

# 3P RainForce T Series

## Electronic Rainwater Control Systems

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



*RainForce Control Unit*

## Overview

The 3P RainForce T 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, whilst remaining extremely compact. 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.

2 Modes of operation are available, Auto Mode tops adds mains water to the rainwater tank as necessary. Rain Mode uses only available rainwater without mains water top-up.

Unlike suction based systems which typically need adaptation for UK use in above ground plant rooms (an extra in tank pump) Rainforce T Series can operate with pumps in any location. Submersible pumps let you take advantage of maximum pumping efficiency whilst reducing the overall component count of the system. Pumps can also be installed above ground, with an optional booster pump if required to meet specification.

No water ever needs to go through the control panel. Operation of the pumps and solenoid can be remote from the panel or not.

Any electric pumps, solenoids, motorised valves, etc can be used. Single or 3 Phase<sup>1</sup>, 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.

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### 2 Versions of the T series are available

200T - Tank level sensing by float switch

A standard float switch operated at low voltage (+15Vdc) for enhanced durability detects water in the rainwater tank, with top-up and pump isolation controlled by float switch height. (Usually needs someone to enter the tank to install)

300T - Tank level sensing by pressure transmitter

A precise pressure transmitter is used to determine the exact level of stored rainwater. No other float switches or probes are needed for top-up activation or pump protection, which are all software controlled. This provides the user with the added flexibility of being able to select pump shut-off and top-up levels from the panel, with no need to access the tank.

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, pump failure pressure, top up level, overfill duration, time-out alarm, etc. Safe default settings (3 bar)

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will operate straight away in single pump mode with auto tank level calibration.<sup>2</sup>

Rainforce also features Advanced Fault Tracking. Fault codes are stored in memory until you choose to erase them, allowing easy identification of intermittent and historical faults.

Clever design of the circuit board makes Rainforce the most robust unit on the market today, with overvoltage and brownout protection, immediate recovery from power failures with no loss of setting and auto reboot, individually fused outputs, oversized power supply to electronics, removable MCU chip (software) for easy upgrades, automatic failover of pumps, and automatic search for spare pumps even if not configured for twin pump use. Modular connector design and tolerant software allows pumps to be 'hot-swapped' without switching off the controller or remaining pump.

Designed, programmed, built and assembled in the UK. With full UK based technical support, rapid spares



availability, and spare parts supply from UK stocks. Full repair/recon service to component level.

<sup>1</sup> 3 Phase via optional connection kit.  
<sup>2</sup> 300T 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/overloads*
- *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)*
- *Top-up level*
- *Top-up overfill delay*
- *Top-up timeout alarm*
- *Pump restart delay*
- *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 <sub>AC</sub>
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 <sub>DC</sub>
Output	4 - 20 mA
Protection Class	IP68

#### Switched Outputs

Supply Voltage	240V <sub>AC</sub>
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 <sub>DC</sub>
Output	4 - 20 mA
Protection Class	IP65

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