to pump manufacturer's advice, and configure in accordance with the latest BS standard for Fire Sprinkler systems.

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Flow Switch
Flow switch is required to be closed at zero flow, opening when flow is detected.

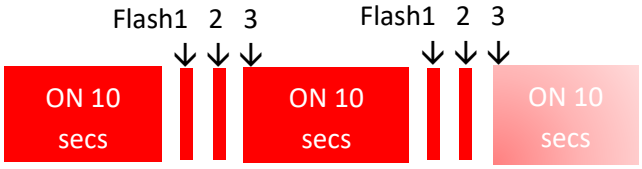
Pump
Dutypoint Martech is compatible with most commercially available single-phase pumps up to 3kW (13A at 240Vac), and is fused to 15A (T) as standard. Martech recommends Grundfos pumps.

Diverter Valve
Dutypoint Martech has a change-over relay for use with a diverter valve (max 5A at 240Vac), and is fused to 0.5A/500mA (T) as standard

Pumps with integral pressure switches and other advanced features should not be used unless these features are disabled. Use of these types of pumps may cause problems during use including false alarms or failure to operate in the event of fire.

OPTIONAL FEATURES – POWER LOSS ALARM
On boards where J35 is fitted (bottom RH corner), an optional rechargeable NimH battery (not supplied as standard) can be fitted to provide an audible alarm every 10 minutes in the event of a power failure. This battery is not used to maintain the main on-board clock, and will not run the pump in the event of a fire.
Battery type. RS 1769373 https://uk.rs-online.com/web/p/rechargeable-battery-packs/1769373

LED FUNCTIONS

LED	Function
PUMP (yellow)	ON = pump running
FAULT (red)	The LED stays on for 10 seconds then flashes according to the fault. At the last flash the LED stays on for 10 seconds before the sequence is repeated (see below example for 3 flashes). 2 flashes - Auto_Test_Failure 3 flashes - Low_Water 4 flashes - Pressure_Switch1_Failure 5 flashes - Pressure_Switch2_Failure 6 flashes - Excessive_Operation 7 flashes - Phase_Failure (not on WD2) 8 flashes - Maximum_Run_time 9 flashes - Monitored_Valve_Failure (not on WD2) 10 flashes - Possible Fire (no flow detected) 
FIRE! (red)	Flash 2Hz (0.5 secs) = Fire mode
SERVICE (blue)	Flash 1Hz (1 sec) = Service required
TESTING (orange)	Flash every 2 seconds = Dump Valve open ON = Remainder of auto test in progress OR ON = Wait period after operation (e.g., after jockey mode) Also ON when a USB stick is inserted and read/write is in progress (sounder sounds when read/write is complete)
POWER (green)	Mains power available

BUTTON FUNCTIONS

Function	Button Press	Action
Run pump	TEST button, short press (>1<9 secs)	Runs pump for 20 seconds (no dump valve operation) Logs time and date to USB stick
Run periodic Automatic test.	TEST button >10 secs	Run full test with dump valve etc. See periodic automatic test below
Reset periodic test time.	RESET button > 10 secs (beep) Followed immediately by TEST button >10 secs (beep)	Resets periodic test time (time of day when auto test will run). The frequency of the test (e.g., every 7 days) is configured in the USB settings file
Silence sounder	RESET button, short press (>1 <2 secs)	Silences sounder until next weekly test
Stop pump	RESET button >10 secs **when in fire mode**	Stops pump, but only after initial 30 secs operation. Will resume if pressure not restored or flow is present.
Clear faults Resets annual service	RESET button >25 secs Beeps after 10 secs, keep held for further 10secs or 15 seconds	Clears faults after 20 seconds Resets annual service after further 5 seconds (25s total)
Multi-Function	TEST + RESET >10 seconds	USB stick plugged in – clears all logs No USB stick – forces FIRE MODE

PERIODIC AUTOMATIC TEST SEQUENCE (ALSO KNOW AS WEEKLY SELF-TEST)

Periodic Automatic Test Refer to Button Functions above to reset the time of day to run the test	Runs periodic test according to time period in settings file. e.g., weekly. (default = 7 days)	1. Open dump valve, FLASH TESTING LED 2. Wait for pressure drop 3. Confirm both pressure sensors detect pressure drop (times out after defined autotest period ➔ fault) 4. Close dump valve as soon as pressures switches activated 5. Run pump (PUMP LED ON) 6. TESTING LED to ON 7. Confirm both pressure sensors reinstated/closed 8. Run on for X secs after pressure reinstated (jockey run period) 9. If any faults, set fault o/p 10. TESTING LED OFF

ELECTRICAL CONNECTIONS

CURRENT RATING AND FUSING:
F1 - PCB control electronics 500mA(T)

F3 - PUMP **max** 13A* at 230Vac
Factory fitted with fuse 15A*(T)

F4 - VALVE (DO5), max 5A at 230Vac
Factory fitted with fuse 500mA(T)

DO NOT EXCEED MAXIMUM CURRENT

**Max running current. Where peak start-up current exceeds 15A, causing fuse to b ow, fuse up to 20A(T) may be fitted.*

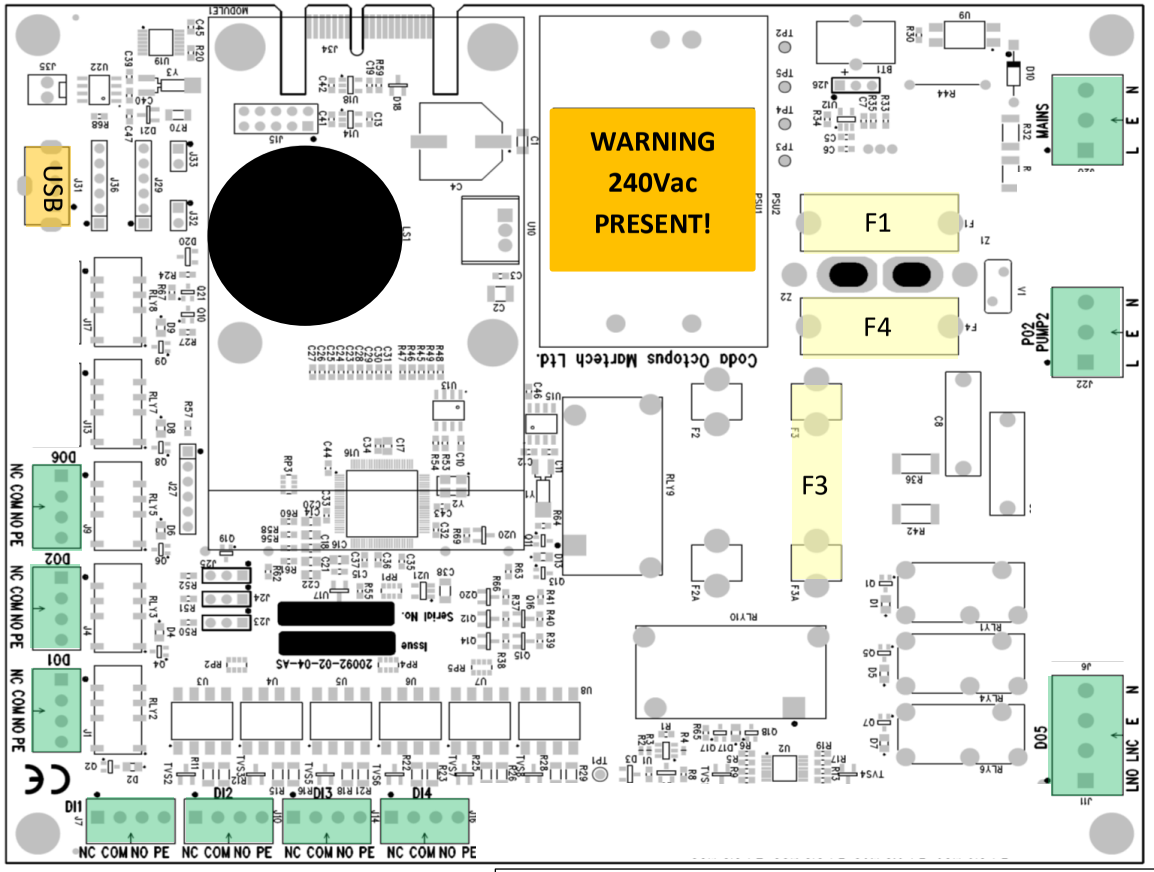
OUTPUTS, Volt free change-over contacts, max 5A ▼▼▼

LOW WATER ALARM
Com-NO contact closes when Low Water detected
Com-NC contact opens when Low Water detected

FAULT
Com-NC contact open when no fault closes when fault detected or power failure
Com-NO opens on fault or power failure

FIRE ALARM
Com-NO contact closes when in Fire Mode
Com-NC contact opens in Fire Mode

WARNING: DO NOT OVER-TIGHTEN TERMINALS!
Power terminals 0.5Nm max. Overtightening may result in damage to the terminal



MAINS INPUT
N
E
L, 240Vac, 15A

PUMP
N
E
L, 240Vac, 13A max

VALVE, 240Vac, 5A
Neutral
Earth
LNC = L, Valve Close
LNO = L, Valve Open

INPUTS, 12Vdc on COM terminal ▶▶▶

WATER LEVEL
Com-NC contact opens on low water

FLOW SW, see note

PRESSURE SW2
As per P SW1

PRESSURE SW1
Com-NC contact OPENS on low pressure, closed on High pressure

WARNING: DO NOT OVER-TIGHTEN TERMINALS!
Signal terminals 0.25Nm max. Overtightening may resul in damage to the terminal

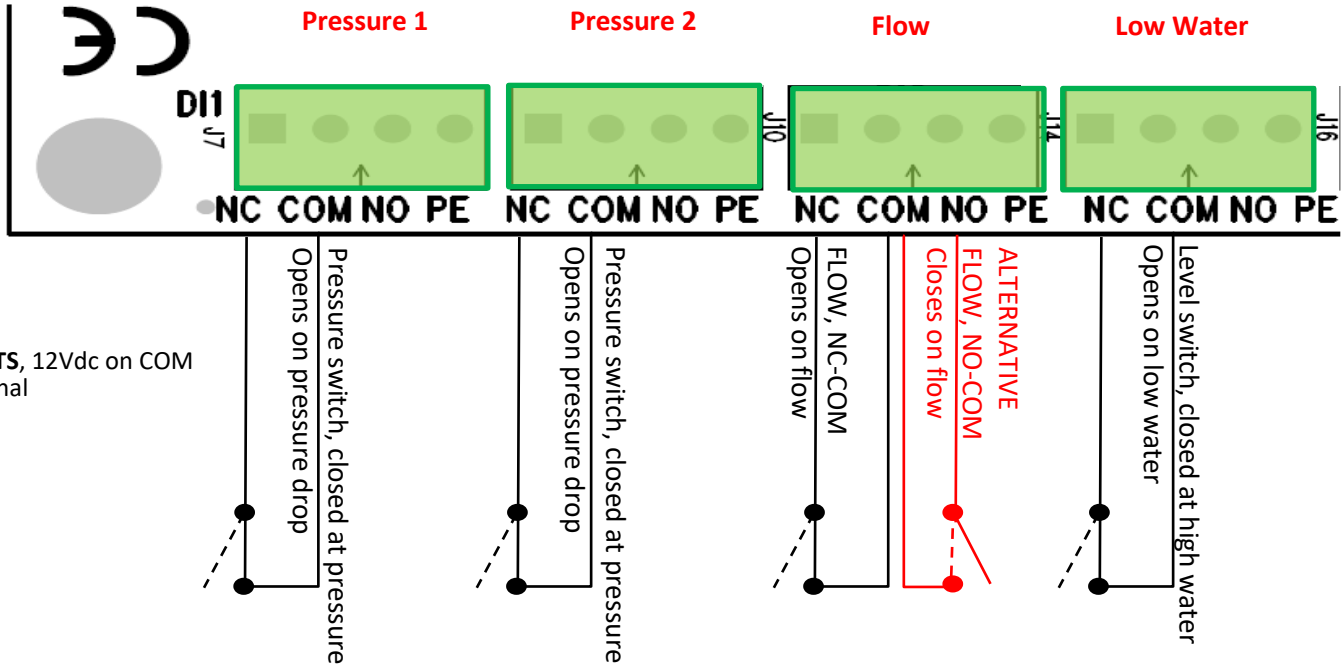
PCB viewed when lid folded downwards for installation. Some circuit boards (PCB) may have additional components or connectors fitted, which are not used.

FLOW SWITCH can be wired NC-COM where the flow switch opens on flow (closed when no flow is present).
Flow Switch Can also be wired NO-COM where the flow switch closes on flow. In this configuration, the COM-NC contacts must also be linked

contacts, max 5A ▼▼▼

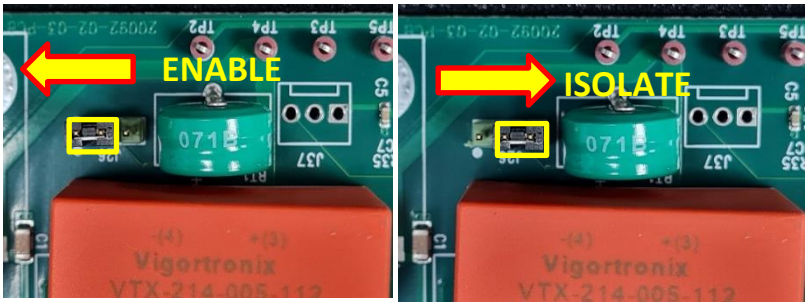
SENSOR WIRING DETAIL

NOTE for correct operation and compliance with BS9251-2021, dual pressure sensors and a flow switch must be fitted. ALL sensors are CLOSED during normal operation (high pressure, zero flow, water high) and open when these conditions change (e.g. in the event of a sprinkler opening). WD2 does however also support other flow switches which close on flow only, shown below in red. In this configuration, the NC-COM contacts MUST be linked.



If a low water sensor is not required the input MUST be linked across to prevent alarms.

If the alternative flow connection (COM-NC) is used, COM-NO MUST be linked across



BACK-UP BATTERY ENABLING

Battery Link (J26) has been fitted as shown, to isolate the battery and prevent the battery running down when in storage.

Before installing, move battery link (J26) as shown to the 2 pins furthest from the battery.

This is essential to ensure that the clock is maintained when no power is applied.

The battery is rechargeable and requires the unit to be power on for >24hours to achieve a full charge.

The battery ONLY maintains the clock and does not allow operation.

SETTINGS AND CONFIGURATION

Dutypoint Martech is factory-configured with standard settings that should be suitable for most installations.

Where required, these settings can be changed. See below for instructions on downloading advanced settings from a USB memory stick.

Settings file can also be configured and downloaded using our ON-LINE TOOL at www.firesprinklerwatchdog.com, or using the QR code

Using a USB stick to configure settings

Settings can be edited on any PC/Laptop and uploaded to the Dutypoint Martech from a USB memory stick.

ALWAYS USE A CLEAN/EMPTY USB STICK.

The USB connector is internal as shown on the electrical connection diagram. The settings text file is named **settings.txt** and can be edited in Windows Notepad. The file must be a **plain text** file format. The text file must be saved to a memory stick in the root/top level (not in a sub-folder). When a Settings file is detected on the USB stick, all LEDS flash to indicate new settings being uploaded. After uploading, the system will beep and the LEDS will stop flashing. The settings text file on the USB stick is also renamed to avoid inadvertent re-use. **ALWAYS WAIT FOR SOUNDER BEFORE REMOVING USB STICK**

The below is an example of the recommended default settings text file (settings.txt) that is pre-installed.

```
Current Time:-11:30; enter the time here, WD2 will update to this when USB inserted
Current Date:-16/02/2023; enter date here, WD2 will update to this when USB inserted
Service Reminder:-ON; ON or OFF, sets whether service reminder is active
Service Interval:-12; 1-12 Months, period for service reminder
Low Water Delay:-10; 0 to 60 Seconds, delay for low water detection
Maximum Run:-OFF; DISABLED ON WD2
Maximum Run Time:-480; 1 to 480 Minutes DISABLED ON WD2
Excessive Operation Limit:-7; 0 to 30 Starts/week, jockey runs allowed, (0=off)
Jockey Pump Duration:-20; 5 to 120 Seconds, length of time pump runs for Jockey run
Flow Switch Delay:-3; 0 to 25 Seconds, trigger delay for flow switch
Pressure Switch Delay:-3; 0 to 10 Seconds, trigger delay for Pressure switch
Fire Mode Wait:-5; 0 to 30 Secs. Window for Possible Fire Mode trigger (0 = no fire mode trigger)
Device Name:-INSTALLATION INFO  (no ;)insert installation info here such as location
INSTALLATION INFO (no ;)insert installation info here such as location
INSTALLATION INFO; three lines each less than 20 characters inc spaces (; after 3rd line ONLY)
Installer Name:-INSTALLER NAME (no ;) insert YOUR company name/details
INSTALLER NAME (no ;)insert YOUR company name/details
INSTALLER NAME; three lines each less than 20 characters (; after 3rd line ONLY)
Installer Contact details:-CONTACT DETAILS (no ;)insert YOUR company contact info
CONTACT DETAILS (no ;)insert YOUR company contact info
CONTACT DETAILS; three lines each less than 20 characters (; after 3rd line ONLY)
Auto test Duration:-300;60 to 600, Seconds, max time for autotest, timeout = fault
Auto test Open:-15; 1 to 90 Seconds, auto test dump valve open duration
Auto test Period:-7; 1 to 30 Days, frequency of autotest
Cooling line Duration:-3; 0 to 60 Seconds (WD2, firmware Rev2.8 onward)
Cooling line Cycles:-30; 1 to 60 times/hour (WD2, firmware Rev2.8 onward)
Model Variant:-0;  0=watchdog LOCKED on WD2
Timer override:-0;  0-60 minutes, set to zero normal for operation
```

Text in green is for information only and not part of the file

IMPORTANT! After uploading new settings files, **always POWER CYCLE the WD2**, wait 1 min **THEN** remove & re-insert the USB stick to download the new settings file and check that they have correctly uploaded.

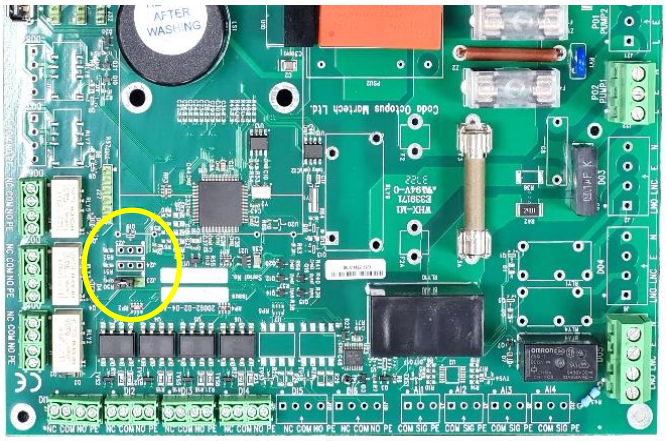
ALWAYS WAIT FOR SOUNDER BEFORE REMOVING USB STICK

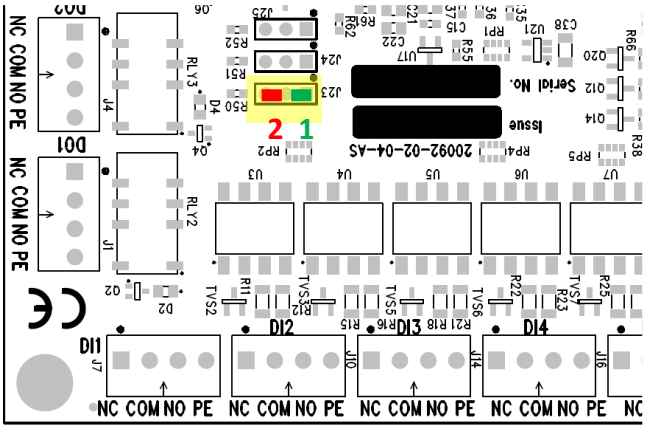
NOTE - IF IN DOUBT, ALWAYS DOWNLOAD THE STANDARD SETTINGS FILE FROM www.firesprinklerwatchdog.com.

All text after the semi-colon (;) are comments only and are not used by the system.

Time and date sets an *approximate* time/date on the Dutypoint Martech for time stamping of activity logs. The time entered will be taken as the correct time when the file is read by the Dutypoint Martech from the USB stick. Attempting to change features shown as disabled or locked will have no effect and will not be used.
A time & date only settings file can also be downloaded from www.firesprinklerwatchdog.com which allows changing of the time and date without affecting the other settings.

DIAGNOSTIC MODE
With the unit powered OFF, move link J23 in the position 2 (viewed with the front panel folded down) as shown, the system will power up into an engineering diagnostics mode. In this mode it **WILL NOT operate as a fire sprinkler controller,** but will illuminate LEDs only in response to certain inputs. will allow manual operation of the pump and valve. This is intended to assist the engineer to manually check inputs during installation.

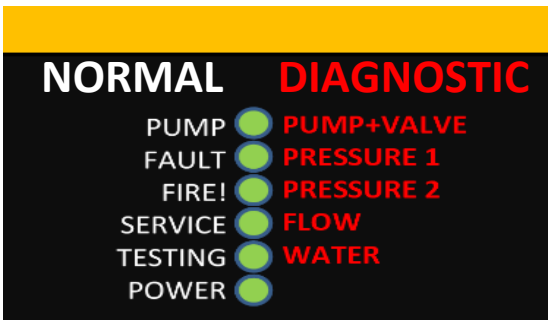




NOTE it is critical that J23 is reverted to the normal operating position (position 1) after diagnostics, to ensure correct Fire Sprinkler operation.

TEST MODE	Test Mode Function
TEST Button	Press and hold to run pump, release to stop pump
RESET Button	Press and hold to open valve, release to close valve - pressure will drop.
PUMP LED (yellow)	ON, Valve opening Flashing 1 per second, Pump running Flashing 5 per second, Valve opening and pump running
FAULT LED (red)	Pressure switch 1 (D11), on when active/low pressure/NC-COM open circuit
FIRE! LED (red)	Pressure switch 2 (D12), on when active/ low pressure/NC-COM open circuit
SERVICE LED (blue)	Flow switch (D13) on when NC-COM open circuit, **OR** NO-COM is closed circuit
TESTING LED (orange)	Water level (D14), on when active/water low/NC-COM open circuit
POWER LED (green)	Mains power available

Test mode LED functions are shown in red:



INSTALLATION CHECK LIST

The following is a suggested checklist to help ensure that you have carried out key actions when installing the Dutypoint Martech.

NOTE - This check list is not exhaustive and it is the installers responsibility to ensure that the installation is working correctly and complies with all regulatory requirements.

	Description	Checked By	Date
1	Battery Link correctly fitted to ENABLE back up battery?		
2	Diagnostic Mode Link returned to POSITION 1?		
3	Settings file updated including correct time? (optional)		
4	Copy of updated configuration downloaded from WD2 and checked against expected settings? (Recommended to be retained for your records)		
5	Pressure in system manually dropped and correct operation confirmed?		
6	Flow manually created and flow switch activated and correct operation confirmed?		
7	Low water alarm operation checked?		
8	Fault o/p operation checked?		
9	Faults/alarms created during installation have been cleared?		
10	Automatic Test time set?		
11	Automatic Test manually started and correct operation confirmed?		
12	Pressure reinstated after tests completed?		
13	USB stick removed?		
14	Front panel securely attached to the box?		
15	Repeat items 11 & 12 after refitting lid, confirm correct operation and pressure reinstated?		
16	Customer provided with installer details for future reference?		

INSTALLATION RECORD

Customer			
Location			
Installed by (Company)		Installation Engineer (name)	
Phone No.			
Email and Website			
System Pressure	Bar	Installation date	

4. Installation and Comissioning

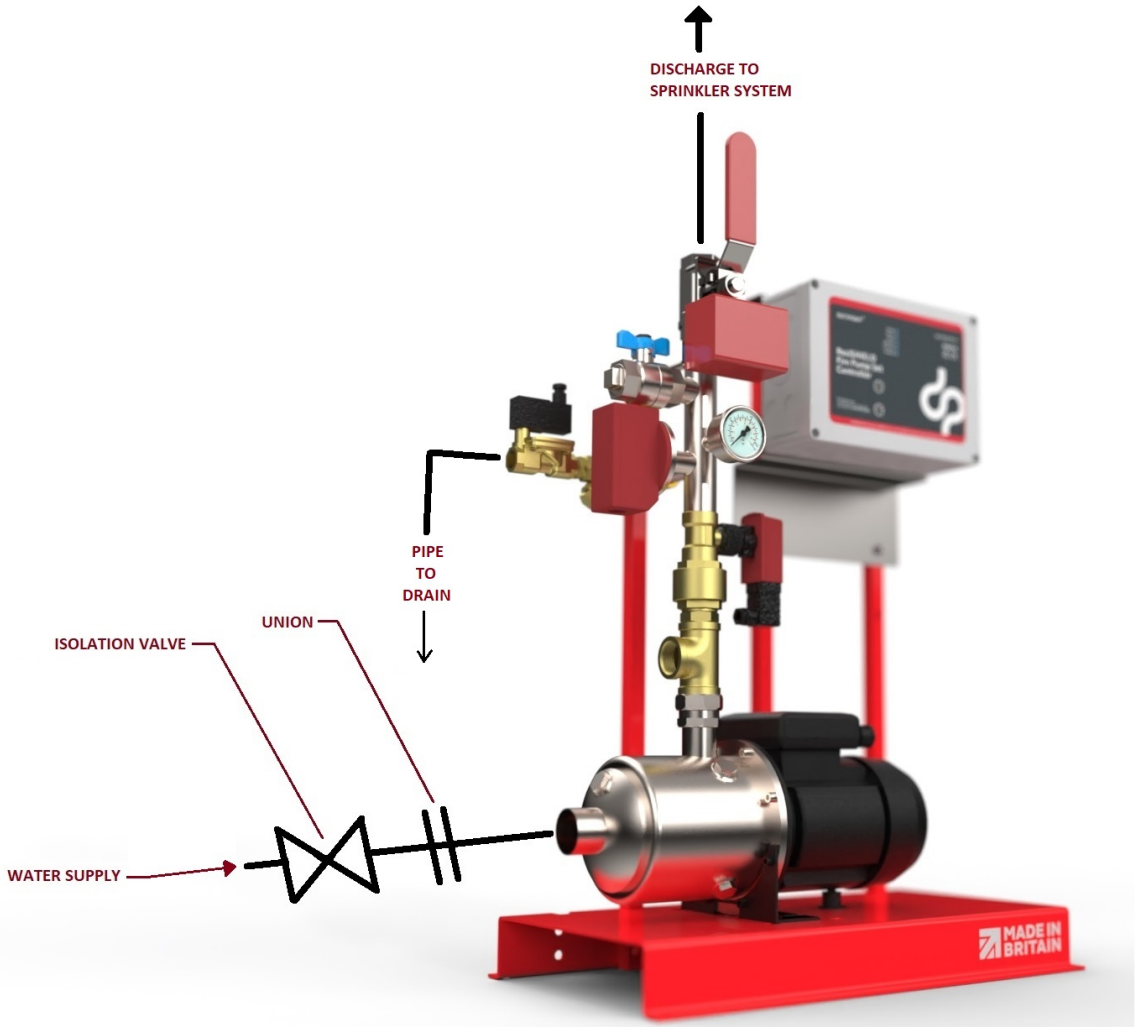
4.1 Installation and Commissioning Overview

Please give careful consideration to the following prior to commencing the installation:

a) The system should be positioned such that the controller screen can be easily seen.
b) Adequate clearance should be provided to enable removal of cover and access to all the components within.
c) Protection should be provided against frost and rain.
d) The suction and discharge pipework must be at least of equal size to that of the corresponding ResiSHIELD pipe connection sizes
e) All electrical connections should carried out by a qualified electrician.
f) All mechanical connections should be carried out by a qualified and authorised professional in accordance with BS9251 latest revision and relevant codes of practice.
g) The unit must not be switched on under any circumstances until the system has been filled with water and primed.

4.2 Mechanical Installation

Recommended pipework arrangement:



4.3 Electrical Installation

1) Please give careful consideration to the following instructions:

a) All electrical connections should carried out by a qualified electrician
b) The pump set should be supplied on a dedicated, MCB protected circuit. Please refer to page **12** for MCB type information according to the specific model.
c) The ResiSHIELD RZ is supplied with a 1.5m length of power supply cable pre-wired into the control panel. It is recommended that this is terminated into a nearby isolator switch to enable convenient isolation for future maintenance and repair.
d) Where a UPS or Generator supply is to be used, consideration must be made for the starting current of the pump.
e) For DOL panels (H500), the starting current is 6x the FLC
f) For Soft-Start panels (H520), the starting current is 3x the FLC
g) Please refer to page 12 or 13 for FLC rating information for your specific model.
h) The unit is fitted with pre-wired and labelled power and signal cables to prevent any need for the installer to open the control box. See below table for details

Cable ID	Core	Description
Power	Brown	Power Supply Live
	Blue	Power Supply Neutral
	Green/Yellow	Power Supply Earth
Signal	1	Fire - Common
	2	Fire - Normally Open
	3	Fire - Normally Closed
	4	Fault - Common
	5	Fault - Normally Open
	6	Fault - Normally Closed
	7	Low Water Output Signal - Common
	8	Low Water Output Signal – Normally Open
	9	Low Water Output Signal – Normally Closed
	10	Input from normally closed tank low level switch
	11	Input from normally closed tank low level switch
	12	Valve tamper alarm (contact 12 & 13 opens on alarm)
	13	Valve tamper alarm (contact 12 & 13 opens on alarm)
	14-18	Not used

4.6 Venting the Pump

It is important to bleed all air from the pump body before initial start up. This can be done by loosening the venting port at the top of the pump body, let the air out until water starts coming out, then re-tighten.

4.7 Final Checks before Commissioning

The skid plate is securely fixed to the floor using the fixing holes provided.

Suction pipework installation is complete and pressure tested.

Discharge pipework installation including full sprinkler system is complete and pressure tested.

Drain pipework from the auto test drain point is complete.

Electrical connection has been completed including installation of an isolator switch within arms reach of the ResiSHIELD.

The MCB used to supply the ResiSHIELD matches the recommended rating on page 12 & 13.

4.8 Commissioning Procedure

ResiSHIELD RZ pump set pressure switches are factory configured to the project requirements according to the information provided by the client. However, the pressure set point may need fine tuning once in situ. It is the sprinkler contractors responsibility to double check and ensure that the ResiSHIELD is set to the correct pressure set point according to their as-built system requirements in accordance with BS9251:2021.

The pressure switch set point to which the unit has been set to in the factory is printed on the data label. If the set point needs to be adjusted, this must only be carried out by an authorised, competent, qualified person, and the new set point must be labelled below the main data label.

1. Ensure that all points in the previous section 4.7 have been checked.
2. Close the isolation valve on the discharge of the system. Open the isolation valve on the suction side of the system. Check the pump is fully primed by loosening the priming screw on the pump until water comes out, then re-tighten.
3. Open the discharge isolation valve and fill / prime the whole system as necessary. Check and rectify any leaks.
4. Turn the power supply on. If the system pressure is below set point, the pump will run for a short period to restore pressure.
5. Tune the pressure switch set point against the pressure gauge according to the system requirements.
6. Check automatic test functionality by pressing and holding the 'test' button for >10s. This will run the weekly test procedure and raise a fault message if there are any issues with the pressure switches or pump.
7. Test fire mode by creating flow through the manual flow test port. Fully open the test port valve to create significant flow through the system. After 30 seconds, close the valve again. The pump should continue to run even after pressure is restored, until manually stopped by pressing the 'reset' button for >10s.
8. If the fire signal from the ResiSHIELD is being used, check that the fire signal was received during the flow test.

5. Operation and Maintenance

5.1 User Operation

- The ResiSHIELD is designed to operate automatically and therefore requires minimal user input.
- Routine visual check of the controller status is required. Refer to page 22 for information regarding fault indication.
- Following a fire event where the sprinkler system has activated and confirmation that the fire is out, the ResiSHIELD unit can be stopped if the pressure is restored to the set point by pressing and holding the reset button for >10 seconds.

5.2 User Inspection

The ResiSHIELD should be inspected at regular intervals of not more than 3 months to ensure correct operation of the unit between service visits. This inspection should include the following:

1. Check for any faults indicated on the controller.
2. Check the system pressure on the gauge is at or above the pressure set point of the system.
3. Check the general pipework and fittings for any signs of leaks, corrosion or damage.

5.3 Maintenance & Servicing

1. There are no user servicable parts in the ResiSHIELD unit.
2. Servicing of the complete fire sprinkler system including the ResiSHIELD should be carried out by suitably qualified personnel at least annually as reccomended by BS9251:2021.
3. The record of any service visits should be added to the history log at the back of this manual.
4. Should maintenance be required on mechanical components with the ResiSHIELD system, ensure the ResiSHIELD is fully isolated electrically and hydrualically before commencing. Note that the building will be without fire protection that the ResiSHIELD provides during this period, therefore the building owner and residents should be informed accordingly, and alternative measures put in place if necessary.

5.4 Spare Parts

WARNING

Use of any non-genuine spare parts may cause damage to equipment, damage to property and voiding of warranty.

- Use geniune, Dutypoint-approved spare parts only
- If in doubt, contact dutypoint Service on 01452 300590

6. Troubleshooting

Symptom	Possible Cause	Suggested Action
Controller will not turn on	No power to panel	Check power supply
	Internal wiring loom connectors are not fully engaged between PCB and screen	Check the wiring connectors are properly connected to the sockets on PCB and screen
Pump runs but there is no flow	pump is not fully primed	Turn the power off, loosen priming screw from top pump volute and release air
Pump produces correct pressure but does not turn off	System leak / open test valve	Check the system is fully sealed
	Pressure set point too high	Check the both pressure switch set points against system design
	Pressure switch fault	Replace pressure switch
Pump switches off before reaching required pressure	Pressure set point too low	Check the both pressure switch set points against system design
	Pressure switch fault	Replace pressure switch
Pump will not run	Low water level signal	Check if low level device is connected and if this has been activated.

7. Dutypoint Standard Warranty

Your Dutypoint Systems standard product warranty is valid for a period of 12 months from date of delivery. The full terms and conditions are on the reverse of this certificate.

If you need to contact us regarding your warranty or any issue regarding your Dutypoint product, please contact our service department:

- Tel: +44(0)14523 00 590
- Email: service@dutypoint.com

Once your standard product warranty has expired, you may wish to take out our infinity service contract for an extended amount of cover. For more information visit our website: www.dutypoint.com/infinity

7.1 Terms and Conditions

1) The Company warrants that on delivery, and for a period of 12 months from the date of delivery, or such longer period as agreed by the Company in writing, (Warranty Period), the Goods shall:
   a) conform in all material respects with their description as set out in the Agreement;
   b) be free from material defects in design, material and workmanship; and
   c) be of satisfactory quality (within the meaning of the Sale of Goods Act 1979).

2) Subject to Clause 3, if:
   a) the Customer gives notice in writing to the Company during the Warranty Period within a reasonable time of discovery that some or all of the Goods do not comply with the warranty set out in Clause 1; and
   b) the Company is given a reasonable opportunity to examine such Goods; and
   c) the Customer (if asked to do so by the Company) returns such Goods to the Company's place of business, the Company shall, at its option, repair or replace the defective Goods, or refund the price of the defective Goods in full.

3) The Company shall not be liable for the failure of the Goods to comply with the warranty set out in Clause 1 in any of the following events:
   a) the Customer makes any further use of such Goods after giving notice in accordance with Clause 2;
   b) the defect arises because the Customer failed to follow the Company's oral or written instructions as to the storage, commissioning, installation, use and maintenance of the Goods or (if there are none) good trade practice regarding the same;
   c) the defect arises as a result of the Company following any drawing, design or Specification supplied by the Customer;
   d) the Customer alters or repairs such Goods without the written consent of the Company;
   e) the defect arises as a result of fair wear and tear, wilful damage, negligence, or abnormal storage or working conditions; or
   f) the defect arises as a result of the Customer’s negligence or the Customer's breach of the Agreement.

4) Clause is the Customer’s sole remedy in respect of the matters described therein.
5) The terms implied by sections 13 to 15 of the Sale of Goods Act 1979 are, to the fullest extent permitted by law, excluded from the Agreement.
6) The terms and conditions of the Agreement apply to any repaired or replacement Goods supplied by the Company.

8. Declaration of Conformity

UKCA & CE

We: Dutypoint Limited

Of: Quedgeley West Business Park, Gloucester, Gloucestershire, United Kingdom

in accordance with the following directives:

- 2006/42/EC : Machinery Directive
- S.I. 2008:1597 The Supply of Machinery (Safety) Regulations 2008

- 2014/30/EU : Electromagnetic Compatibility Directive
- S.I. 2016:1091 Electromagnetic Compatibility Regulations 2016

- 2014/35/EU : Low Voltage Directive.
- S.I. 2016:1101 Electromagnetic Compatibility Regulations 2016

Hereby declare that the equipment:

Product Range	ResiSHIELD RZ

Is in conformity with the applicable requirements of the following documents:

- EN 809:1998+A1:2009: Pumps and pump units for liquids - Common safety requirements
- EN 60204-1:2018: Safety of machinery - Electrical equipment of machines - Part 1: General requirements
- EN ISO 12100:2010: Safety of machinery - General principles for design
- EN 61000-6-2:2019: Electromagnetic compatibility (EMC) — Part 6-2: Generic standards
- EN 61000-6-4:2019: Electromagnetic compatibility (EMC) — Part 6-4: Generic standards
- BS9251:2021 : Fire sprinkler systems for domestic and residential occupancies - code of practice

I hereby declare that the equipment described above has been designed to comply with the relevant sections of the above referenced specifications. The unit complies with all applicable essential requirements of the directives.

Nigel Freeman, Director

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DUTYPOINT SETTING THE BAR

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