

3P RainForce H Series

Indirect Rainwater Control Systems

- **Automatic Control of Rainwater and Mains water**
- **Smart Header tank control with Adaptive Software for maximum efficiency**
- **Intuitive Menu System**
- **Advanced Fault Tracking**
- **Works with almost all pumps and header tanks**
- **Designed, Built, Programmed and Assembled in the UK**

Overview

The 3P RainForce H series commercial rainwater controller performs all the functions you would expect of a commercial indirect system such as multiple pump control, duty standby, BMS output, whilst remaining extremely compact. Header tank level control is achieved by software with the emphasis on providing maximum availability of water without the efficiency losses associated with ball cocks, or the reliability problems of a float switch based system.

Unlike many other systems which are often just direct pressure systems feeding a ball cock, RainForce H Series are level controlled and designed specifically for commercial header tanks. Filling the header tank without flow restriction ensures maximum efficiency, quickest tank fill times and reduced run-time and stress on components.

Smart software employs a maximum availability strategy, adapting to the supply conditions and increasing the level of mains water top-up when rainwater is unavailable. In addition, Top-up Assist mode activates all pumps (if possible) and mains water if the water in the header tank falls to a critical level.



RainForce Control Unit

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

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.

3 Versions are available

200H - 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)

300H - Tank level sensing by pressure transmitter

A precise pressure transmitter is used to determine the exact level of stored rainwater, and displaying an automatically calibrated reading in % to the user. No other float switches or probes are needed for pump protection. This provides the user with the added flexibility of being able to select the minimum water level from the panel, with no need to access the tank.

350H - Twin rainwater tank level sensing by

3P RainForce H Series

Indirect Rainwater Control Systems

pressure transmitter.

Operates a single header tank from 2 separate rainwater tanks each with single or dual pumps (4 in total). Pressure transmitters determine levels in both tanks and demand is balanced to maintain proportionally equal levels. By this method both rainwater tanks maintain equal relative capacity for rainfall events, increasing overall yield. Note that the RF350H version does not control mains water top-up, which must be controlled separately.

All RainForce systems have intuitive menu driven settings. There are no hidden menus, and almost everything is adjustable, including minimum level, operation mode, etc. Safe default settings will operate straight away in single pump mode with auto tank level calibration.²

Rainforce logs the last 10 faults, retained through power outages. Fault codes are stored in n-n volatile memory until you choose to erase them, allowing easy identification of intermittent and historical faults. Sensor faults will halt all tank filling, while any potential overflow will also drain the header tank, if a suitable drain valve is fitted, until the fault resolves.

Clever design of the circuit board makes Rainforce the most robust unit of 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.

¹ 3 Phase via optional connection kit.

² 300H only

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

Features

- 3 Modes of operation, Automatic, Mains Only, and Rainwater Only
- 2 Top-up strategies, Eco and 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 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

- Overvoltage and brownout protection
- Watchdog timer
- Individually fused outputs with high rupture current fuses

Adjustable Settings

- Operation Mode, Auto/Mains/Rain
- Top-up Mode, Eco/Max
- Pump Mode (Pump1, Pump2, Twin Pumps - Simultaneous, Twin Pumps - Duty Standby/Assist with alternation)
- Minimum Rainwater Level (dry run prevention)
- Fault code display/erase
- Input test diagnostic screen
- Output test diagnostic screen
- Manual Stop - with BMS activation
- Restore Factory Default Settings

3P RainForce H Series

Indirect Rainwater Control Systems

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, ball cocks, or other modifications commonly needed with imported 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, Cable Joints, and inline Plugs

Vented sensor cables (multiple types)

3P RainForce H Series

Indirect Rainwater Control Systems

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	220-240V _{AC}
Power Consumption	Max 7W
Operating Temp Range	0 - 40°C
Protection Class	Up to IP65

Float Switch

Type	Microswitch
Length	20m
Voltage	12V _{dc}
Cable Type	1mm 3core flex
Medium	Water
Protection Class	IP68

Switched Outputs

Voltage	Supply voltage
Current	10A

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
Voltage	15v
Input	8 - 30 V _{DC}
Output	4 - 20 mA
Protection Class	IP68

Header Tank Sensors

Type	Reed Switch Mini Float Switch ¹
Voltage	12V _{dc}
Medium	Clean water
Protection Class	IP68

¹ Other sensors types also available

3P Technik UK Limited

Celtic House, Unit 3 Parc Teifi

Cardigan

SA43 1EW

Phone : 01239 623506

Sales@3ptechnik.co.uk

www.3ptechnik.co.uk

