# Product Data Sheet
# KX7700ac RJ DP
## Multi Valve Controller


## SYSTEM OVERVIEW

- *The **KX** range is designed to serve reverse jet dust extraction systems and formulated specifically to address their needs .*
  *The **KX7700ac RJ DP Valve Controller** offers a fully self contained solution to multi valve control, incorporating on board solenoid valves and differential pressure sensing. This unit incorporates the latest in Microprocessor technology in a compact enclosure, affording unparalleled levels of user friendliness, system flexibility and tamper-proof operation.*
  *Capable of running up to 12 on-board solenoid valves, the system may be extended by matching external serial drone units so that up to 180 valves can be accommodated in a comprehensive sequence cycle.*
- ***KX7700ac RJ DP Valve Controller** takes care of system control. Using just four push buttons and the high resolution LCD Display, all aspects of system operation can easily be programmed for optimum performance.*

## Contents



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# Features

## ADVANCED MICRO-PROCESSOR CONTROL.

- Operating at over one million instructions per second the onboard micro-processor provides ease of use and a level of control which was virtually impossible with old plc or Cmos systems.

## ONBOARD EPROM MEMORY

- Ensures system settings are retained during power failure or disconnection of the Controller.

## EASY TO USE 4 BUTTON CONTROL

- MODE: Move forward through options
- UP: Increases values selected by mode
- DOWN: Decreases values selected by mode
- START/STOP: Run or halt the system

## HIGH RESOLUTION LCD DISPLAY

- Easily view and adjust system setup.
- Displays pressure readings in real time.
- Monitor current valve firing.
- Intelligent back-lighting to reduce power consumption and aid display visibility when needed.

## BUILT-IN DIFFERENTIAL PRESSURE SENSOR

- The KX7700ac RJ DP has it's own internal differential pressure sensor. This allows display of and reaction to differential pressure changes without the requirement for additional hardware and electrical connections.

## REAL TIME SYSTEM MONITORING

- Whilst the system is running, Differential Pressure and system status can be monitored in real time. Differential pressure is displayed constantly whenever the Controller is running as well as the number of the valve currently being pulsed in the cleaning sequence.
  One quick glance at the display will tell the operator system status and position in the cleaning cycle.

## BUILT-IN SOLENOID VALVES & SLAVE POWER SUPPLY

- The KX7700ac RJ DP is fully self contained and is supplied as standard with solenoid valves onboard thus keeping installation as simple as possible. The unit has an on-board power supply which may be used to power the extension slave units directly if required.

## CLEANING FAILURE WARNING (RELAY 1)

- The system is designed to expect effective cleaning to have taken place within five full cycles, if this is not the case relay 1 will activate for 5 seconds.

## CLEANING RUNNING (RELAY 2)

- Each time the controller has completed one full cycle, relay 2 is activated for 1 second.

## FAN RUNDOWN - SEPERATE CLEANING CYCLE FOR SYSTEM FAN STOP

- A seperately programmable cleaning cycle is provided for optimum filter performance. This operates whilst the main system fan is not running and can be preset for number of cycles (1-10).
  This is initiated when a volt free normally closed contact is applied across the 24V & FAN terminals. A short delay will take place (30 sec. approx.) then the cleaning cycle/cycles will start. Once the controller has completed the set amount of cycles, it will go into a holding state until the contact has opened.
  Please note: This facility will override all other inputs.

# Features - Contd.

## SYSTEM CONTROL

- The KX7700 has 3 different types of control settings:
  DP Sensor
  The Controller will start cleaning when the max pressure setting is achieved, and stops cleaning when the min pressure setting is achieved.
  Pressure Switch
  The controller will clean when a momentary signal is connected across 24V, Dig or a 24V DC supply is connected to DC Rem input terminals. If the signal is maintained, the controller will run continuously.
  Bypass
  The Controller will run regardless to the state of 24V, Dig & Rem input terminals.

## 4-20 MILLIAMP OUTPUT

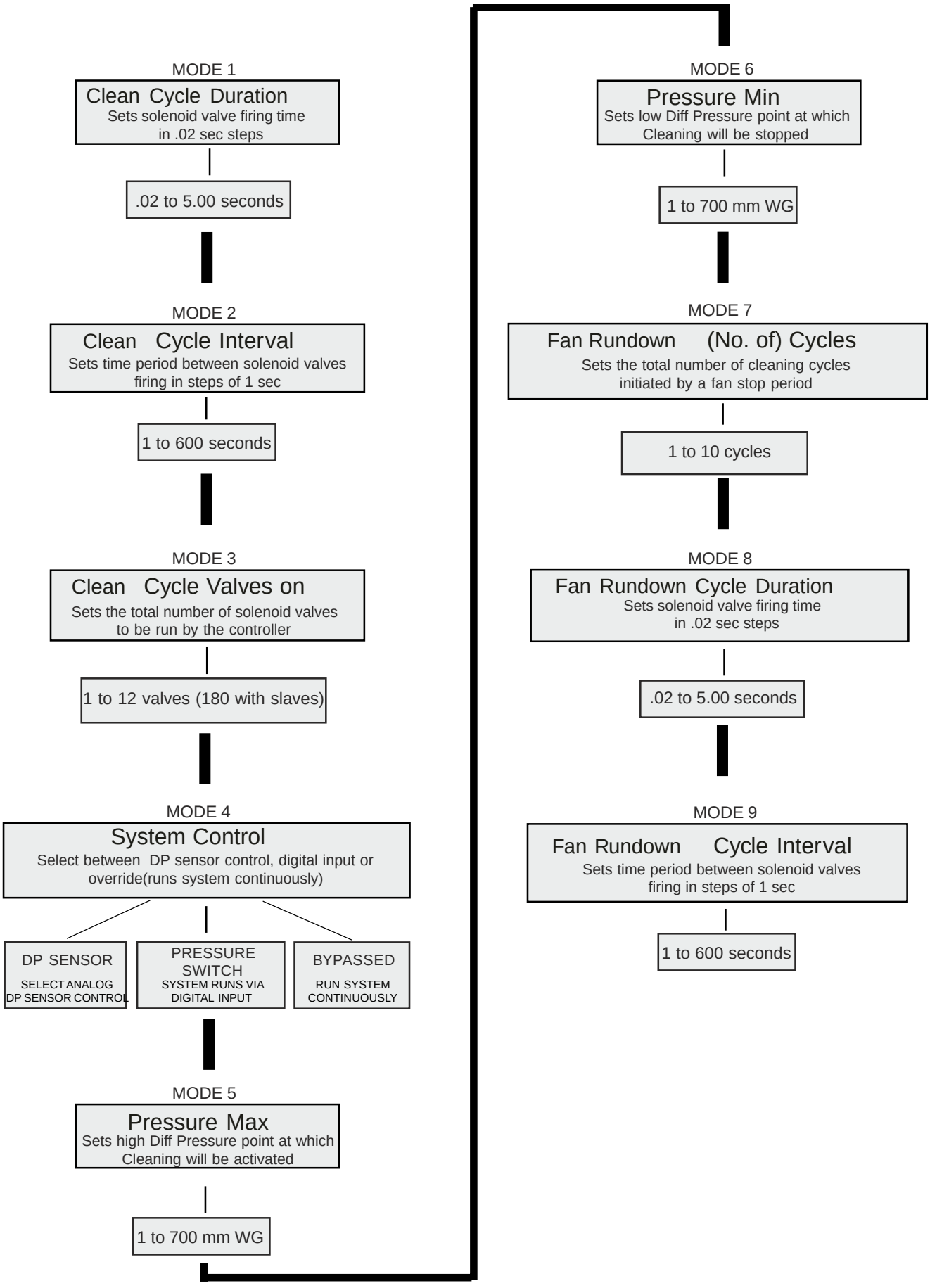
- The unit features an optional 4-20mA output which may be used to send pressure information to other devices or system controllers. This feature enables the KX7700 to communicate with any device that will accept this type of input and allow integration into virtually any application.
  To add this optional feature to your order, simply add “4-20" on the end of the order number (without quotes)

# Technical Specifications

| | |
|---|---|
| **CONTROLLER:** | Part Number KX7700ac RJ DP. |
| **INPUT SUPPLY:** | 115/230Vac (– 10%) |
| **INPUT FUSE:** | 2 Amp HBC 20mm . |
| **OUTPUT FUSE:** | Not required on this model type. |
| **POWER CONNECTIONS:** | INPUT: 1.5mm , 10 Amp side entry insulated terminal block marked: 240, 110, N, E<br>OUTPUT: 1.5mm 10 Amp side entry plug and socket insulated terminal block which is marked: 24V+, EARTH, 0V (fused) |
| **I/0 CONNECTIONS** | 11 way 16 amp insulated terminal block with wire protector, designated :- 0V, SERIAL, DIG, 24V, RL2, RL1, O12, O11, COM, FAN.<br>We recommend screened cable is used with 0V, SERIAL, DIG and 24V i.o. connections |
| **POWER LOSS:** | In the event of power loss, the unit will cease to operate but will remember its operational settings. Operation will recommence as soon as the voltage level comes within the input supply limits. |
| **OUTPUT VOLTAGE:** | 24V DC Regulated. |
| **OUTPUT LOAD PER OUTLET:** | 10W continuous, 22W pulsed into solenoid valves. |
| **START UP SEQUENCE:** | The unit will always start at output 1. |
| **PRESSURE SCALE:** | 0 - 700mmWG. |
| **CONSTRUCTION:** | Solid state microprocessor components mounted on a double sided glass fibre P.C.B. with component mask. |
| **INDICATION:** | Valve Numbers 1-12 (or up to max 180 with drone units) will be displayed on the LCD as each output is energised in sequence. |
| **AMBIENT TEMPERATURE AT BOARD SURFACE:** | 0 to +45 deg.C. Storage Temperature: -10 to +60 deg.C. |
| **VIBRATION SPEC:** | Not greater than BEAMA Group 2. |
| **CONDUCTING MATERIALS:** | Standard PCB's can be supplied with their surfaces coated with a layer of Parylene C, a material that is to MOD standard 59-47/4, and MIL-1-460C. This treatment reduces the risk of damage through moisture and must be specified at time of order. |
| . | |
| **ENCLOSURE:** | Polycarbonate box with removable clear cover (manufactured to IP65).<br>Size: 340mm x 150mm x 100mm |

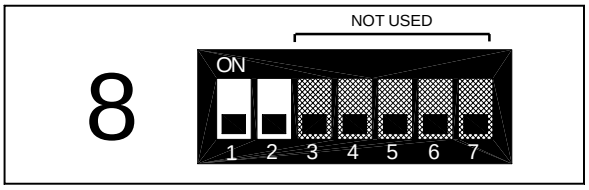
# Programmable Features

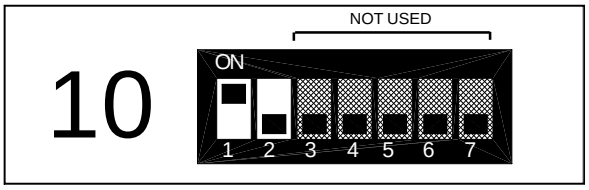
The following is a flow chart of the programmable settings available on the KX7700ac RJ DP Valve Controller.
The options available in each mode are explained in an easy to follow format.

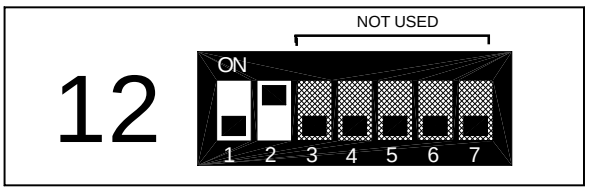


# *Binary Dip Switch (Controller and Drone)*

## CONTROLLER: VALVES INSTALLED

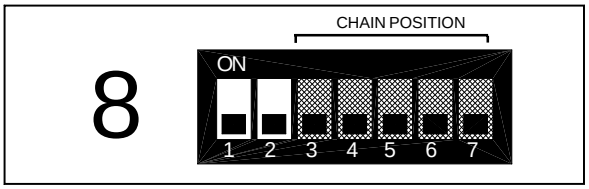


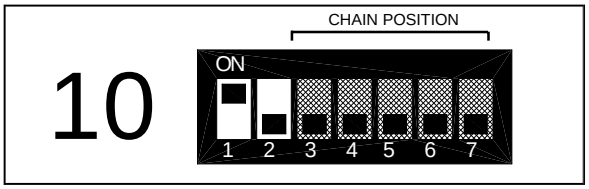



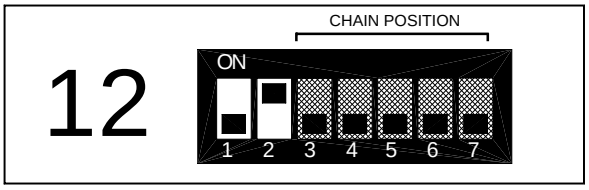




This setting should reflect the number of solenoid valves actually installed in controller unit.

## DRONE: VALVE OUTPUTS

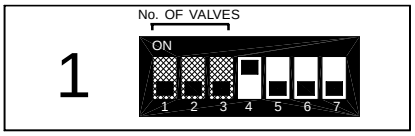


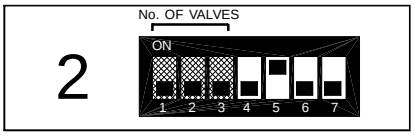



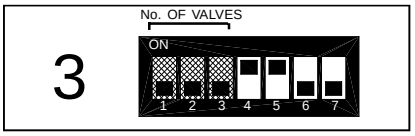



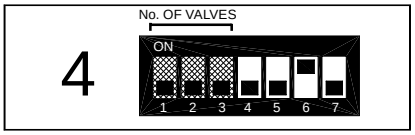

This setting should reflect the number of solenoid valves actually installed in the drone unit.
Controller and drones combination will pulse any number

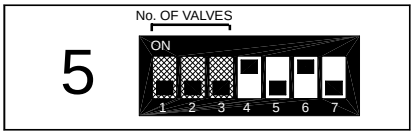
## DRONE: CHAIN POSITION

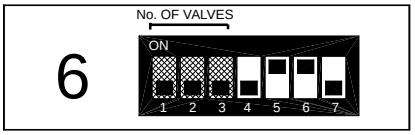


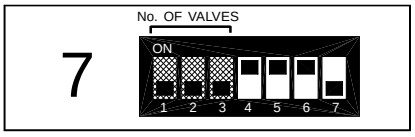



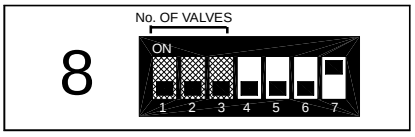



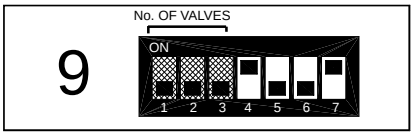



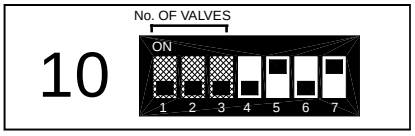



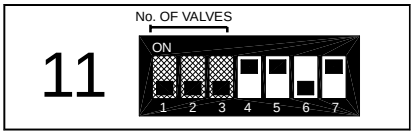



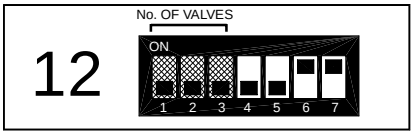



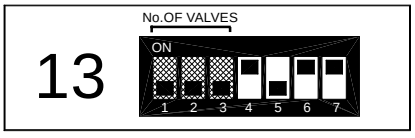



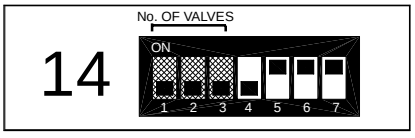



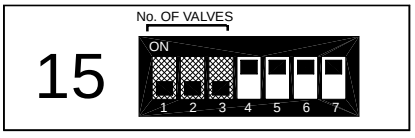




This setting determines a drone unit's firing position in a chain. Any drone selected in position 1 will fire its valves simult aneously with the Controller. No more than 4 valves should be selected to fire simultaneously in a chain. N.B. The controller's position is always 1 (one) a nd does not require setting.

# Technical Drawing