

Kodak Ektapro Remote Control



An easy to use remote control
for 1 or 2 Kodak Ektapro projectors
and 1 computer running presentation software.

Remote Control for Ektapro Slide Projectors and "Power Point" Computer

- Very simple forward/back controls at the lectern.
- Additional basic functions provided for the A/V operator.
- Cable based for maximum reliability. No infrared or radio interference and dropout problems. No flat batteries.
- Uses common 3 pin XLR microphone cables for network connections. Will also run on CAT5 computer cable.
- Only one cable to the lectern for control of up to 3 devices.

The system consists of 5 units.

- 1: Lectern Unit and remote control buttons.
- 2: One Projector Interface unit for each of two projectors.
- 3: Power Point computer interface.
- 4: A/V operator's Master Unit.

The 4 remote units.



- Top row: Lectern unit and 3 remote control buttons.
Centre row: 2 projector Interface units.
Bottom Row: Power Point computer interface.

The remote units are interconnected by 1 cable that is looped from unit to unit. They may also be star wired.

Each remote unit also connects to another peripheral such as a projector, lectern buttons or Power Point computer.

Boxes are die cast aluminium and are powder coated in satin black.

Lectern Unit

The Lectern Unit comprises of an interface unit and between 1 and 3 lectern top buttons.

The lectern top buttons provide very simple forward/back control. No unnecessary clutter. KIS theory: Keep It Simple.

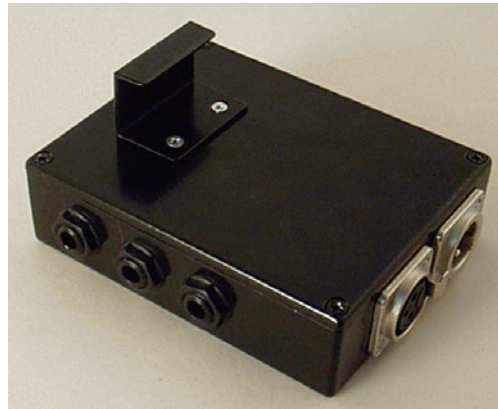
A button unit is used for each projector and a third for presentation software.

Each button unit has an LED that indicates when a forward or reverse command has been received by the remote destination.

Holding a button down will only advance one slide. It doesn't autorepeat and inadvertently advance your whole slide show.

One, two or three buttons units may be connected to the Lectern Interface Unit as required. The button units connect via a 1 metre long cable and 6.5mm TRS connector.

The Lectern Interface unit mounts behind or under the lectern and includes LED monitoring of cable connections.



Mounting bracket on the rear of the Lectern Interface Unit hooks over the front panel of Lectrum brand lecterns.

Projector Interface Unit

This unit connects to a Kodak Ektapro projector's P-Bus serial port. Connection is made using a short (1-3 metre) 9 pin D lead. These are commonly sold as serial mice extension leads.

There are 2 status LEDs on the Interface Unit.

One monitors the cable connections on the 3 pin XLR network, and the other monitors the serial connection to the projector.

Each of the two Projector Interface Units are marked Projector 1 and Projector 2 respectively and correspond with Slide 1 and Slide 2 Lectern buttons.

The address selection switch on the Ektapro projector may be set to any position as it is not used.

Not all Kodak Ektapro projectors support all features. For example, the 4010 & 4020 don't support Auto Focus on/off. The 5020, 7010, 7020, 9010, 9020 models support all features required by this system. All models support the fundamental features such as slide forward/reverse, manual focus in/out and "go to slide zero".

Power Point Computer Interface

Provides forward/back control for presentation software such as Microsoft's Power Point.

A specially modified P/S2 keyboard connects between the 4 pin XLR connector on the Power Point Interface Unit and the target computer's keyboard socket.

All keys on the keyboard are 100% functional and it may be used as a regular keyboard. An optional USB keyboard is available which works with either IBM or Mac computers.

The modified keyboard approach was decided upon, as it does not require any additional software to be installed. It is independent of operating system and software revisions. It is very hard for Bill Gates to stuff up this interface :)



Modified keyboard showing additional LEDs and cable.

A/V operator's Master Unit



Master Unit

Master Unit functions include:

- Slide forward/back
- Focus in/out
- Autofocus on/off
- Standby on/off
- Go to slide zero
- Lamp failure indication
- Link both projectors for simultaneous slide forward/back. Individual control for each projector is still available at the master unit.
- Monitors the presence of Lectern and Projector Units as well as the projectors themselves.
- Monitoring of interconnecting cables for shorts and opens.
- Power supply for the entire system.

Housed in an all metal 1U 19" rack case.

A large drawing of the whole system is on the following page.

AV operator's master unit

Projector 1

- Key press
- Comms fault
- Lamp fault
- Standby
- Zero
- Auto focus
- Slide
- Rev

Projector 2

- Key press
- Comms fault
- Lamp fault
- Standby
- Zero
- Auto focus
- Slide
- Rev

Ektapro Remote Control

- Power
- Lectern fault
- Link 1+2

Made in Australia by
LEON AUDIO
http://www.LeonAudio.com.au

Power Point Computer

Network OK
Power Point Remote Control

Modified 104 Key Keyboard

Network IN/OUT

Lectern

3 x TRS sockets

Network OK
Lectern Remote Control

Projector 1 Buttons
Projector 2 Buttons
Power Point Buttons

Network IN/OUT

Slide 1
Slide 2
Power Point

Present Forward Back

Projector 1

Network OK
Ektapro Remote Control
Projector 1

Network IN/OUT

DB9

XLR Network

Projector 2

Network OK
Ektapro Remote Control
Projector 2

Network IN/OUT

DB9

XLR Network

Overview of the system

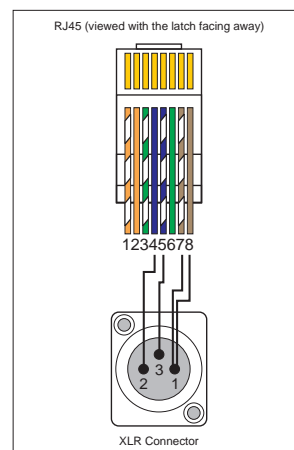
Interconnection

- Uses readily available standard 3 pin XLR microphone cables.
- Transformer balanced for maximum interference rejection and high noise immunity.
- Designed to run in electrically hostile environments, such as venues with large quantities of light dimmers. 1km network length (dependant on cable capacitance). No terminators required.
- Daisy-chain, star & tee wiring supported.
- Will work with microphone leads wired incorrectly (i.e. pins 2 & 3 swapped).
- Several levels of software error traps to prevent false commands in the event of cable faults or severe interference. Very tolerant of "crackly" leads.
- Interface units can be wired up in any order anywhere on the network and can be connected/disconnected while the network is live.
- No limits on maximum or minimum cable segment lengths up to a maximum of 1km total length.
- Virtually immune to interference from mobile/cell phones.
- Will run down an audio multicore.
- The Master Unit is mains powered. All of the remote units are powered from the master unit via the same cable that carries the network data.

The system will run with any of the various units omitted if they are not required for a particular job.

The only limitation is that the master unit must be present as it contains the power supply and network control software.

An XLR to RJ45 adaptor will allow the use of CAT5 cable.



Suggested adaptor wiring

Unused wires on RJ45 pins 1,2,3 & 6 may be connected to XLR pin 1 if desired. This will lower the DC resistance of the Ground conductor and extend the maximum cable length.

Note:

CAT5 cable and connectors are mechanically inferior to professional grade microphone cable and XLR connectors.

Warranty

The Leon Audio Ektapro Remote Control is guaranteed for two years from date of original purchase against defects in workmanship and materials. If such malfunction occurs, the item will be repaired or replaced (at our option) without charge for materials or labour if delivered prepaid to THE LEON AUDIO COMPANY. Unit will be returned prepaid. Warranty does not cover finish or malfunction due to abuse or operation at other than specified conditions. Repairs by other than THE LEON AUDIO COMPANY or authorized agents will void this guarantee.



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