

ATTENTION: READ THIS FIRST!

For more detailed installation, configuration, programming, and operating instructions, refer to the *UPC20+ Universal Power Controller* Instruction Manual available on-line at www.amx.com.

IMPORTANT SAFETY INSTRUCTIONS

When using your UPC20+ (FG672), basic safety precautions should always be followed, including the following:

1. Read and understand all instructions before using. Close supervision is necessary when any appliance is used by or near children. Do not leave appliance unattended while in use.
2. Care must be taken as burns can occur from touching hot parts.
3. The appliance switch is provided with the symbols 0 indicating off and 1 indicating on. The symbols O and I may be used for this purpose.
4. Do not operate appliance with a damaged cord or if the appliance has been dropped or damaged - until it has been examined by a qualified serviceman.
5. Position the cord so that it will not be tripped over, pulled, or contact hot surfaces.
6. If an extension cord is necessary, a cord with a current rating at least equal to that of the appliance should be used. Cords rated for less amperage than the appliance may overheat.
7. Always unplug appliance from electrical outlet before cleaning and servicing and when not in use. Never yank cord to pull plug from outlet. Grasp plug and pull to disconnect.
8. Let appliance cool completely before putting away. Loop cord loosely around appliance when storing.
9. To reduce the risk of electric shock, do not immerse this appliance in water or other liquids.
10. To reduce the risk of electric shock, do not disassemble this appliance, but take it to a qualified serviceman when service or repair work is required. Incorrect reassembly can cause electric shock when the appliance is used subsequently.
11. The use of an accessory attachment not recommended by the manufacturer may cause a risk of fire, electric shock, or injury to persons.
12. Connect this appliance to a grounded outlet.
13. Disconnect this unit from its source of supply before replacing any part.
14. This appliance has a polarized plug (one blade is wider than the other). To reduce the risk of electric shock, this plug is intended to plug into a polarized outlet only one way. If the plug does not fit fully into the outlet, reverse the plug. If it still does not fit, contact a qualified electrician. Do not modify the plug in any way.

SAVE THESE INSTRUCTIONS

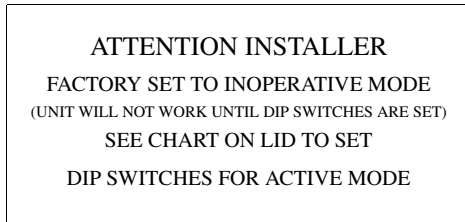


FIG. 1 UPC20+ inoperative mode warning label

UPC20+ Wiring Requirements

In the United States, the UPC20+ must be wired by an authorized electrician in accordance with the National Electrical Code, ANSI/NFPA 70-1987, as well as all local codes.

In the European community, the UPC20+ unit must be wired by an authorized electrician in accordance with all applicable European codes.

A readily accessible disconnect device shall be incorporated into the fixed wiring.

An insulated earthing conductor that is identical in size, insulation material and thickness to be earthed and unearthed branch circuit supply conductors, except that it is green with or without one or more yellow stripes, is to be installed as part of the branch circuit which supplies the unit or system. The earthing conductor described is to be connected to earth at the service equipment, or supplied by a separately derived system, at the supply transformer or motor generator set.

Product Information

Using Motor Control mode, the UPC20+ output alternates between two relays, providing a brief pause in-between relay contacts, to protect the motor. A timing adjustment potentiometer is user adjustable for automatic release of the relays. (The range is 0 to 90 seconds). 1-, 2-, and 3- button control modes are selectable.

In Power Control mode, the UPC20+ provides power control for two independent circuits with a combined total load of 20 Amps. Single-button momentary/latching and 2-button latching modes are selectable.

- **Momentary Power** Relay contacts are closed only as long as a closure from input to common is maintained.
- **Latching Power** Relay contacts are toggled (from open to closed and closed to open) each time a closure from input to common is momentarily pulsed.

Note: The UPC20+ cover contains information on high voltage wiring, low voltage wiring, and DIP switch settings.

The UPC20+ will work the NXC-I/O10 input/output control card.

Specifications

UPC20+ Specifications	
Power	Self-powered when used with 110/220 VAC
Power input (for control board)	120/240V ~, 50-60 Hz, 0.05/0.025A -or- 12 VDC, 0.2A max
Power output per relay	<ul style="list-style-type: none"> • 20A @ 120/240V ~, 50-60 Hz (RESISTIVE LOAD) • 6A @ 277V ~, 50-60 Hz (FLUORESCENT BALLAST) • 1 HP @ 120V ~, 50-60 Hz (INDUCTIVE LOAD) • 2 HP @ 240V ~, 50-60 Hz (INDUCTIVE LOAD) Total Current through both relays CAN NOT exceed 20 amp.
Maximum operating ambient temperature	55°C
Approvals	UL / C-UL / CE
Includes	<ul style="list-style-type: none"> • 1-, 2-, and 3-button logic modes • Local test switches with status LEDs • 120, 240, and 277 VAC control capability
Inputs	<ul style="list-style-type: none"> • 4 closure inputs, operation defined by mode. • One IR remote sensor input. • Motor Control mode alternates between the timed operation of the two power relays. • Power Control mode allows independent control of both power relays.
Control Ports	Two 2400 W power relays. Total combined current through both relays is 20 Amps.
Input Power Switch (S1)	<ul style="list-style-type: none"> • Set this switch according to the high voltage wiring that will be connected to terminals 5 and 6 on P1. • Set switch S1 to the line input voltage value used before applying power to the UPC20+.
High Voltage Terminal Block (P1)	High voltage input and output wiring for motor or power control.
Low voltage and Control Terminal Block (P2)	Contact closure, open-collector or CMOS logic level remote control wiring. Inputs 5 - 8 are referenced to the common connection at pin 4.
Jumper JP1	Sets control mode of the unit to contact closure or remote sensor serial data.
Test Switches (PB1 and PB2)	Provides local operation of relays K1 and K2 for testing power circuits or motors connected to the relay terminals. An LED indicates relay power applied.
Motor Time Delay Potentiometer (R8)	Only used in motor control modes. User adjusted for setting relay release time between 0 and 90 seconds.
DIP Switch (S2)	Provides selection of control mode options. See the Motor Control Mode DIP Switch S2 Positions table on page 1 and the Control Input Wiring to Connector P2 Terminals table on page 2 for control mode settings.
Enclosure	Metal with black matte finish, knockouts for conduit.
Dimension (HWD)	<ul style="list-style-type: none"> • 8.5" (10.5" including flange) x 4.5" x 2.2" • (220 mm (270 including flange) x 110 mm x 60 mm)
Weight	3.0 lbs. (1.4 kg) with flange
Options	12 VDC power supply (for 277 VAC applications)

Control Options Modes

Note: If UPC20+ is powered up when changes are made to Dip Switch settings, then power must be cycled before changes can take effect.

Motor Control Mode DIP Switch S2 Positions				
1	2	3	4	Control Mode
On	On	Off	On	Single button
Off	Off	Off	On	2-button
Off	On	Off	On	Momentary On/Off

- **Single Button Mode** operates with one pushbutton in a sequence: Up, Stop, Down, Stop and so on for each successive button press.
- **Two/Three Button Mode** operates with two pushbuttons, one for Up and one for Down.
- **Momentary On/Off** operates only when the button is pressed.

Control Input Wiring to Connector P2 Terminals					
4	5	6	7	8	Control Mode
Common	Up	Down	Stop	N/A	Two, three button
Common	Up/Stop/Down	N/A	N/A	N/A	Single button

Power Control mode

The tables below specify the DIP switch settings for momentary, latching, 2-button On/Off, and (momentary or latching) operation of K1 and K2.

Power Control Mode DIP Switch Positions S2				
1	2	3	4	Control Mode
On	On	On	On	Momentary On/Off
Off	On	On	On	Latching On/Off
On	Off	Off	On	Two-Button On, Off
On	Off	On	On	#1 Momentary, #2 Latching
Off	Off	On	On	#1 Latching, #2 Momentary

Control Input Wiring to P2 Terminals					
4	5	6	7	8	Control Mode
Common	#1 On/Off	#2 On/Off	N/A	N/A	Momentary, Latch On/Off
Common	#1 On	#2 On	#1 Off	#2 Off	Two-Button On/Off

Note: For remote sensor control mode refer to the *UPC20+ Universal Power Controller Instruction Manual* available on-line at www.amx.com.

Installing the UPC20+

To install the UPC20+ unit:

- Mount the UPC20+ on a wall or solid surface in the location where it will be used; it can be mounted either horizontally or vertically.
- Remove the cover.
- Prepare terminal block P1.
 - Set power switch S1.
 - Configure jumpers according to high voltage wiring requirements.
- Install conduit. Provide conduit for high voltage, low voltage and control wiring requirements using the 0.5 inch or 0.75 inch conduit connector knockouts.
- Connect high voltage wiring to the terminal block P1.
- Connect control wiring.
 - Set control mode DIP switch S2 and control jumper JP1. For more detailed information refer to the *Control Options Modes* section on page 5 of the manual.
 - Install wiring for contact closure or remote control mode.
- Test low voltage and high voltage wiring. Conduct tests to confirm proper installation and functions of desired control modes.

P1 Terminal Connections

Terminal	Input/Output	Function
1	Output	Load 1 out
2	Input	Line 1 in
3	Output	Load 2 out
4	Input	Line 2 in
5	Input	Neutral to transformer on PCB which supplies low voltage
6	Input	Line to transformer on PCB which supplies low voltage

P2 Terminal Connections

P2 Low Voltage Terminal Inputs/Outputs	
Terminal	Input/Output
1	+12 VDC out
2	Serial data in (IR sensor)
3	Ground
4	Ground (common)
5	Input 1
6	Input 2
7	Input 3
8	Input 4
9	+12 VDC in

High Voltage Wiring Options

Single circuit 120/240 VAC

Single circuit connections (FIG. 2) are for most motor and screen control applications.

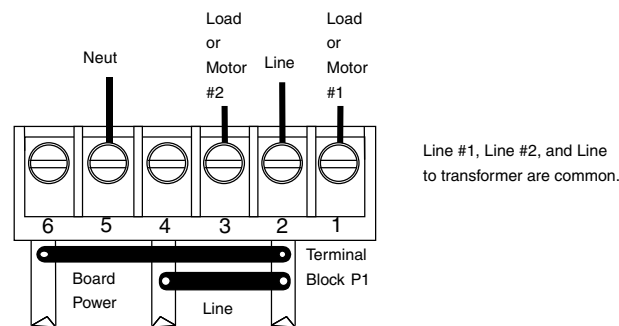


FIG. 2 Single circuit 120/240 VAC power wiring

Dual circuit 120/240 VAC

Dual circuit connections provide power from two 120/240 VAC supply systems. FIG. 3 shows a dual circuit 120/240 VAC power wiring.

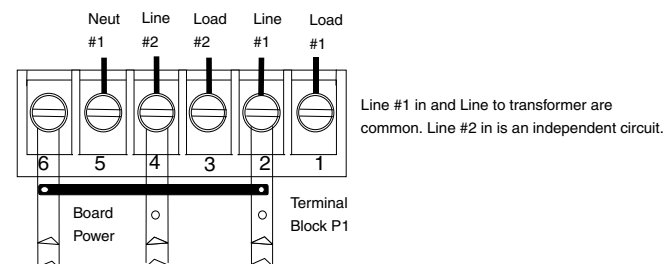


FIG. 3 Dual circuit 120/240 VAC power wiring

Dual circuit 277 VAC

Dual circuit connections provide power from 277 VAC for fluorescent ballasts (FIG. 4). Circuit board power is provided by a separate 120/240 VAC high voltage circuit, or 12 VDC connected to terminals 1 and 6 on the low voltage terminal block. For dual circuit 120/240 VAC operation, remove the short 12 AWG wire jumper.

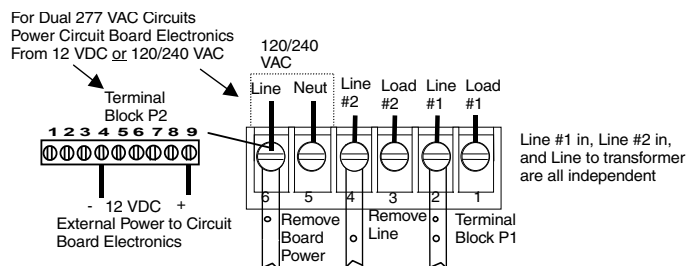


FIG. 4 Low voltage and 277 VAC high voltage wiring

Caution: If motors of any kind are used, do not set to a power control mode. When a power control mode is selected, both relays can be on at the same time. Motors can be severely damaged if this happens.

Note: For wireless IR sensor connection refer to the *UPC20+ Universal Power Controller Instruction Manual* available on-line at www.amx.com.

Wiring The UPC20+ to Either The IRX-DM+ or IRX-SM+

Wire the UPC20+ to the sensor as shown in FIG. 5..

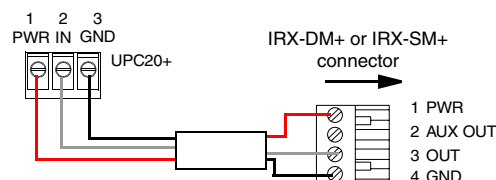


FIG. 5 Wiring diagram for UPC20+ to IRX-DM+ or IRX-SM+

AMX Corporation reserves the right to alter specifications without notice at any time.
For full warranty information, refer to the AMX Instruction Manual(s) associated with your Product(s).

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