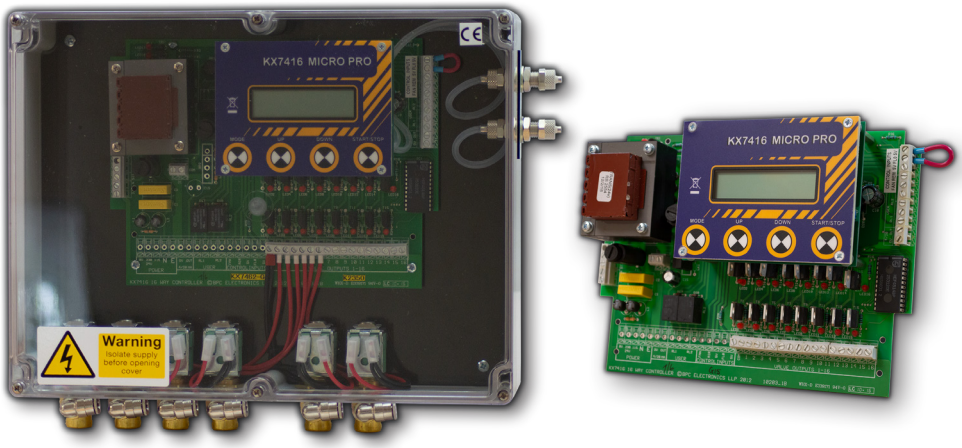
KX74162 Up To 16-way Valve Controller



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System Overview

The **KX** range is designed to serve reverse jet dust extraction systems and formulated specifically to address their needs.
The **KX74162 Valve Controller** is a fully self-contained solution to multi-valve control, incorporating differential presure sensing. This unit offers the latest in Micro-processor technology in a compact enclosure, affording unparalleled levels of user frendliness, system flexibility and tamper-proof operation.

The **KX74162 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. The **KX74162** is offered as a naked PCB assembly or housed in a robust IP65 rated plastic enclosure - as a reverse jet.

Rev. I / 22.03.19

Features

Advanced Micro-Processor Control

◊ Operating at over a 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

◊ This feature ensures that system settngs are retained during power failure or whilst power is turned off.

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 system status.

Built-in Differential Pressure Sensor

◊ The KX74162 has its own internal differential pressure sensor which allows the unit to clean only when needed. This also dispenses with the need for additional external devices.

Real-Time System Monitoring

◊ Whilst the system is running, Differential Pressure (DP) and system status can be monitored in real-time. Differential pressure is displayed constantly whenever the Controller is running along with the number of the current valve to be fired during the cleaning sequence. One quick glance at the display will tell the operator the current state of the system and the current position in the cleaning cycle

Built-in Output Amplifiers & Power Suply

◊ The unit has its own internal power supply. Power output to solenoid valves is provided directly from the Controller using the internal power amplifiers.

High/Low Pressure Alarms

◊ The KX74162 has two relay outputs. These are activated when the differential pressure in the system reaches the user defined settings for a high alarm or low alarm situation.

◊ The relay outputs may be used to trigger any amount of external events and allow the system malfunction to be handled immediately and effectively. The dual relay system means that high and low pressure events may be handled differently and trigger a separate chain of events to warn of, and handle the situation.

◊ The units LCD display will carry a warning message if high or low pressure alarm levels are reached.

Features - Continued

Separate Cleaning Cycle For System Fan Stop

- ◊ A separately programmable cleaning cycle is provided for optimum filter performance. This operates whilst the main system fan is not running and can be preset for a number of cycles. It can also be disabled by setting the number of cycles to 0.

4-20 Milliamp Output

- ◊ The unit features a 4-20mA output which may be used to send pressure information to other devices or system controllers. This feature enables the KX74162 to communicate with any device that will accept this type of input and allow integration into virtually any application.

Remote Control

- ◊ The KX74162 has the facility for remote start/stop of the cleaning cycles. It can be remotely started or stopped via the 5V and REM terminals. The unit is arranged so that pulsing will start as soon as an open circuit is established across 5V and REM.
  If the controller is in DP sensor mode, the remote start/stop facility still functions in conjunction with the Differential Pressure (DP) Set Points.

Technical Specifications KX74162-G10

Controller	Part Number KX74162-G10
Input Supply	24VDC ± 10%
Input Fuse	F3 Axial 2 Amp (T) Time Lag.
Input Connections	3 Way 1.5mm 10 Amp side entry plug and socket insulated terminal block which is marked: 0V, 24VDC.
Mains Failure	In the event of mains failure, the unit will operate to specification as soon as the voltage level comes within the above limits.
Output Voltage	24V DC, regulation as input.
Output Load Per Outlet	36W continuous, 44W pulsed into solenoid valves.
I/O Connections	1.5mm 10 Amp side entry plug and socket insulated terminal block which is marked: 4-20 - 0V, OUT *Alarms* - marked: USER - RL1, RL2 *Control Inputs* - marked: CONTROL INPUTS - FAN, REM, 5V, FLO, 5V *Valve Outputs* - marked: VALVE OUTPUTS - COM and 1-16.
DP Pressure Connections	2 x 5mm (outside diameter) pneumatic compression connectors suitable to accept nylon hose.
Startup Sequence	The unit is arranged so that it will always start at output 1.
Pressure Scale	0-700mm WG.
Construction	Solid state micro-processor components mounted onto a double-sided fibreglass PCB with component mask.
Indication	Valve numbers 1-16 will be displayed as each output is energised in sequence
Ambient Temperature At Board Surface	0 to +45°C Storage Temperature: 0 to +60°C
Vibration Spec	No Greater than BEAMA Group 2.
Conducting Materials	Standard PCBs 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.
Micro-Pro Sequencer	Polycarbonate box with clear lid. Size: 360 x 200 x 150mm (E3)

The manufacturer reserves the right to change product design and specifications at any time and without prior notice

*****Important Information*****

Please do not site this controller in close proximity to Frequency inverters or Electrostatic switching devices and treat all cabling as you would for data applications.

Technical Specifications KX74162-G15

Controller	Part Number KX74162-G15
Input Supply	115-230V +10% -15% @ 50/60Hz.
Input Fuse	Fuse 1: 1 Amp 230V HBC 20mm
Valve Output Fuse	Fuse 2: 2 Amp 24V (T) Time Lag.
Input Connections	3 Way 1.5mm 10 Amp side entry plug and socket insulated terminal block which is marked: 230, 115, NEUT.
Mains Failure	In the event of mains failure, the unit will operate to specification as soon as the voltage level comes within the above limits.
Output Voltage	24V DC, regulation as input.
Output Load Per Outlet	36W continuous, 44W pulsed into solenoid valves.
I/O Connections	1.5mm 10 Amp side entry plug and socket insulated terminal block which is marked: 4-20 - 0V, OUT *Alarms* - marked: USER - RL1, RL2 *Control Inputs* - marked: CONTROL INPUTS - FAN, REM, 5V, FLO, 5V *Valve Outputs* - marked: VALVE OUTPUTS - COM and 1-16.
DP Pressure Connections	2 x 5mm (outside diameter) pneumatic compression connectors suitable to accept nylon hose.
Startup Sequence	The unit is arranged so that it will always start at output 1.
Pressure Scale	0-700mm WG.
Construction	Solid state micro-processor components mounted onto a double-sided fibreglass PCB with component mask.
Indication	Valve numbers 1-16 will be displayed as each output is energised in sequence
Ambient Temperature At Board Surface	0 to +45°C Storage Temperature: 0 to +60°C
Vibration Spec	No Greater than BEAMA Group 2.

Technical Specifications KX74162-G15 - Continued

Conducting Materials	Standard PCBs 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.
Micro-Pro Sequencer	Polycarbonate box with clear lid. Size: 360 x 200 x 150mm (E3)

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Technical Specifications KX74162-G4

Controller	Part Number KX74162-G4
Input Supply	115-230V +10% -15% @ 50/60Hz.
Input Fuse	Fuse 1: 1 Amp 230V HBC 20mm
Valve Output Fuse	Fuse 2: 1 Amp 110V HBC 20mm
Input Connections	3 Way 1.5mm 10 Amp side entry plug and socket insulated terminal block which is marked: 230, 115, NEUT.
Mains Failure	In the event of mains failure, the unit will operate to specification as soon as the voltage level comes within the above limits.
Output Voltage	110Vac
Output Load Per Outlet	36W continuous, 44W pulsed into solenoid valves.
I/O Connections	1.5mm 10 Amp side entry plug and socket insulated terminal block which is marked: 4-20 - 0V, OUT *Alarms* - marked: USER - RL1, RL2 *Control Inputs* - marked: CONTROL INPUTS - FAN, REM, 5V, FLO, 5V *Valve Outputs* - marked: VALVE OUTPUTS - COM and 1-16.
DP Pressure Connections	2 x 5mm (outside diameter) pneumatic compression connectors suitable to accept nylon hose.
Startup Sequence	The unit is arranged so that it will always start at output 1.
Pressure Scale	0-700mm WG.
Construction	Solid state micro-processor components mounted onto a double-sided fibreglass PCB with component mask.
Indication	Valve numbers 1-16 will be displayed as each output is energised in sequence
Ambient Temperature At Board Surface	0 to +45°C Storage Temperature: 0 to +60°C
Vibration Spec	No Greater than BEAMA Group 2.

Technical Specifications KX74162-G4 - Continued

Conducting Materials	Standard PCBs 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.
Micro-Pro Sequencer	Polycarbonate box with clear lid. Size: 360 x 200 x 150mm (E3)

The manufacturer reserves the right to change product design and specifications at any time and without prior notice

*****Important Information*****

Please do not site this controller in close proximity to Frequency inverters or Electrostatic switching devices and treat all cabling as you would for data applications.

Technical Specifications KX74162-G31

Controller	Part Number KX74162-G31
Input Supply	115-230V +10% -15% @ 50/60Hz.
Input Fuse	Fuse 1: 1 Amp 230V HBC 20mm
Valve Output Fuse	Fuse 2: 2 Amp 24V HBC 20mm
Input Connections	3 Way 1.5mm 10 Amp side entry plug and socket insulated terminal block which is marked: 230, 115, NEUT.
Mains Failure	In the event of mains failure, the unit will operate to specification as soon as the voltage level comes within the above limits.
Output Voltage	24Vac
Output Load Per Outlet	36W continuous, 44W pulsed into solenoid valves.
I/O Connections	1.5mm 10 Amp side entry plug and socket insulated terminal block which is marked: 4-20 - 0V, OUT *Alarms* - marked: USER - RL1, RL2 *Control Inputs* - marked: CONTROL INPUTS - FAN, REM, 5V, FLO, 5V *Valve Outputs* - marked: VALVE OUTPUTS - COM and 1-16.
DP Pressure Connections	2 x 5mm (outside diameter) pneumatic compression connectors suitable to accept nylon hose.
Startup Sequence	The unit is arranged so that it will always start at output 1.
Pressure Scale	0-700mm WG.
Construction	Solid state micro-processor components mounted onto a double-sided fibreglass PCB with component mask.
Indication	Valve numbers 1-16 will be displayed as each output is energised in sequence
Ambient Temperature At Board Surface	0 to +45°C Storage Temperature: 0 to +60°C
Vibration Spec	No Greater than BEAMA Group 2.

Technical Specifications KX74162-G31 - Continued

Conducting Materials	Standard PCBs 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.
Micro-Pro Sequencer	Polycarbonate box with clear lid. Size: 360 x 200 x 150mm (E3)

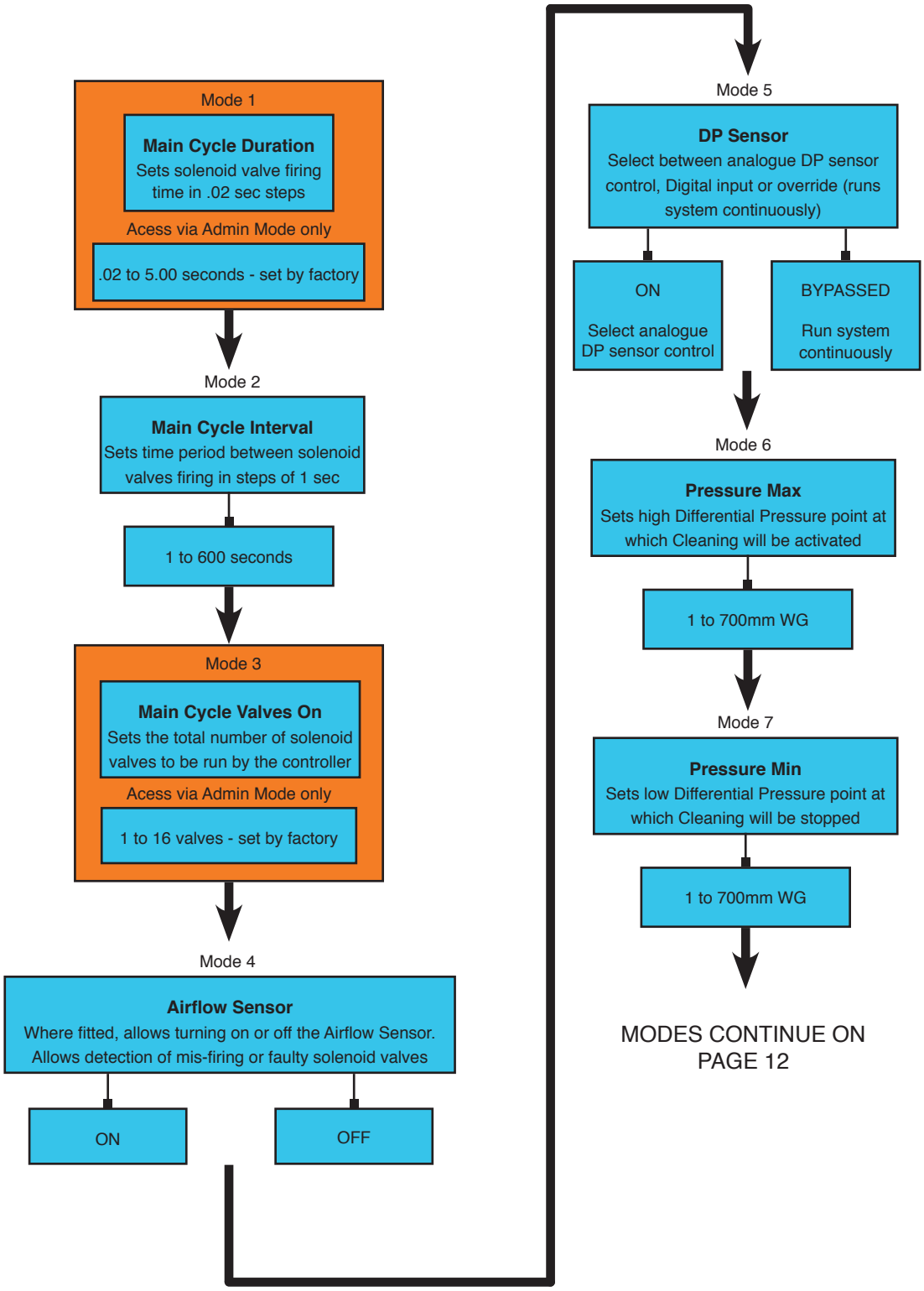
The manufacturer reserves the right to change product design and specifications at any time and without prior notice

*****Important Information*****

Please do not site this controller in close proximity to Frequency inverters or Electrostatic switching devices and treat all cabling as you would for data applications.

Progammable Features

The following is a flow chart of the programmable settings available on the KX74162 Valve Controller. The options available in each mode are explained in an easy to follow format.



MODES CONTINUE ON PAGE 12

Progammable Features - Continued

Mode 8

Set Hi Alarm
Sets pressure at which high warning and high alarm relay are activated

1 to 700mm WG

Mode 9

Set Lo Alarm
Sets pressure at which low warning and low alarm relay are activated

1 to 700mm WG

Mode 10

Fan Rundown Num Cycles
Sets number of cleaning cycles initiated by a fan stop period

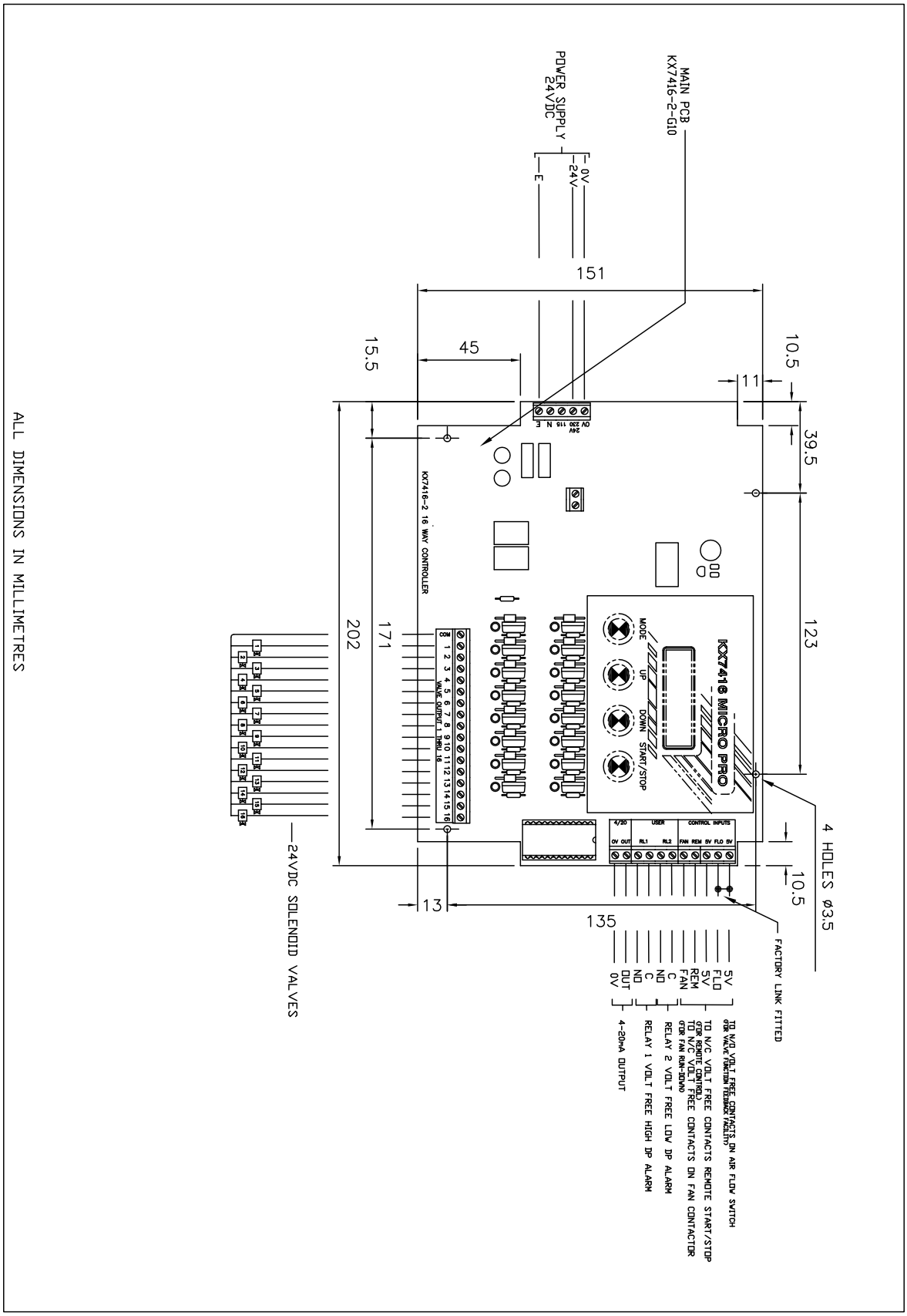
0 to 15 cycles

Mode 11

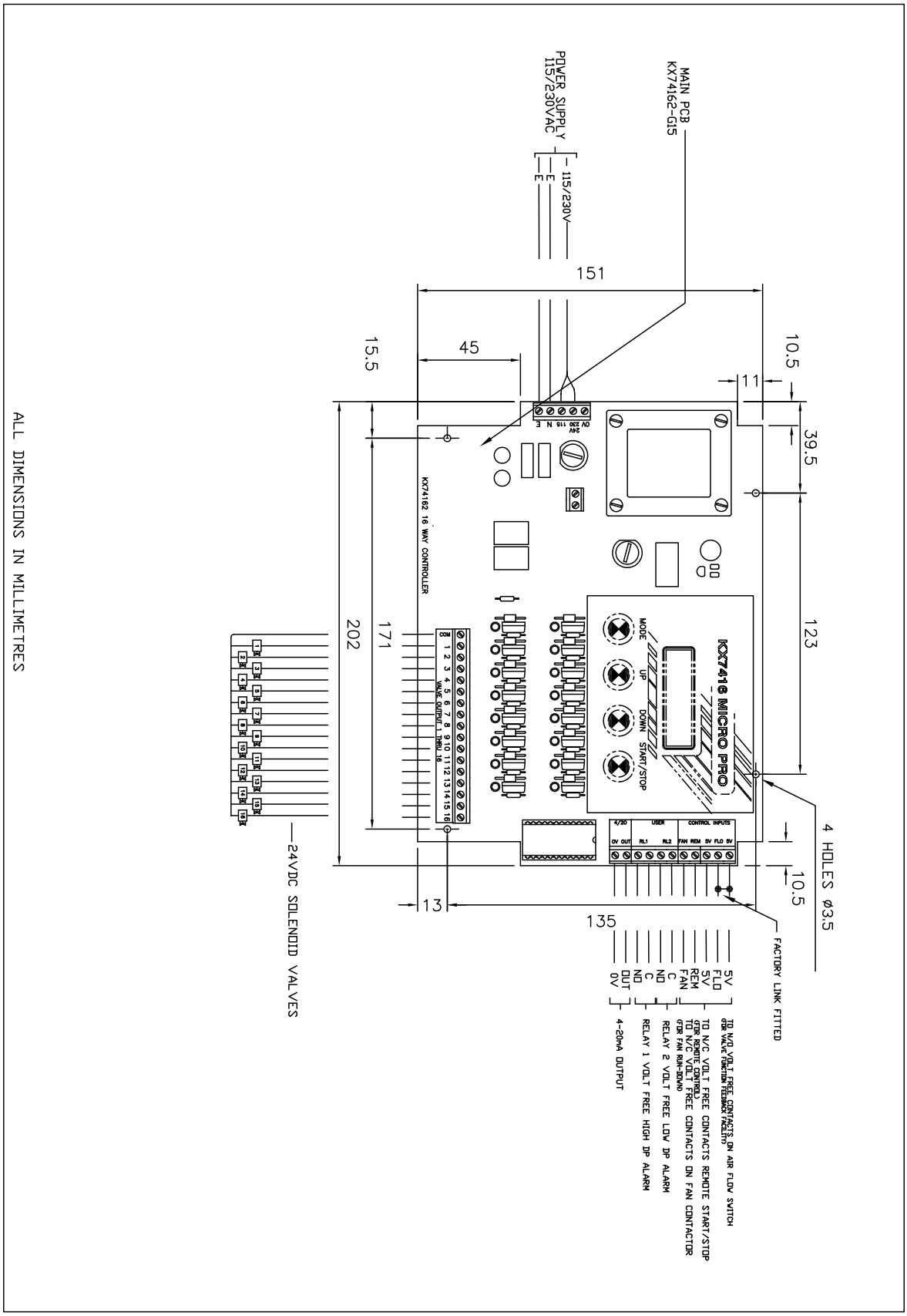
Fan Rundown Cycle Interval
Sets time period between solenoid valves firing in steps of 1 sec

1 to 600 seconds

KX74162-G10 Wiring Diagram



KX74162-G15 Wiring Diagram



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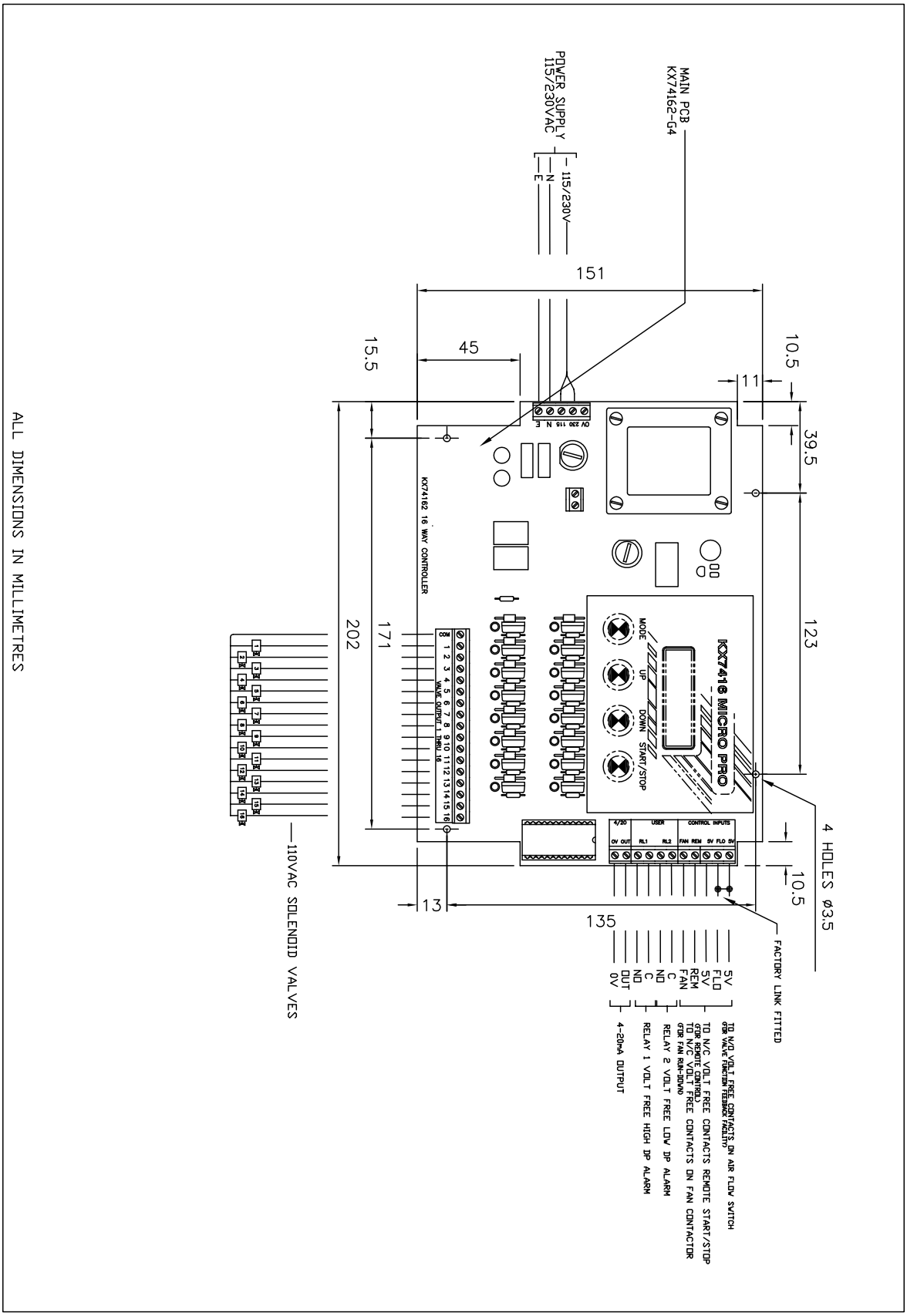
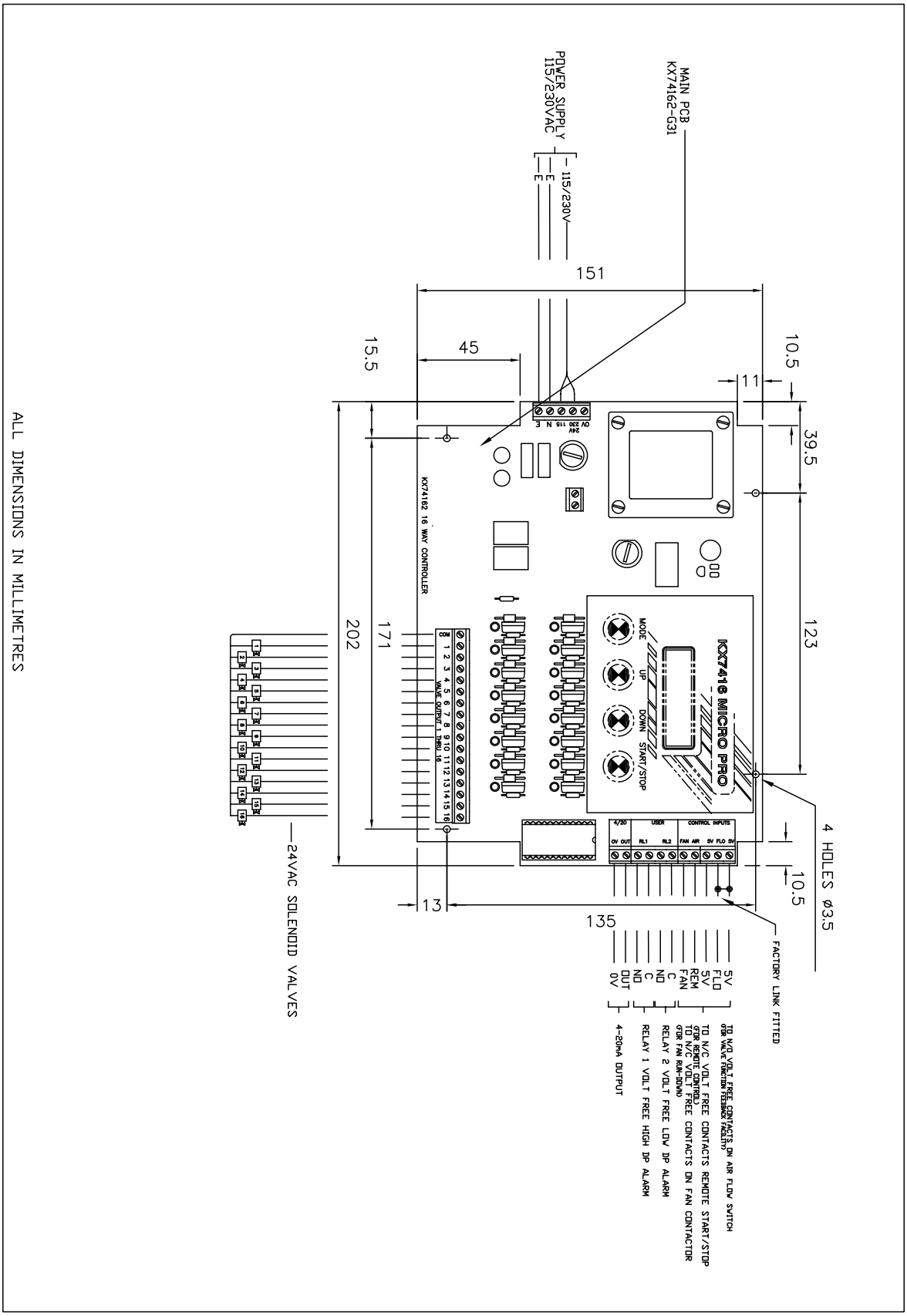
KX74162-G4 Wiring Diagram

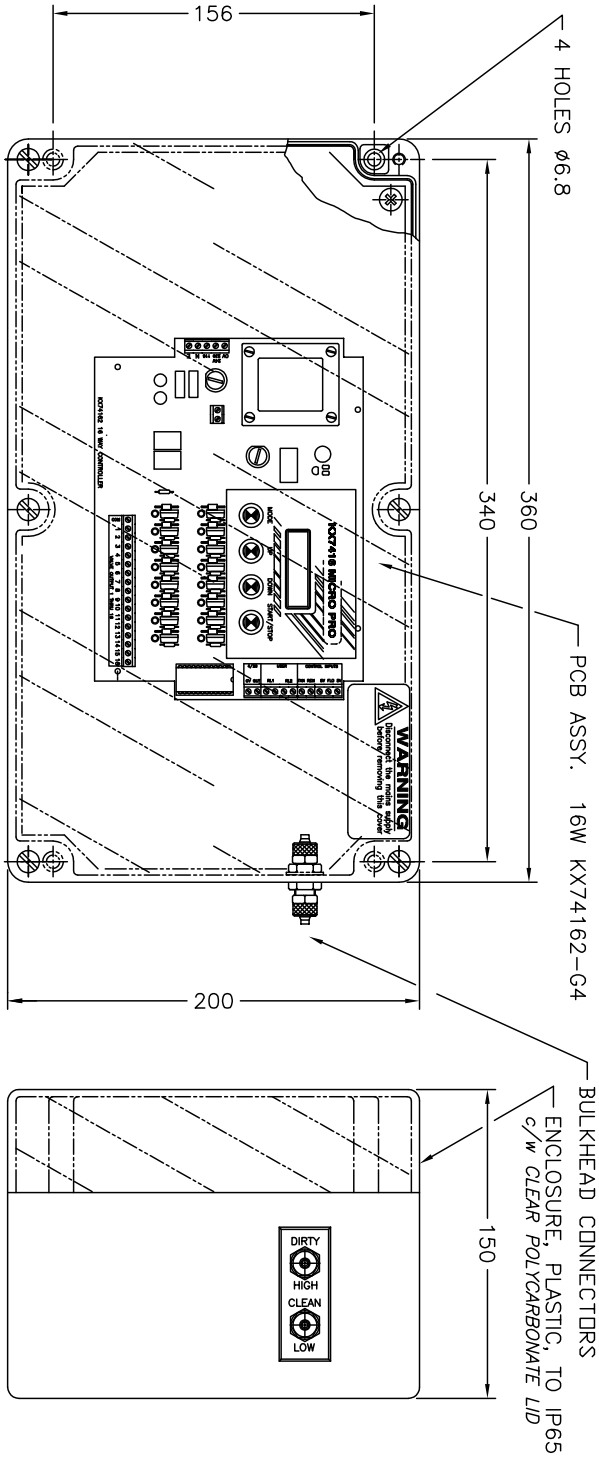


KX74162-G31 Wiring Diagram



KX74162 Up To 16-way Valve Controller

KX74162 - As A Sequence Controller



KX74162 Up To 16-way Valve Controller

KX74162 - As A Reverse Jet Station