



Reduce risk of fire or electrical shock do not expose this product to rain or moisture.

NITEK®

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Rev.030309

Note: This installation should be made by a qualified service person and conform with local codes.

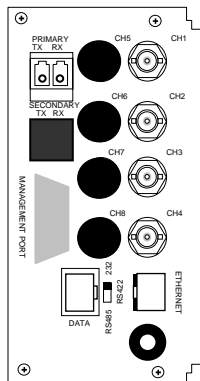
Installation and Operation Manual

This manual covers the following models:

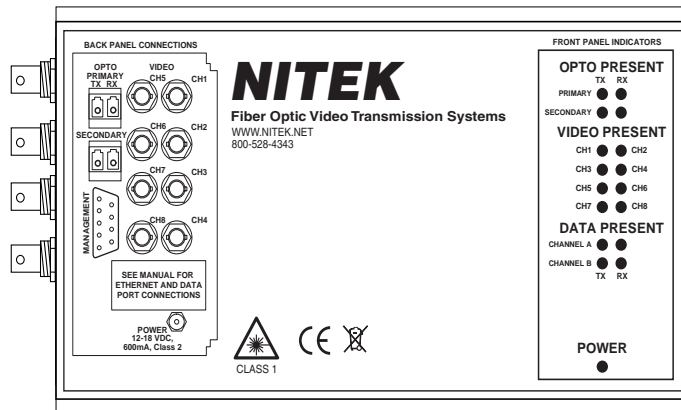
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FRS54111xS00, FRS54111xR00, FRS58111xS00, FRS58111xR00

Includes single fiber dual redundancy option addendum for the following models:

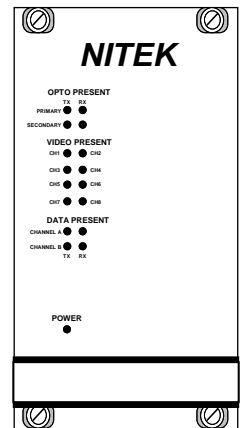
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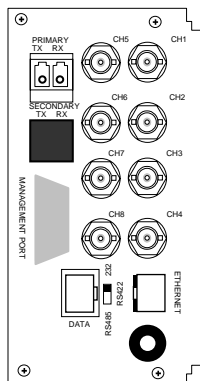
Back Panel



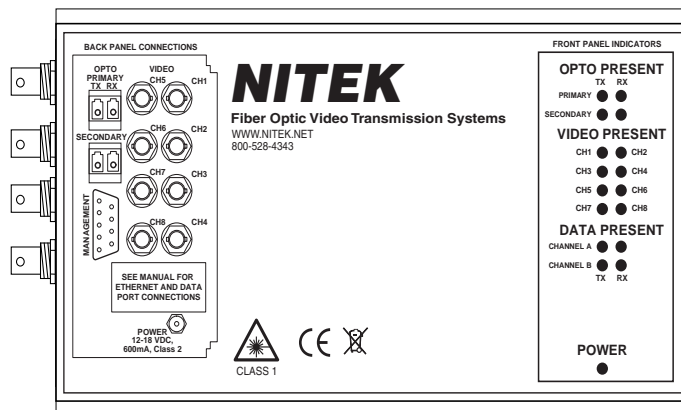
Stand Alone



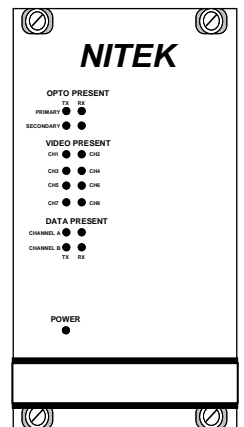
Rack Mount



Back Panel



Stand Alone



Rack Mount

Video Input Connections

Connector	75 ohm BNC socket
Input Impedance	75 ohm terminated
Input Level	1 volt p-p nominal
Frequency Response	10Hz to 5.75MHz

Fiber Connections

Primary OPTO Out

Connector	LC/PC
Primary Optical Out Power	-5dBm
Wavelength	1310nm
Optical Fiber	Single-Mode

Primary OPTO In

Connector	LC/PC
Primary Optical Sensitivity	-22dBm
Wavelength	1310nm
Optical Fiber	Single-Mode

Power Requirements

Power (Stand Alone)	12VDC to 18VDC / 600mA maximum
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Front Panel Indicators

Opto LEDs

Primary Opto	Green—transmitting Off—not transmitting
Secondary Opto (if equipped)	Green—transmitting Off—not transmitting

Video LEDs

Video Present	Green—video present
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Data Connections

Data Connector	RJ45
No. of Channels	2
Channel A Interface (if equipped)	On Board Data Interface—RS232, RS422 or RS485. Selected by slide switch above RJ45 connector.
Channel B Interface (if equipped)	Defined by ACX Interface Board.

Audio Connections

Input Impedance	600 ohm
Output Impedance	600 ohm

Auxiliary Ports

Alarm In	Contact Closure
Alarm Out	100V / 150mA max.

Ethernet Option

(if equipped)
If equipped, RJ45 will have LED indicators. This is a standard 10/100 Ethernet port.

Data LEDs

Channel A Data (if equipped)

Data Present TX (RS485/RS422)	Green—data high Red—data zero Off—tri-state or N/C
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Data Present TX (RS232)

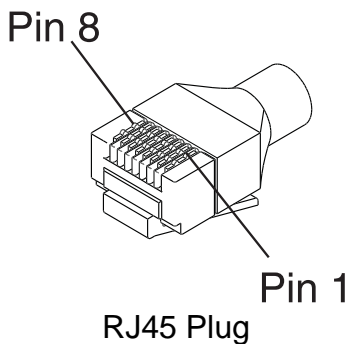
Green—data high Red—logic transitions Off—data zero

Channel B Data (if equipped)

Data Present TX	Green—data high Red—logic transitions Off—data zero
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Channel B Audio Data (if equipped)

Audio Present TX	Green—audio > -40dBm Red—audio > 0dBm (audio overload level+6dBm) Off—audio < -40dBm
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RJ45 ACX Interface Connections

RJ45 Pin No.	Channel A			Channel B	T568B Color Code Cat 5/6 cable
	RS485	RS422	RS232	Data Interface Board	
1		IN +	GND	OUT + IN - IN + OUT -	White/Orange
2		IN +	IN		Orange
3					White/Green
4					Blue
5					White/Blue
6					Green
7	IN/OUT +	OUT +	N/A		White/Brown
8	IN/OUT +	OUT -	OUT		Brown

Low Speed Data Operation

Data Channel A

Channel A allows for RS232, RS422 (full duplex, four wire) or RS485 (half duplex, two wire) interface depending on the position of the switch located above the RJ45 connector. The switch signifies the presence of a RS232/422/485 Data Interface Board. If there are LEDs on the RJ45 connector an Ethernet Interface Board is present.

The data input for both the RS485 and the RS422 modes detects a tri-state input condition by monitoring the differential voltage level across the input. A differential level below 120mV will be detected as a tri-state condition. A level above 120mV will be detected as a logic 1 or logic zero. **It is important to terminate the RS485 or RS422 input using 120 ohms if a pre-bias is present on the RS485 or RS422 input.** A large number of third party equipment manufacturers apply a pre-bias on their RS485 bus. This pre-bias is applied by pulling one side of the RS485 bus high (+5 volts) and the other side low (0 volts) using high value resistors within the third party equipment. In order to ensure that the NITEK equipment detects a tri-state condition, these resistors should have a value above 5k ohm. If the third party bias resistors are less than 5k ohm the bus can be double or triple terminated as required to ensure that a tri-state level is detected.

Data Channel B

Channel B interface is only present on a unit if an ACX Interface Board is installed. This data interface board can be any one of the following:

ACX Interface Options

Option	Description
0	No Interface
1	RS422/RS485
2	RS232
3	Audio
4	Contact Closure TX/RX
5	2 Contact Closures TX
6	20mA
7	TTL Data
8	FTT10A

Safety

The 5000 series of products uses a Class 1 laser system in accordance with IEC 60825-2.

It is always advisable to follow good practices when working with optical fiber systems. This includes:

- Do not stare with unprotected eyes at fiber ends or connector faces.
- Use only approved filtered or attenuating viewing devices.
- For other safety issues and advice on good practices associated with optical fiber systems see IEC 60825-2 or your local safety officer.

Stand Alone

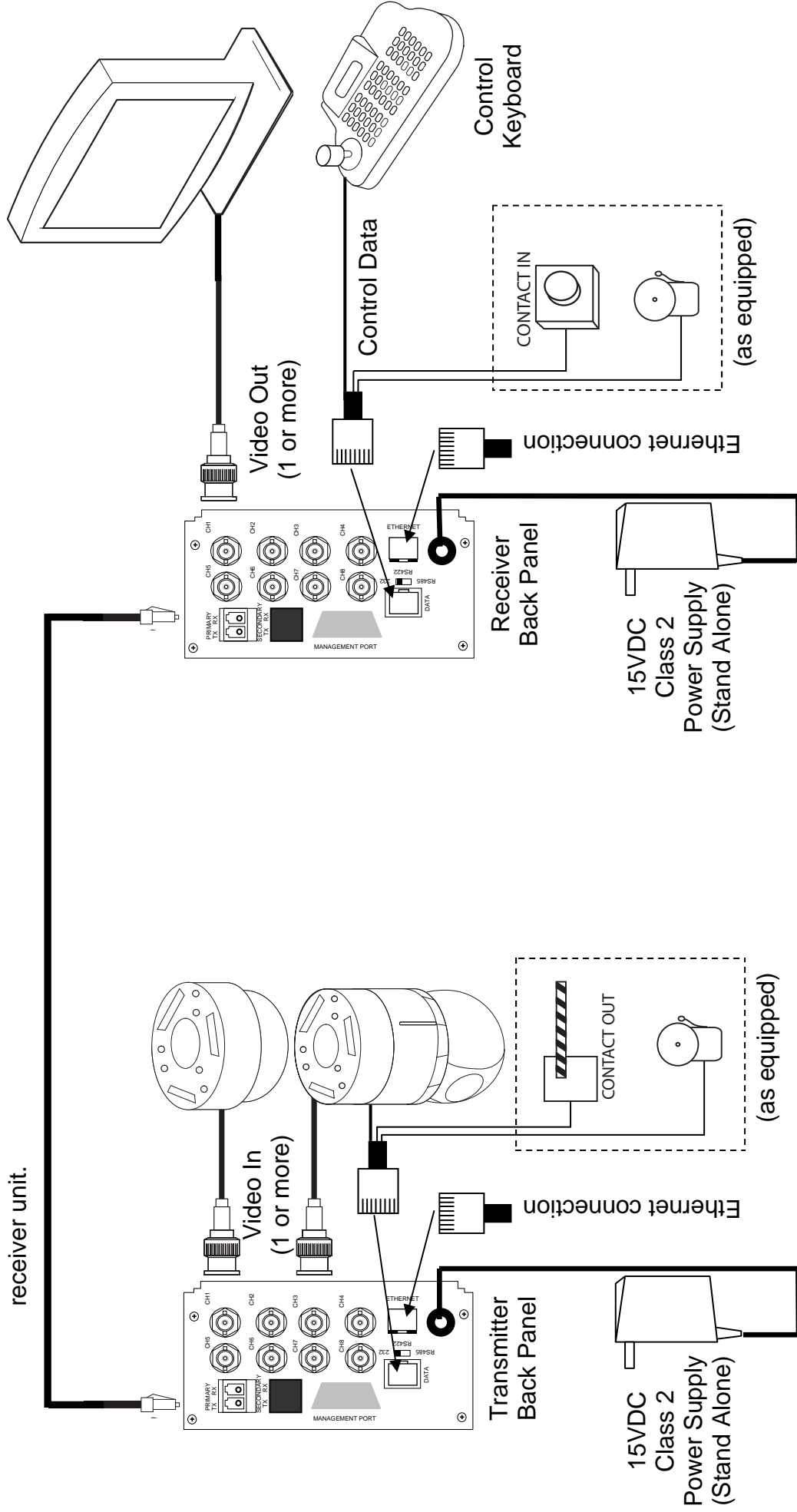
- 1) Mount unit securely to the wall using supplied mounting bracket.
- 2) Make electrical and fiber connections as illustrated below.

Typical Installation Diagram

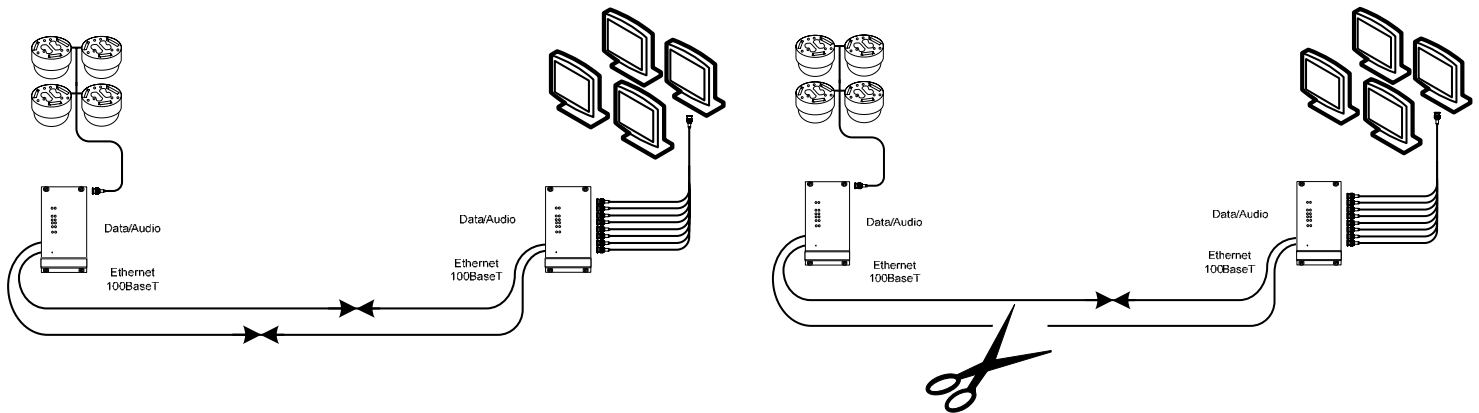
Rack Mount

- 1) Insert unit into fiber card rack and secure mounting screws.
- 2) Make electrical and fiber connections as illustrated below.

Single-Mode Fiber with LC Connectors.
Connect the TX of the transmitter to the RX of the receiver unit.



Addendum to cover Dual Redundancy Fiber Option



The dual redundancy option provides a secondary path to prevent communication losses in the event of a fiber failure.

For reliable dual redundancy a secondary fiber path should be routed separately from the primary path.

In the event of a cable break, all video, data/audio and Ethernet channels are redirected and transmitted over the secondary path.

Installation Instructions

Dual redundant fiber units have a Secondary fiber port. (see Back Panel figure) Dual redundant systems are available as single fiber systems (2 fiber connections) or dual fiber systems (4 fiber connections).

For Single fiber Dual redundant systems:

Connect the TX of the transmitter to the RX of the receiver and connect the TX of the receiver to the RX of the transmitter. There will be only a Primary Opto connector.

For Dual fiber Dual redundant systems:

Connect the TX of the transmitter to the RX of the receiver. There will be both a Primary and a Secondary Opto connector. Note, do not cross the Primary fiber connections with the Secondary fiber connections. There will be a two fiber connection to the Primary fiber ports and a two fiber connection to the Secondary fiber ports.

