

3P RainForce TH/TS Series

For Rainwater Systems With Break Tank

- **Automatic Rainwater and Mains Water Control**
- **Adjustable Pressure**
- **Intuitive Menu System**
- **Advanced Fault Tracking**
- **Works with almost all pumps**
- **Designed, Built, Programmed and Assembled in the UK**



RainForce Control Unit

Overview

The 3P RainForce TH/TS series commercial rainwater controller performs all the functions you would expect of a commercial system such as adjustable pressure, duty standby/assist and BMS output. Pressure control is achieved by modulation of the pumps which are run as required to maintain pressure within a specified range, avoiding the loss of efficiency associated with variable speed systems when running at low demand.

Suitable for wall mounting or for integration in skid or cabinet built systems. The TH/TS Series control panel also functions as a direct replacement for control units in several European built rainwater harvesting units (call us for compatibility advice).

No water ever needs to go through the control panel, which can be situated near the pumps or remotely.

Any electric pumps, solenoids, motorised valves, etc can be used. Single or 3 Phase¹, RainForce does not need to 'know' the pumps it uses. Optional hardware (contactors) allows pumps of any power up to the limit of your electrical supply. Pumps can be replaced with other makes and models at any time and don't need to be matched. Downtime due to reprogramming or lead times for a specific pump are eliminated.

4 Fixed speed versions of the TH/TS series are available

500TS - Suction from rainwater tank with tank level sensing by float switch.

A break tank contains mains water only and switch over between mains and rainwater is performed by motorised valves. A single or twin pump set after the break tank tank supplies water under pressure to the point of use.

500TH - Hybrid type system with tank level sensing by float switch. A break tank is served by both mains water from a solenoid and rainwater via a submerged pump. The break tank contains mains water, rainwater, or both depending on availability and demand. A single or twin pump set after the break tank tank supplies water under pressure to the point of use.

600TS - Suction from rainwater tank with precise tank level sensing by pressure sensor.

A break tank contains mains water only and switch over between mains and rainwater is performed by motorised valves. A single or twin pump set after the break tank tank supplies water under pressure to the point of use.

600TH - Hybrid type system with precise tank level sensing by pressure sensor. A break tank is served by both mains water from a solenoid and rainwater via a submerged pump. The break tank

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contains mains water, rainwater, or both depending on availability and demand. A single or twin pump set after the break tank tank supplies water under pressure to the point of use.

600TS and 600TH allow adjustment of minimum tank level from the control panel without the need to enter the rainwater tank.

Variable speed versions THV and TSV

These versions perform all the functions of the TH/TS controllers, controlling the in-tank pumps and break tank, but without directly controlling the pump set which is controlled separately by inverters. The fault output of the inverters is monitored.

All RainForce systems have intuitive menu driven settings. There are no hidden menus, and almost everything is adjustable, including pump cut-in and cut-out pressures, overpressure alarm, and pump failure pressure. Safe default settings (3 bar) will operate straight away in single pump mode with auto tank level calibration.²

Advanced Fault Tracking stores fault codes in memory until you choose to erase them, allowing easy identification of intermittent and historical faults. Fault history is maintained in the event of power loss.



Rainforce controllers are designed to be robust and easily maintained, with individually fused outputs, oversized power supply to electronics, removable MCU chip (software) for easy upgrades. Pluggable connectors allow pumps to be 'hot-swapped' without switching off the controller.

Designed, programmed and built in the UK. With UK based technical support and spare parts supply from UK stocks. Full repair/recon service to component level.

¹ 3 Phase via optional connection kit.

² 600TS/TH only

Like all variable pressure systems, a pressure vessel is required for correct operation.

Features

- Adjustable pressure control (10bar max)
- *Duty Standby/Duty Assist with alternation*
- Modular 'hot swap' of pumps and solenoids
- Automatic Tank Level Calibration
- Multiple pump model support at 230Vac 50Hz or any supply voltage/phase via contactors
- BMS Switched output
- Optional BMS serial output
- Advanced Fault Tracking
- Fault Warning LED
- Auto hunt for redundant spare pump during pump failure in single pump mode
- Swappable MCU chip (software)
- Solenoid valve isolation on fault - reducing fire risk from overheat.
- System Overpressure Alarm - protects pipework and attached appliances (UV system, etc) from overpressure due to faulty installation or incorrect pressure setting.

- Overvoltage protection
- Brownout protection
- Watchdog timer
- Fused Outputs

Adjustable Settings

- Pump cut-in/cut-out pressure (for each pump)
- System Overpressure Alarm
- Pump failure pressure
- Pump Mode (Pump1, Pump2, Twin pump assist/standby)
- Minimum Rainwater Level (dry run prevention)
- Fault code display
- Fault code erase
- Input test diagnostic screen
- Output test diagnostic screen
- Manual Stop - with BMS activation
- Restore Factory Default Settings

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OEM Solutions

3P Rainforce is supplied either as a panel only, or can be offered as a kit, comprising of the panel, pumps, cables, solenoid, pressure vessel, hose kits, etc. It is offered only to professional installers and OEM partners who will commission the system before use to ensure the installation has been completed correctly and all accessories are functional.

We work with our customers to provide specific product bundles, with panel and software branded to your requirements.

We provide full training, design and technical support, and will customise the product and accessories to your requirements, and full UK based support and spare parts availability.

Benefits

Designed for UK type rainwater systems - no requirement for additional booster pumps or other modifications commonly needed with continental systems.

Excellent configurability whilst retaining an intuitive menu driven user interface.

Made in Britain. Designed, built and programmed entirely in the UK by 3P Technik.

Full UK support , with customisations to hardware and software available with very short lead times.

Modular design allows extremely rapid swap-out of parts. Including hot-swap of pumps, solenoid and sensors (no power-off). Also no need to match replacement pumps or solenoids.

Very low lead times. All spare parts stocked by us in the UK for immediate dispatch. We don't follow the 'buy to order' business model of continental manufacturers whose lead times are often unsuitable for UK clients.

We can supply not only the control equipment, but also pumps, filtration and all tank fittings.

Accessories

RC3P Series 3 Phase 230v/400v IP65 Rated Connection Kits with contactors, thermal overload protection and optional over/under voltage detection, phase loss detection,

IP65 Rated Isolation Switches

IP68 Rated Cable joints

Vented sensor cables (multiple types)

IP68 Rated Vented cable joints

IP68 rated in-line plugs/sockets

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Technical Specifications

Control Unit

Width	240mm
Height	190mm
Depth	110mm
Material	ABS
Weight (control panel without cables)	1190g
Display	LCD 4 x 20 Monochrome
Backlight	Green
Keypad	Membrane
BMS	Volt-free contact
BMS (optional)	RS-232 Serial
Supply Voltage	230V _{AC}
Power Consumption	Max 7W
Operating Temp Range	0 - 40°C
Protection Class	Up to IP65

Rainwater Tank Pressure Sensor

Measurement Range	0 - 0.6 bar
Length	20m
Cable Type	0.5mm 2 core flex with external vent tube Or Multicore shielded signal cable with internal or external vent tube
Input	8 - 30 V _{DC}
Output	4 - 20 mA
Protection Class	IP68

Switched Outputs

Supply Voltage	240V _{AC}
Current	10A

Float Switch

Type	Microswitch
Length	20m
Cable Type	1mm 3core flex
Medium	Water
Protection Class	IP68

Line Pressure Sensor

Measurement Range	0 - 10 bar
Input	8 - 30 V _{DC}
Output	4 - 20 mA
Protection Class	IP65

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