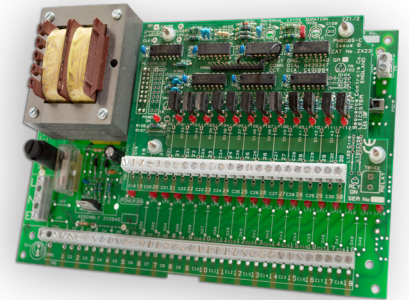
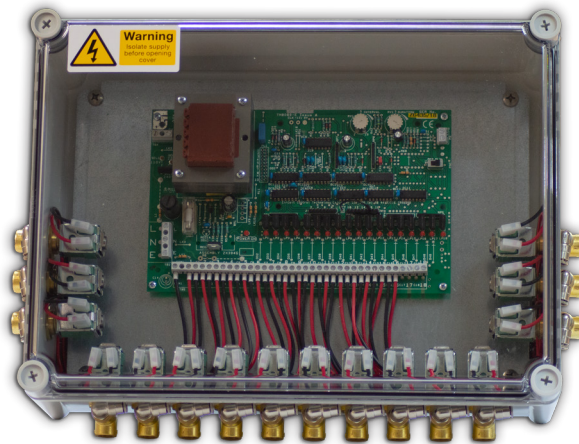


## CONTENTS

- System Overview 1
- Models and Options 2
- Set-up Procedure 3
- Technical Specifications 5



## System Overview

The **ZX394 Sequence Controller pcb** is the pulsing heart of our range of tried and tested 30 way Reverse Jet Stations. Aimed primarily at Dust Extraction and Air Flow applications, this sequencer has an electronic control system and responds to a simple volt-free open circuit. The unit is fully versatile for input voltage, output voltage, number of ways, pulse length and time between pulses. You select the number of ways by ordering an 18 or 30 way unit. Each unit has an on-board selector to pulse any number of ways you like up to the nominal. In other words, An 18 way can cover 2-18 ways, and a 30 way can cover 19-30 ways.

Input and output voltages are available from 12Vdc to 24Vdc, or 110Vac to 240Vac - see the table on page 2 for a breakdown. This table also details the options available on the various

models - options like Fan Rundown, Multiple Cycling of Outputs, Delay before Pulsing, Fast Clean Control, and top entry terminals.

Pulse Duration and Pulse Interval are adjustable as standard on all models and so is Wattage Output, man enough to fire 2 valves at once! The ZX394 is offered as a naked PCB ASSEMBLY or housed in a robust, IP65 rated, plastic enclosure as a SEQUENCE CONTROLLER or complete with pilot valves (and pipe fittings if required) - also in an IP65 plastic enclosure - as a REVERSE JET STATION.

Reverse Jet Stations can be ordered in the following number of solenoids fitted - 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30.

## Models and Options

The following is a table of models (-G...) available in the ZX394 Sequence Controller PCB. The features incorporated with each model are shown as well as a reference drawing number.

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE	FEATURES	REFERENCE DRAWING
-G4	110 / 220 / 240Vac	110Vac	Pressure Switch Control (PSC)	ZX394G43000
-G49	110 / 220 / 240Vac	110Vac	Pressure Switch Control (PSC)	ZX394G493000
			Fan Run Down (FRD)	
			Fast Clean Control (FCC)	
			Cycles of Board (PSC)	
-G9	12Vdc	12Vdc	Pressure Switch Control (PSC)	ZX394G93000
-G10	24Vdc	24Vdc	Pressure Switch Control (PSC)	ZX394G103000
-G15	110 / 220 / 240Vac	24Vdc	Pressure Switch Control (PSC)	ZX394G153000
-G159	110 / 220 / 240Vac	24Vdc	Pressure Switch Control (PSC)	ZX394G1593000
			Fan Run Down (FRD)	
			Fast Clean Control (FCC)	
			Cycles of Board (PSC)	
-G31	110 / 220 / 240Vac	24Vac	Pressure Switch Control (PSC)	ZX394G313000
-G319	110 / 220 / 240Vac	24Vac	Pressure Switch Control (PSC)	ZX394G3193000
			Fan Run Down (FRD)	
			Fast Clean Control (FCC)	
			Cycles of Board (PSC)	
-G33	24Vac	24Vac	Pressure Switch Control (PSC)	ZX394G333000
-G339	24Vac	24Vac	Pressure Switch Control (PSC)	ZX394G3393000
			Fan Run Down (FRD)	
			Fast Clean Control (FCC)	
			Cycles of Board (PSC)	

Drawing references shown are either 18 way or 30 way.

To order by part number, start by stating the number of ways, 18 or 30 way (outputs) required, followed by "W", then "ZX394" followed by the "-G..." number. e.g. an "18W ZX394-G15" is an 18 way ZX394 pcb with 240/110Vac in, 24Vdc out, pressure switch control only.

If ordering a Reverse Jet Station, start with number of valves.

## Set-up Procedure

The following is a flow chart of the set-up procedure for the ZX394 Sequence Controller PCB. The options available at each stage are explained in an easy to follow format.

### STAGE 1

#### Power Supply

Wire an isolated power supply into appropriately marked terminals at lower-left hand area of the board.  
**DO NOT SWITCH ON**  
Double check that supply is correct for model ("G" no.) and wired into correct terminals.  
On 240/220/110Vac input models ensure that the LINK adjacent to the power terminals is in the sockets appropriate to the incoming voltage. For safety reasons, this link is factory set for 240V.

### STAGE 2

#### Pressure Switch Control (PSC)

This unit pulses when there is an open circuit across terminals PS1 and PS2. Connect the volt-free N/C contacts of a pressure switch across these terminals to cause the board to pulse whenever pressure opens the contacts! Of course it doesn't have to be a pressure switch, you can use any volt-free contacts to automate pulsing. Switching SW1 (PSC) to the "OFF" position will override (open circuit) the PS1/PS2 terminals and pulse the board - use this facility for testing and commissioning.  
The normal operating position for this switch is the "DLY" setting. This allows a short time delay after PS1/PS2 goes open circuit before pulsing starts so that short term transient pressure signals do not precipitate premature pulsing.

### STAGE 3 - applicable to some models only

#### Fast Clean Control (FCC)

The FCC switch (SW2) controls the fast clean facility available on some models - see the table on page 2. This facility only comes into effect during Fan Rundown.  
Set the switch to "OFF" for no fast clean.  
Set the switch to "FC1" to reduce the time interval between pulses by approximately 10%  
Set the switch to "FC2" to reduce the time interval between pulses by approximately 20%  
This facility is of limited usefulness when applied to low numbers of valves e.g. on small installations.

### STAGE 4 - applicable to some models only

#### Fan Rundown Control (FRDC)

The FRDC switch (SW3) controls the Fan Rundown or "Afterclean" facility available on some models - see table on page 2. This functions by recognising a change of mode from open to closed circuit across terminals FR1/FR2. Connecting a N/C Volt-Free auxiliary of the Fan contactor to these terminals achieves this.  
Set SW3 to "OFF" for no aftercleaning.  
Set SW3 to "DLY" to introduce a delay of about 1 minute between the Fan being switched off and aftercleaning commencing. This allows the Fan and any free particles in the system to stabilise.  
Set SW3 to "O.DLY" for aftercleaning to start immediately upon the Fan being switched off.  
N.B. Aftercleaning does not require a Pressure Switch "HIGH" signal (open circuit at PS1/PS2) for the board to pulse.

STAGES CONTINUE ON PAGE 4

## Set-up Procedure - Continued

STAGE 5 - applicable to some models only

### Cycles of Board

This facility is available only on certain models - see table on page 2. It runs the pulsing of the board for up to 9 complete cycles every time cycling is initiated, whether by Pressure Switch or Fan Rundown. Set the PSC switch (SW1) to "CYC" and select the number of cycles you require by pushing the "PROG" flying lead on the board onto the appropriately marked terminal pin in the adjacent row. When cycling is complete, a red "STOP" LED lights up to indicate the board has returned to stand-by.



STAGE 6

### Number of Ways

Sets the number of outlets to be pulsed in one cleaning cycle. Simply push the "SET" flying lead on the PCB onto the appropriately marked pin in the row adjacent to it! e.g. "2" for 2 ways, "3" for 3 ways, etc.



STAGE 7

### Moment of Truth

This is the time you find out if you've got the power supply connected correctly. For your own peace of mind and safety - check it again.

Set the PSC switch (SW1) to "OFF" and TURN THE POWER ON!!

After a short interval, No.1 output will pulse, then No.2, No.3 and so on. Red LED's adjacent to each output will flash in turn to indicate which one is pulsing.



STAGE 8

### Set Interval and Duration

The "INTERVAL" potentiometer (RV1) controls the time delay between successive output pulses.

This is adjustable over a range of approximately 4 to 60 seconds (turn clockwise to increase).

The "DURATION" potentiometer (RV2) controls the length or "time on" of each pulse.

This is adjustable over a range of approximately 40 to 300 milliseconds (turn clockwise to increase).

### LEAVE IT SAFE

Turn off the power - Set PSC switch to "DLY".

## Technical Specifications

<b>Unit</b>	Part Number ZX394
<b>Power Supply / Power Consumption</b>	Volts:- Refer to table on page 2. Amps:- Less than 500mA
<b>Input Fuse</b>	Depending on Model Number.
<b>Output Fuse</b>	Depending on Model Number.
<b>Mains Failure</b>	In the event of power interruption, the unit will operate to specification when the supply voltage is re-instated.
<b>Startup Sequence</b>	The unit is arranged so that pulsing will start as soon as an open circuit has been established across terminals PS1/PS2 for a few seconds, unless another option has been selected (see "Power Supply" stage on page 3).
<b>Indication</b>	Red LED indicates "Power On", others light up to show which output is pulsing during cycling. Some models also have "STOP" LED also (see "Cycles of Board" stage on page 4).
<b>Ambient Temperature At Board Surface</b>	-10 to +45°C
<b>Storage Temperature</b>	-20 to +70°C
<b>Sequence Controller</b>	The ZX394 is also available enclosed within an IP65 rated plastic box. Just add "/E1" to the Part Number immediately after the model (-G...) number. Non-standard enclosures are also possible, or we can mount your ZX394 integrally with other equipments (e.g. Pressure Switch) on request. Please consult Circuit Control's sales department for more information.
<b>Reverse Jet Station</b>	The ZX394 can be used to drive any normally configured pilot valve, and we offer a variety of commercially available solenoid valves as standard in our Reverse Jet Stations - with or without rapid-fit or compression pipe fittings. Please consult Circuit Control's sales department for more information.
<b>External Signals</b>	The ZX394 conforms to current regulations regarding proper operation within zones of electrical interference. Nevertheless, we recommend that connections to external equipments are kept as short as possible, made with screened cable earthed at one end and/or via an interposing relay.
<b>Mains (ac) Supplies</b>	To ensure the reliable operation and longevity of your ZX394, any mains supply should not be a branch off a line carrying power to equipment containing rectifiers and/or thyristors (e.g. welders, variable speed drives, battery chargers, etc.). Keep supply cables away from other power carrying conductors. A free-standing mains filter is available if needed.