

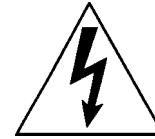
ProSwitch

Operation and Technical Manual



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IMPORTANT SAFETY INSTRUCTIONS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Warning! To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

SECTION 2. INSTALLATION

WARNING!

Static Sensitive Connectors! During the installation process and whenever changing cables to the Knox ProSwitch inputs and outputs, use extreme caution to avoid conducting static electricity to any inputs or outputs including video, audio, and RS232.

DC Offset Warning! Connect standard video and audio inputs and outputs only. Do not connect input or output signals with a positive or negative dc offset.

Chassis Ground is Earth Ground Do not connect video or audio cables with induced or direct-connection potential on the shield.

2.1 INTRODUCTION

This section provides the information required for installation of the ProSwitch into its operating environment.

.... CAUTION

The ProSwitch is designed to work in standard video and audio systems. Operation in other environments may harm the ProSwitch or associated equipment.

2.2 UNPACKING AND INSPECTION

Unpack the ProSwitch carefully and verify that the serial number matches the number quoted on the packing list. Before installing it into a system, check the outside of the unit carefully for signs of damage and check that none of the fasteners have come loose. Check that the power module is also present and marked for use with the ProSwitch product.

2.3 INSTALLATION

The ProSwitch is designed to be mounted in a standard 19" rack panel; it is 5.25 inches, or three standard units, high. Choose a space in the rack which is convenient for all the cables and mount the unit using standard rack bolts. Connect the output of the ProSwitch power unit to the power connector at the right rear (as viewed from the back of the panel) of the ProSwitch and plug the power unit into a grounded AC power outlet of the voltage and frequency specified on the power unit. There is no power switch on the ProSwitch; it is designed to be ON at all times. (If it is desirable to have the ProSwitch powered down regularly, connect the power module to a switchable AC power strip.)

2.4 VIDEO CONNECTIONS

Connect up to sixteen (eight for the GAMMA, DELTA, and EPSILON versions) video sources (cameras, videocassette players, RF demodulators, still-stores, character/graphics generators, etc.) to the input BNC or Y/C connectors marked VIDEO INPUT. Inputs are automatically terminated in 75 ohms. You may terminate unused outputs in 75 ohms.

Connect one or two destination devices (monitors, VCRs, LCD projectors, displays, RF modulators, etc) to the BNC or Y/C connectors marked VIDEO OUTPUT. Be sure that all destination devices are terminated at 75 ohms.

Do not connect a SOURCE of video to any of the video OUTPUT connectors.

2.5 AUDIO CONNECTIONS (ALPHA or BETA versions only)

Connect up to sixteen unbalanced or balanced audio sources (mikes, videocassette players, RF demodulators, tape/CD players, etc) to the left and right channel RCA or Phoenix connectors marked AUDIO INPUT. Inputs are high impedance (100K) for unbalanced sources, or 600 ohm (bridging) for balanced sources.

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ProSwitch ROUTING SWITCHERS

Connect one or two audio destination devices (amplifiers, VCRs, tape/CD recorders, RF modulators, etc) to the left and right channel RCA or Phoenix connectors marked AUDIO OUTPUT. Devices may be terminated with a 1Kohm load for unbalanced destinations, or 600 ohms for balanced destinations.

Do not connect a SOURCE of audio to any of the audio OUTPUT connectors.

For balanced audio units, the Phoenix connectors may be removed while making the screw connections.

When installing balanced audio connections, use the center pin for the common or ground wire. The top or bottom pin may be used for either + or -, however, the connections must be consistent throughout.



2.6 RS232 CONNECTION

The ProSwitch can be controlled through its RS232 port. To use an external controller, connect a source of RS232 data to the 9-pin connector on the rear of the unit. The ProSwitch is wired as a data terminal; that is, data in goes to pin 3, data out from pin 2, and pin 5 is common (ground). A direct connection from a PC compatible usually works well; select 9600 baud, 8 bits, no parity, and 1 or 2 stop bits.

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ProSwitch ROUTING SWITCHERS

SECTION 3. OPERATION

3.1 INTRODUCTION

This section explains in detail the operation of the ProSwitch using either the front panel pushbutton switches or the RS232 port.

3.2 CONNECTIONS

Connect audio and video sources as described in sections 2.4 and 2.5. There is no requirement that all inputs be used or terminated, but be sure that all outputs are terminated.

An output may be looped back to an unused input via short cables for the purpose of adding a delay, but be aware that if an output is then routed to that same input an illegal condition will exist and the output will oscillate at frequencies which could spill over onto other crosspoints.

3.3 ROUTING VIA THE FRONT PANEL SWITCHES

On powerup, input source number 1 is always connected to output destinations number 1 and number 2.

Select the output destinations (VIDEO1 and/or AUDIO1, VIDEO2 and/or AUDIO2) you wish to route to and push the corresponding front panel button(s). If routing both audio and video push both buttons down at once. The LEDs above the buttons you have selected will light. Then select the input source number you wish to route from and push that button.

To route a different input to the output(s) already selected, just push another input button number. To select a different output destination to be routed to, push and hold one or more output buttons--the LEDs will change to your new selection.

If you wish to route audio and video to both outputs simultaneously, hold all four buttons down; all four LEDs will light.

3.4 CONTROL VIA THE RS232 INPUT

A simple protocol allows all crosspoints to be set through the RS232 port. The RS232 port will accept inputs from a terminal, computer, or other software-driven control device. No handshaking is required, but when a valid crosspoint command is received the ProSwitch will answerback DONE; an invalid command will result in the message ERROR.

To route audio and video, send a four-, five-, or six-byte command in the form:

Bxxyy(ENTER),

where the first letter is B, V, or A for Both, Video, or Audio (the letter is not case sensitive), and

where x or xx specifies the output to be routed: 1, 01, 2, or 02, and where y or yy specifies the input number in the form 1-9 or 01-12.

3.5 READING SYSTEM STATUS

The crosspoint status can be read from the RS232 port at any time by sending the two-byte command:

D(ENTER)

The status report does not disturb the existing crosspoint pattern.

OUTPUT 1	Video 3	Audio 1
OUTPUT 2	Video 2	Audio 2

Figure 3.1 Typical Routing Map Status Report

An incorrect or meaningless command will cause the word ERROR to be reported.

SECTION 4. MAINTENANCE

NOTE: Maintenance of the ProSwitch should be performed by qualified service people only.

4.1 INTRODUCTION

There is no routine maintenance for the ProSwitch.

4.2 JUMPER OPTIONS

Three two-pin wire jumpers, WJ1, WJ2, and WJ3 are located on the printed circuit board, accessible by removing the rear cover of the unit.

WJ1 is used to set the input range of the ProSwitch: for 4 or 8 input units the jumper is OFF; for 12 or 16 input units the jumper is ON.

WJ2 is used to set the number of outputs: for 2 output units the jumper is OFF, for 1 output units the jumper is ON.

WJ3 is used to set the baud rate: for 9600 baud (the factory setting) the jumper is OFF; for 1200 baud, the jumper is ON.