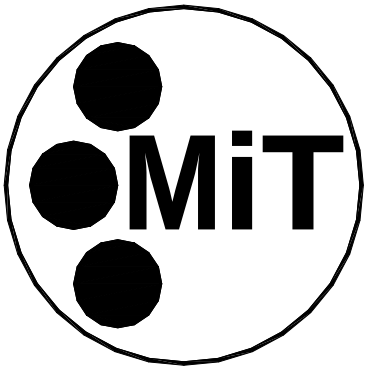

MOVING iMAGE TECHNOLOGIES

INSTRUCTIONS

FOR

INSTALLATION, OPERATION, AND MAINTENANCE

OF

IS-20D Power Manager

Part number A000296-xxx & A000304-xxx

Manual Version 1.0

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Manual
IS-20D POWER MANAGER

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1. INTRODUCTION

1.1 SPECIAL NOTICES

Two kinds of specific notices are used within this manual to emphasize information.

1.1.1 Warning

WARNING

WARNING: Indicates the presence of a hazard that can cause personal injury if the hazard is not avoided.

1.1.2 Caution

CAUTION: Indicates the presence of a hazard that can cause damage to equipment.

1.2 SAFETY

- ✓ Always disconnect the AC power at the building load center before working on anything inside the unit.

2. GENERAL DESCRIPTION

The MiT model IS-20D Power Manager accepts AC power from the building load center and provides receptacles for 120VAC loads (or 230V loads on International models). It provides switching capability for six channels, using heavy duty relays. The unit incorporates a 'soft-start' function on each of the six switched channels to reduce the current surge at turn-on and extend the life of the relay contacts. EMI filtering and surge suppression are included on all 6 channels.

The unit is housed in a 2U rack-mount enclosure. The unit may be mounted at various locations in a building between the load center and the equipment to be managed.

There are two different versions of the unit, depending on the specific voltage requirements: 120V and 230V. The 120V version uses standard NEMA 5-20R type duplex receptacles, the International version has IEC 320 C13 type receptacles.

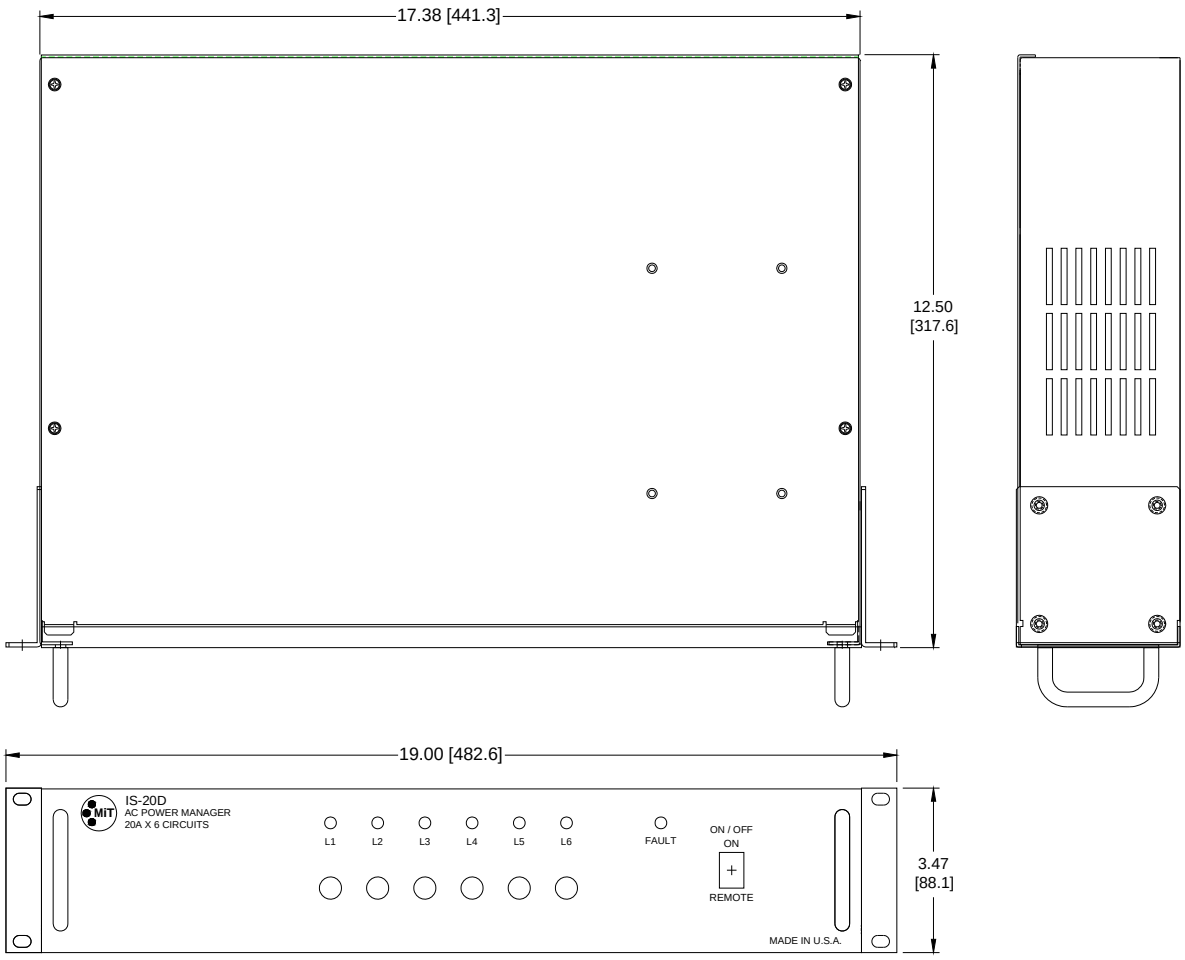

Figure 2-1: Outline

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3. INSTALLATION

CAUTION: Users are urged to read this instruction manual thoroughly and understand the procedures described herein before installing the system.

3.1 Electrical Wiring

CAUTION: National and Local electrical codes should be observed at all times.

Note: The MiT IS-20D AC Power Manager is intended to be installed by licensed electricians or other personnel with appropriate training. **The technical information in this manual is provided for use by certified electricians and other qualified personnel ONLY**.

3.2 AC Supply Connections

The unit accepts up to six (6) 120V or 230V AC power feeds, depending on the version ordered. The unit is intended to be permanently hard-wired when installed. Approved EMT or flex conduit and fittings must be used to route the wires to the unit. Knockouts are provided in the enclosure to facilitate connections. Terminals are provided to land 6 'Line' connections, 6 'Neutral' connections, and up to six ground wires.

Note: All neutral connections are bussed together inside the IS-20D unit, so they must be sourced from the same transformer and preferably the same load center.

Note: The ground connections are also bussed together at a common grounding bar inside the unit. Only one ground wire to the unit should normally be needed, however your regional electrical codes might require a ground wire for every 'Line' connection. It is the installer's responsibility to install the unit in accordance with all electrical codes.

AC supply connections are made at TB1 by removing the top cover of the unit. Figure 3-1 shows the connection points. The six circuits may be connected or not, as needed. (Note: if any channel is not supplied with power the unit will continuously indicate a fault condition for that channel).

Internal power is derived from the AC input for Channel 1, so that connection is required for the unit to operate.

The wire used to route power to the unit should be AWG #12 or #10. Note: The largest gauge of wire the terminal blocks will accept is AWG #10. A knockout for a 1.25" conduit fitting is provided for routing the AC wiring.

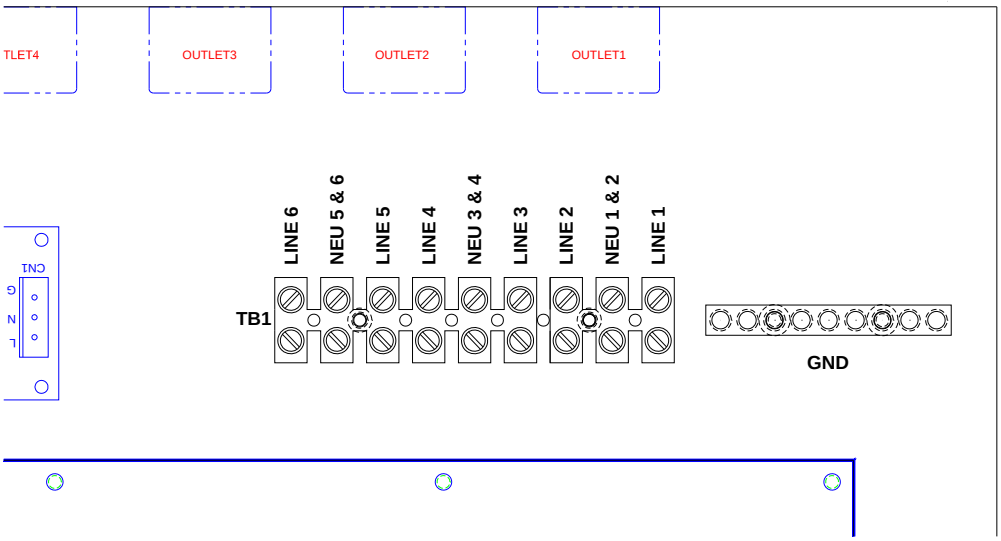


Figure 3-1: AC Input Connection
(cover removed)

3.3 Control Connection

The IS-20D allows the power for the 6 switched loads to be cycled on and off remotely. This on/off control may be done with a network connection or a dry contact closure from an automation device.

To control the unit over a network, connect the network cable to the RJ-45 jack on the PC board attached to the cover. You will need to remove the rear upper cover from the chassis to access the connector. Refer to Section 4 for more information about network control.

To control the unit with a dry contact closure, connect the two control wires to TB2 pins 1 (ON) and 2 (COM) (see Figure 3-2). When pins 1 and 2 are connected together the unit will sequentially power on all 6 outputs. When the connection between pins 1 and 2 is removed, the unit will sequentially power all outputs off. The controlling device must be rated for 12V, 5mA. Pin 3 (FAULT) is an output from the IS-20D unit that reflects the Fault status.

3.4 External Relay Connection

The IS-20D provides functionality for controlling two external relays in addition to the six internal channels. The relay coils may be directly connected to ‘Ext1’, ‘Ext2’ and ‘Com’ on TB2. The relays must have 12VDC coils, no separate power supply is required.

Note: There is no feedback available from external relays so no fault status will be reported for those two channels.

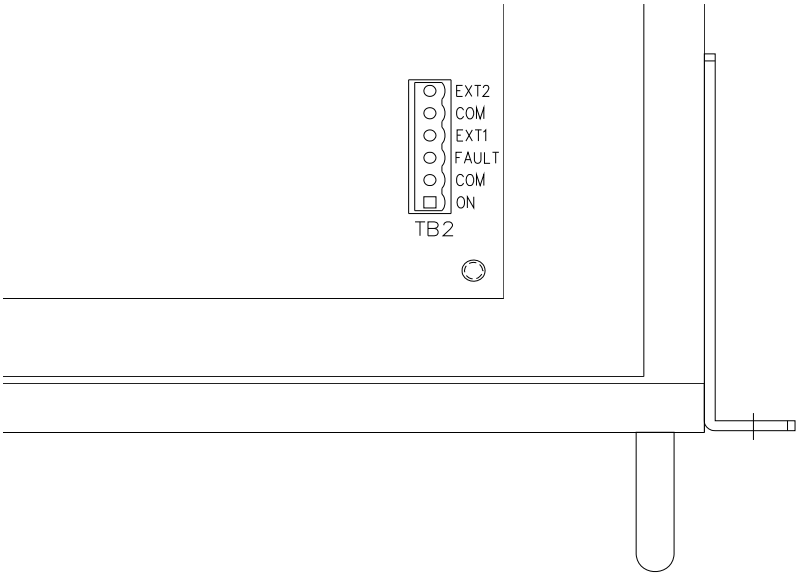


Figure 3-2: I/O & Control Connections

3.5 Mechanical mounting

Once the electrical connections are made the unit may be installed in a standard 19” equipment rack. The unit may be mounted to a wall if desired. In this case the rack mounting brackets may be removed from the sides.

4. NETWORK CONFIGURATION

4.1 LAN Setup

In order to communicate with the IS-20D unit via a Local Area Network you will have to configure the IP address of the unit. Units are configured at the factory with the IP address set to a default value of 192.168.10.21. The IP address is indicated on a label on the outside of the IS-20D chassis.

Note: Please contact MiT Engineering if you would like your IS-20D unit(s) set to a specific IP address at the time of production.

The IP address may be changed by the user after installation. MiT recommends changing the configuration using Telnet.

Procedure to set IP Address:

From the Windows Start menu, click RUN and type ‘cmd’ or type ‘cmd’ in the ‘Search programs and files’ box (you may also use a terminal program such as HyperTerminal, TeraTerm, or equivalent). When the command line window appears type the following:

telnet x.x.x.x 23

Where x.x.x.x is the IP address indicated on the label on the IS-20D chassis.

The port number is 23 (the default).

1. Press enter key again and the word "hello" will appear on display.
2. Press enter key one more time and the prompt "/>" will appear on display.
3. Type ‘ipconfig -a y.y.y.y -m 255.255.255.0’ and press Enter. Where y.y.y.y is the new IP address.
4. Type ‘exit’ to close the command prompt window.

5. IS-20D CONFIGURATION

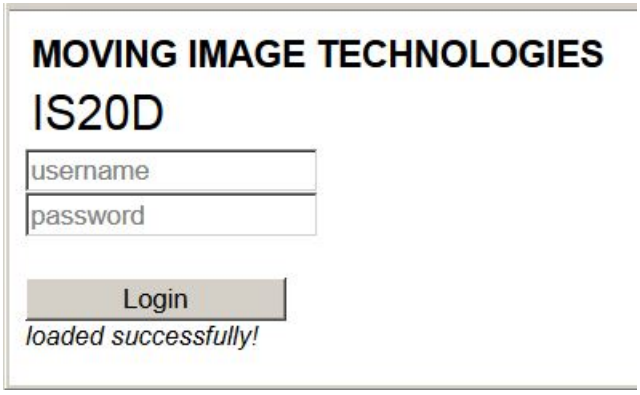
5.1 Setup

Use a web browser to connect to the following web page:

http://x.x.x.x

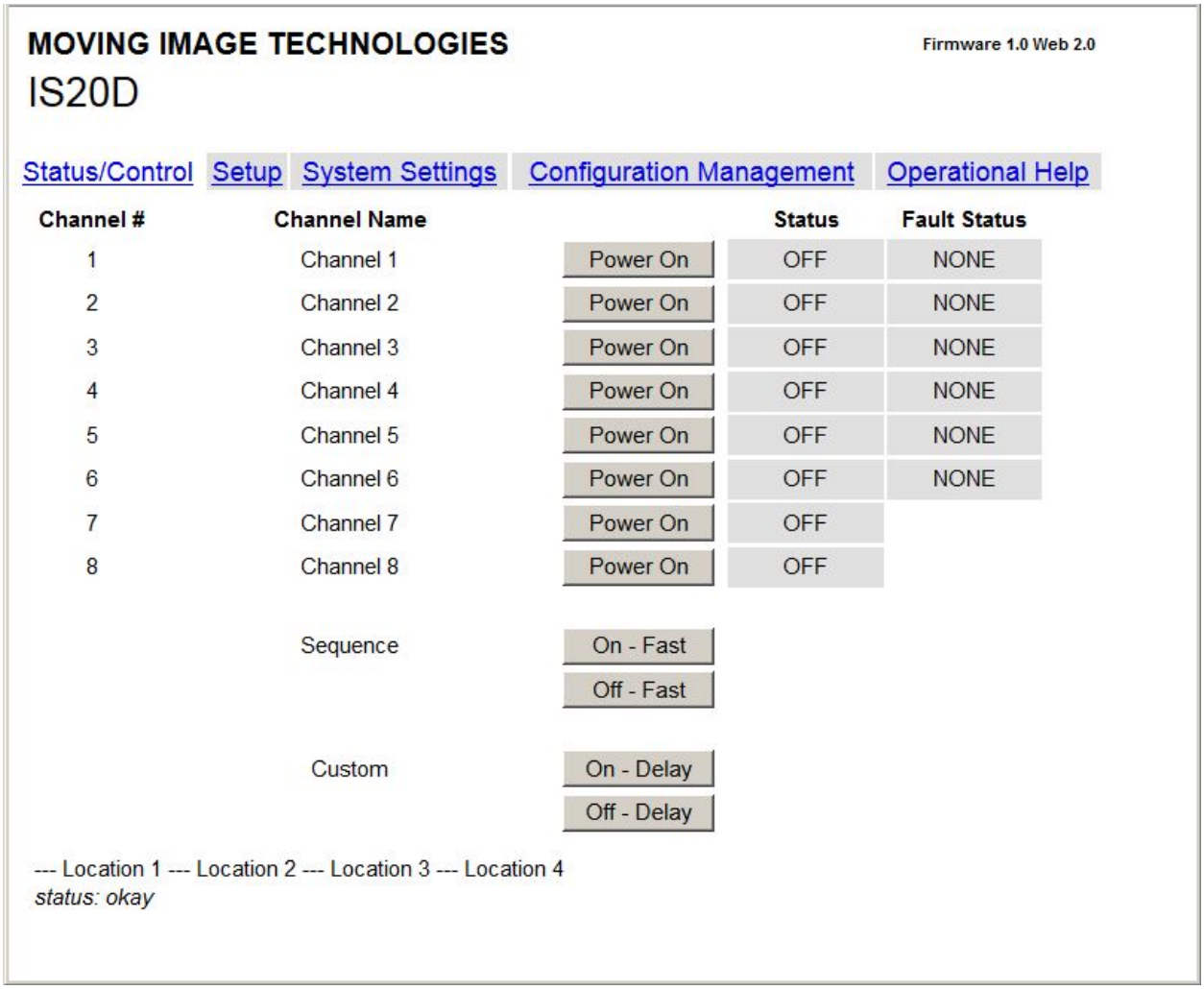
where x.x.x.x is the IP address of the IS-20D.

The login dialog box will appear, enter ‘admin’ for the User Name and ‘admin’ for the Password, then click the ‘Login’ button:



After logging in the command buttons will be enabled.

A web page similar to the following will appear:



Clicking ‘Power On’ will turn on the power for that channel. The status of the channel will be shown by the ‘Status’ and ‘Fault Status’ indicators. The text on the button will change to ‘Power Off’ to show its new function. Now clicking it will turn off that channel.

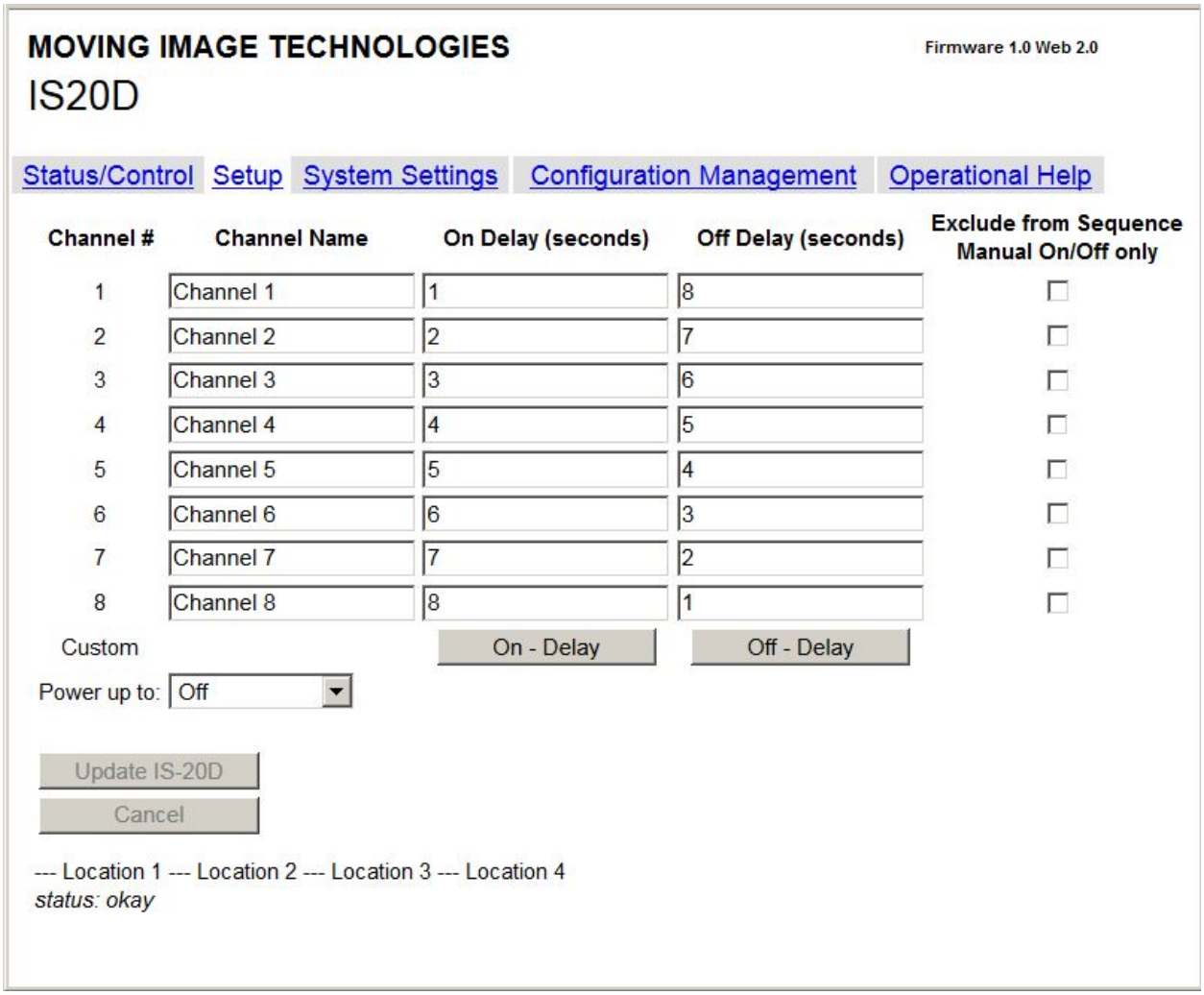
Clicking ‘Sequence On - Fast’ will turn on all channels (1 through 8) with a one half second delay between each channel.

Clicking ‘Sequence Off - Fast’ will turn off all channels (8 through 1) with a one half second delay between each channel.

Clicking ‘Custom On - Delay’ will turn on all channels (1 through 8) using the custom delay values set on the Setup tab screen. The delays are relative to the time the button was clicked.

Clicking ‘Custom Off - Delay’ will turn off all channels (8 through 1) with the custom delay values set on the Setup tab screen. The delays are relative to the time the button was clicked.

Clicking the Setup tab will bring up the following screen:



Here you can define the Channel Name and the On and Off Delays. The delays are referenced to the time that the 'Custom On - Delay' or 'Custom Off - Delay' buttons are clicked, so the timing for each channel is independent of the others.

You can also define the state that the IS-20D will assume when AC input power is connected to Channel 1. Select from the drop down 'Power up to:' menu. The choices are:

Last State -- Whatever state the channels were set to when power was removed

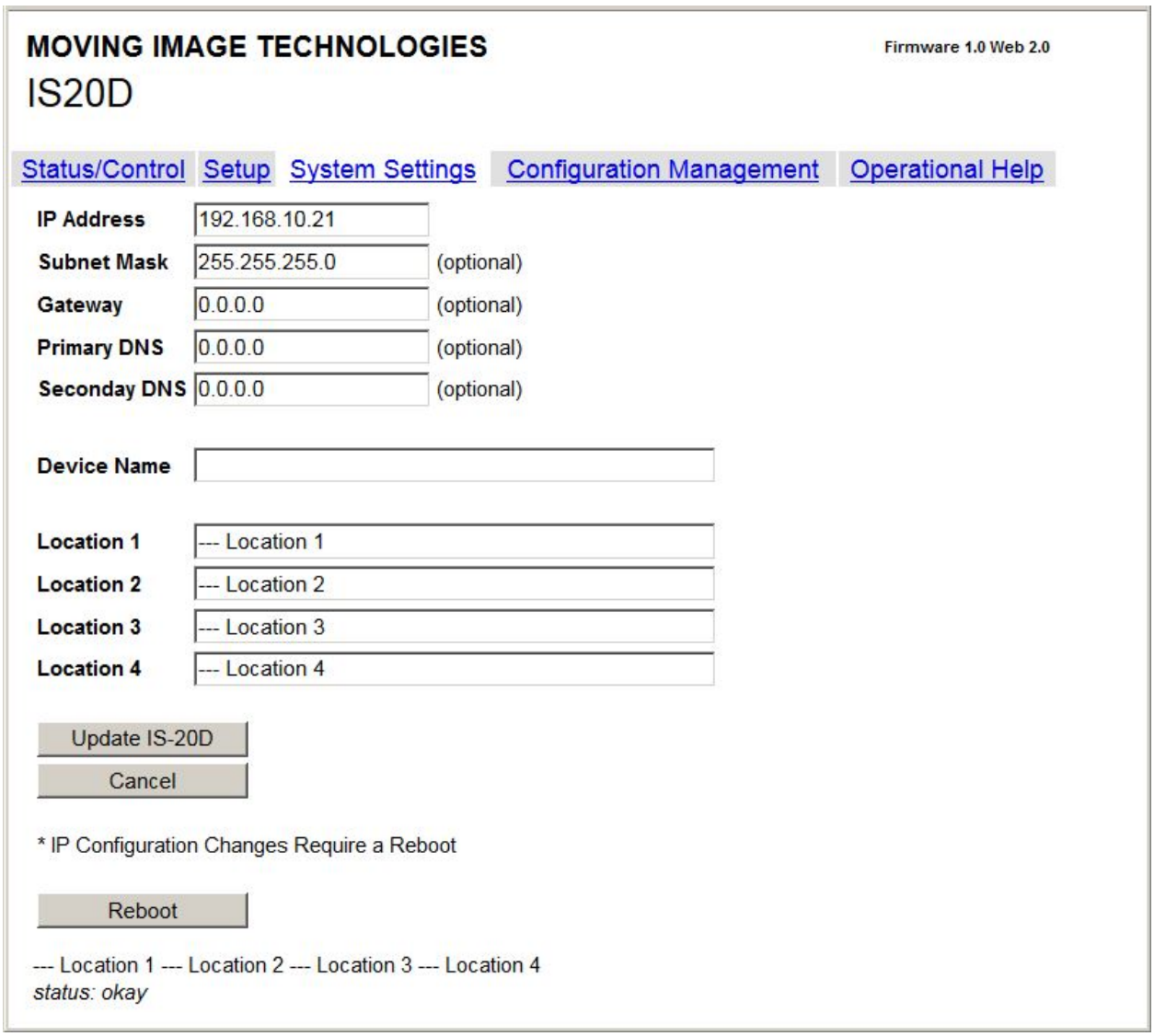
Sequence On -- All channels turn on in sequence, with delays (1 through 8)

Off -- All channels are set to off

Instant On -- All channels turn on immediately

You can preserve any changes made on this screen by clicking the 'Save' button. Clicking the 'Cancel' button will cause any changes to be ignored.

Clicking the System Settings tab will bring up the following screen:



The IP address, subnet mask and other related settings can be made here. These settings will not take effect until the IS-20D Channel 1 AC input power is removed and then reapplied.

An identifying name for this IS-20D can be configured in the 'Device Name' box.

Four location names can be set. The names will be joined together with a space between each Location and displayed after 'Site:' at the bottom of all tabs. The location name boxes will scroll if the length becomes too long to display.

Click the 'Save' button to save any changes. Clicking 'Cancel' will cause any changes to be ignored.

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6. OPERATION

6.1 Front Panel Controls

The controls on the front panel consist of a manual on/off switch, circuit breakers and status indicator LED lamps for each of the six circuits, and a fault indicator LED lamp.

6.2 Operation

To activate the unit, either turn on the manual switch on the front of the unit or command it on with the external device controlling it. No matter how it is controlled, after activation the IS-20D unit will sequentially activate the outputs over approximately 4-5 seconds. If using LAN control, see section 6.3 for commands.

The green lamps on the front panel indicate that power is activated on each output and that the surge suppression circuitry for that channel is active. If the green lamp is not lit it may be because the suppression circuit for that channel has failed, i.e. the circuit is no longer protected, however it may still be supplying AC power.

CAUTION: The AC receptacle may still be powered even if the green LED for that channel is no longer lit.

6.3 LAN On/Off Control

Note: if the unit is commanded 'On' with the manual switch, or by connecting pins 1 and 2 on the control input, it can **not** be turned off remotely using the LAN connection.

To command the IS-20D outputs on or off via the LAN connection, do the following:

1. Establish a TCP/IP connection to the Host address (192.168.10.21 or other IP address configured in section 4).

2. Port Number: 23

3. The following commands are available:

    power on X -- where X is the channel number (1 - 6)

    power off X -- where X is the channel number (1 - 6)

    sequence on -- turns on all channels in sequence, starting with channel 1

    sequence off -- turns off all channels in sequence, starting with channel 6

custom on -- turns on all channels using the programmed delay timing

custom off -- turns off all channels using the programmed delay timing

4. Terminate the command with a CR and LF character.

If you are controlling the IS-20D with a D-cinema server, here is an example of the setup procedure (based on the GDC server, others should be similar):

1. Add the IS-20D as a 'Network Socket'
2. Enter the IP address as previously configured
3. Enter the default port of 23
4. Transport control is TCP
5. Linefeed type is CR, LF. The 'None' option will not work.
6. Define the control cues. Enter 'IS-20D ON' for the name and 'sequence on' for the Value. Enter 'IS-20D OFF' for the name and 'sequence off' for the Value.
7. Enter the control cues in a playlist.
8. After these steps, Save. Now the IS-20D device will be available to work with the usual automation macros defined for playlists.

6.4 Fault Condition

If the red ‘FAULT’ LED is lit it indicates one of the following:

1. That one or more channels is not supplying AC voltage at that moment according to the commands/controls.

2. That the surge suppression components on one or more outputs has failed.

In a fault condition the ‘FAULT’ output pin on TB2 will be active, the red LED on the front panel will be illuminated and the information will also be available if the status is polled over the network connection.

The fault status commands via the LAN connection are:

fault status all -- reports the fault status of all channels
fault status X (where X is the channel number) -- reports the fault status of the specified channel

Appendix

Parts List, Schematics, and Warranty

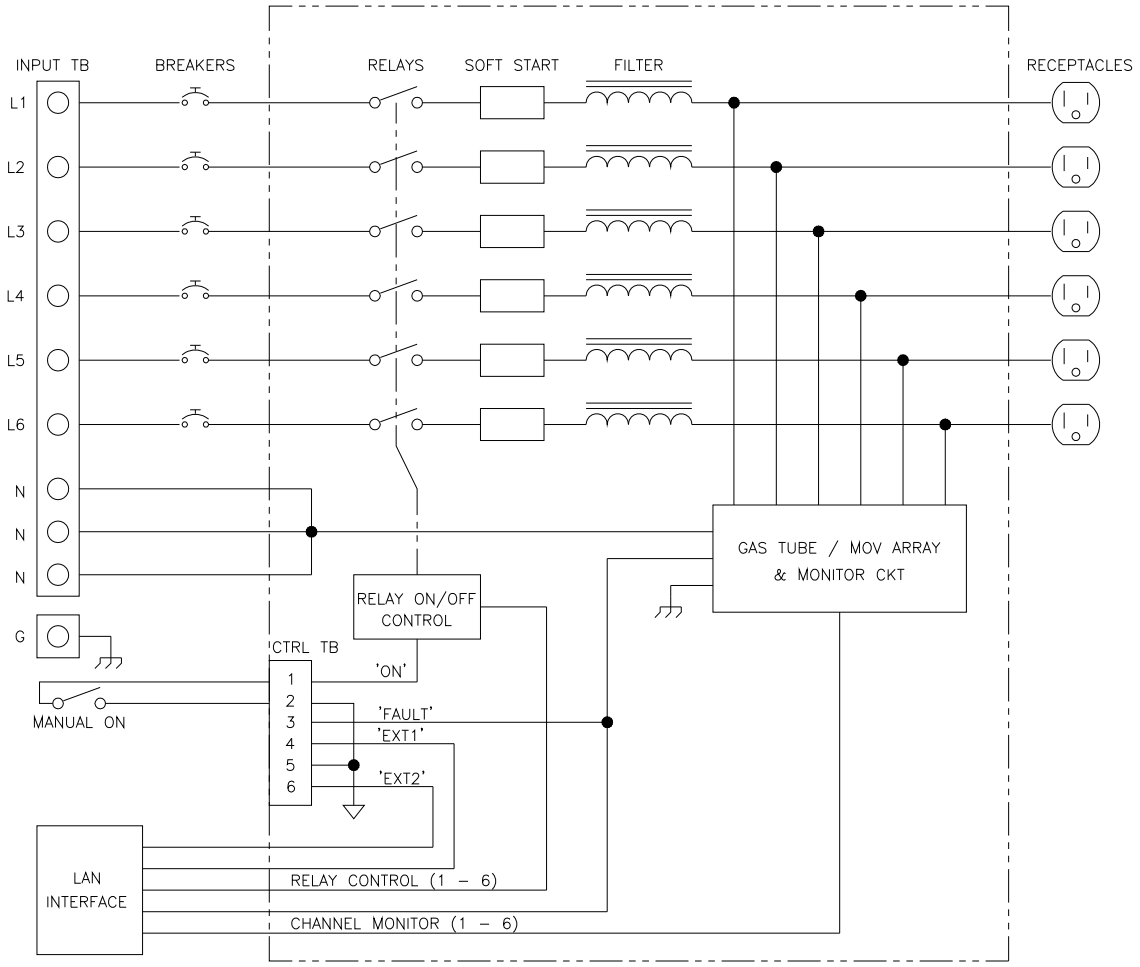
MODELS AND PART NUMBERS

A000296-001	IS-20D Power Manager, 120V
A000296-002	IS-20D Power Manager, 230V

REPLACEMENT PARTS LIST

A000294-001	PCB Assembly, IS-20D Power Manager
PE00078-020	Circuit Breaker, Push-reset, single, 20A
PE00562-020	Receptacle, NEMA 5-20R, Duplex, 120V, 20A
PE00533-001	Receptacle, IEC320 C13, 250V, 10A

Schematic Diagram



Standard Product Warranty

WARRANTY, DISCLAIMERS AND LIMITATION OF LIABILITY

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This warranty is subject to change at any time without notice.

CONTACTING MiT

To order parts or request information from MiT, use the address, telephone number, or fax number given on the inside front page of this document. When contacting MiT be prepared to provide:

- Model and serial number.
- Part name and part number, as shown in this manual.
- Original Purchase order number.

The purchase order number is essential for replacement parts requested under warranty. MiT issues credit for defective parts received. Please request a Return Authorization number from MiT for any defective parts.