

Preset 10 Troubleshooting

The Preset 10 product has proven to be very popular with hundreds of installed units around the world. With this many installations, some problems are bound to come up. This guide will highlight the issues which account for over 95% of the phone calls and e-mails we have received in regards to Preset 10 installations.

There are five primary areas to be covered:

- Physical electrical box issues
- Power supply problems
- Cabling
- Configuration
- DMX compliance

Physical electrical boxes

The Preset 10-A fits into many single gang electrical boxes, but not all of them. We had to make a compromise between ease of installation, aesthetics, and ease of use. While we could have made the Preset 10 so that it would fit in *any* single gang box, the people who use the station every day would have a very difficult time locating the buttons and identifying which preset is active. We tried to keep the buttons and LEDs close enough together to work in many single gang boxes and simultaneously keep the end users happy. We had to decide whether we would make the installer's job a little challenging one time or to make the users life difficult every day. We leaned in the direction of the user figuring that once you are familiar with the mounting limitations, you would be prepared for the next one. We have modified the shape of the PCB over time to ease installation. The board has gotten as small as it possibly can be and we have cut the corners off at 45 degrees to further reduce the opening required.

Electrical boxes that are known to work include:

Amp 558251-1
Amp 558251-2
Amp 558251-3
Amp 558251-4
Amp 558251-5
Raco Handy Box #670RAC
Wiremold 558251-X
Wiremold BW35 White
Wiremold B35V5748 Ivory
Hubble DRUBKITAC (DIN rail mounted box)

We also have sections of our web site dedicated to mounting solutions and known-workable boxes. They can be found at: <http://www.dfd.com/p10a-an2.html> and <http://www.dfd.com/pdf/p10a-ap0.pdf> .

The depth of the electrical box is not very critical. The size of the front opening must be large enough for the circuit board to fit. The critical dimensions are provided on our web site at: <http://www.dfd.com/pdf/p10a-dwg.pdf>

Power supply

The Preset 10-A requires low voltage power to operate. The power source should be between 9 and 15 volts AC or DC. The Preset 10-A can be operated at 24VDC, but it is not recommended to do so. The power supply regulator heat sink will get *very* hot and

significantly shorten the life of the product.

The Preset 10-A requires as much as 120mA to operate. The exact amount of current needed depends on the DMX line termination. If the model XFMR from Doug Fleenor Design is being used, as many as four Preset 10-A stations can be powered from the transformer. If more stations are present, install an appropriate number of transformers and cable each group of stations to the closest transformer or power supply.

Cabling

This area accounts for nearly all problems which are perceived to be Preset 10 issues. There are a few important points to consider:

- DMX wiring must be done with appropriate cable. Microphone cable and common “low voltage control” cable is not acceptable. Acceptable cables include Belden 9829 and Belden 9729 (or their exact equals).
- CAT5 cable can be used, but is not recommended. CAT5 cable uses solid conductors which are very fragile and have proven to be unreliable for use with Preset 10 stations.
- DMX cabling **MUST** be connected in a daisy chain topology. Multiple “home runs”, “T”, and “star” wiring configurations are not acceptable.
- The last device at the end of the DMX daisy chain cabling **MUST** be terminated. A terminator is a 120 ohm resistor between the data plus and data minus signals.
- Be sure to insulate the drain wire so that it can not come in contact with the electrical box or components on the Preset 10.

If these cabling practices are followed, the system will work. Systems that have seemingly random problems, blinking LEDs on the panel, failure of slave stations to communicate, and failure to take or relinquish control properly are all indicators of poor wiring practices.

Configuration

Each Preset 10-A has 4 jumpers on the back. Note that these jumpers are numbered from bottom to top as JP1 through JP4. Each system is allowed to have **ONLY ONE** master station. There can be any number of slave stations. If the jumpers are set by following the jumper table in the manual, the stations will work. Any station can be configured as the master. It does not need to be at the beginning of the daisy chain.

DMX compliance

We have found a number of lighting fixtures and dimmers which do not work well with the Preset 10-A. In **ALL** cases, we have determined that the fault is with the fixture or dimmer. The problem devices are not compliant with the DMX512 standard. Problems include the inability of the device to deal with allowable signal timing and devices which do not check the DMX “start code” byte as required by the standard. The result of these issues can be random flickering, a regular “pulsing”, or an apparent complete lack of control from the Preset 10. In some situations we can make adjustments to work around these issues, but most often the solution is the addition of our DMX DECELERATOR between the Preset 10 and the first problem device. The DMX DECELERATOR filters and re-times the DMX signal to allow the non-compliant devices to operate.