



*VersiVision*

FVTM8A0xA / FVRM8A0xA

8-CHANNEL DIGITALLY ENCODED VIDEO

WITH

1-CHANNEL OF BI-DIRECTIONAL DATA

MULTIPLEXER

**USER'S MANUAL**

Revision B

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## **PROPRIETARY DATA**

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## **VERSITRON LIFETIME WARRANTY**

All VERSITRON products are covered by a **Lifetime Warranty** against defects in materials and workmanship. This coverage is applicable to the original purchaser and is not transferable.

We repair, or at our option, replace parts/products that, during normal usage and operation, are proven to be defective during the time you own the products, provided that said products and parts are still manufactured and/or available. Such repair/replacement is subsequent to receipt of your product at our facility and our diagnostic evaluation and review of the unit.

This warranty does not cover damage to products caused by misuse, mishandling, power surges, accident, improper installation, neglect, alteration, improper maintenance, or other causes which are not normal and customary applications of the products and for which they were not intended. No other warranty is expressed or implied, and VERSITRON is not liable for direct, indirect, incidental or consequential damages or losses.

In the unlikely event a warranty issue should arise, simply contact us at 302-894-0699 or 1-800-537-2296 or via email at [fiberlink@versitron.com](mailto:fiberlink@versitron.com) to obtain a Return Material Authorization (RMA) number, along with instructions for returning your product.

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## GENERAL INFORMATION

### Introduction:

The VERSITRON *VersiVision* FVTM8A0xA and FVRM8A0xA Series video and data transmitter and receiver support simultaneous transmission of 8-channels of 8-bit digitally encoded video and 1-channel of bi-directional data over one multi-mode or single-mode optical fiber. The units are universally compatible with major camera systems and support the RS-485 data protocol. Plug and Play design ensures ease of installation and electronic and optical adjustments are never required.

### Model Number

Unit Type	Model Number
8-Channels Digitally Encoded Video + 1-Channel of Bi-Directional Data Transmitter	FVTM8A0xA
8-Channels Digitally Encoded Video + 1-Channel of Bi-Directional Data Receiver	FVRM8A0xA

### Technical Specifications:

#### **VIDEO**

Video Input	2.0 volt pk-pk (75 ohms)
Input/Output Channels	8
Bandwidth	5 Hz - 8 MHz
Bit Resolution	8-bit
Differential Gain	< 2%
Differential Phase	< 1°
Tilt	< 1%
S/N Ratio	60dB (Weighed)

#### **DATA**

Data Interface	RS-485 (RS-422, RS-232 upon request)
Data Channels	1
Data Rate	0~300Kbps
Bit Error Rate	10 <sup>-9</sup>

<b>WAVELENGTH</b>	850/1310nm Multimode 1310/1550nm Singlemode
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<b>OPTICAL EMITTER</b>	Laser Diode
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<b>NUMBER OF FIBERS</b>	1
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## Technical Specifications (Cont.):

### **CONNECTORS**

Optical	ST
Video	BNC
Data	Terminal Block with Screws

### **GENERAL**

Power Supply	5VDC @ 2A
Size	5.98 x 5.12 x 1.95 Inches
Construction	Aluminum
MTBF	> 100,000 hours
Operating Temp	-35° C to + 65° C
Storage Temp	-45° C to + 85° C
Relative Humidity	0% to 95% (non-condensing)

### **INDICATOR**

Green	Video Sync Present
Green	Power On
Green	Data Transmit/Receive

## OPTICAL POWER BUDGET

Optical transmission distance is limited to optical loss of the fiber and any additional loss caused by connectors, splices, and patch panels.

### CAUTION!

The transmitter unit contains a laser-emitting diode located in the optical connector. This device emits invisible infrared electromagnetic radiation that can be harmful to human eyes. The radiation from this optical connector, if viewed closely without any protection, may cause instantaneous damage to the retina of the eye. Direct viewing of this LED should be avoided at all times.

Fiber	Wavelength	Transmitter	Receiver	Optical Power Budget	Max Distance
		Model Output	Model Sensitivity		
Multimode	850/1310 nm	FVTM8A03A -10 dBm	FVRM8A03A -24 dBm	14 dB	2 Km
Singlemode	1310/1550nm	FVTM8A05A -5 dBm	FVRM8A0x -26 dBm	21 dB	30 Km

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## INSTALLATION INSTRUCTIONS

### Installation Procedure

The VERSITRON *VersiVision* FVTM8A0xA and FVRM8A0xA video transmission systems series are preset for immediate use. There are indicator LEDs on the units for monitoring the real-time status of video, data and power. The following instructions describe the typical installation procedure and the function of the LED indicators located on each unit.

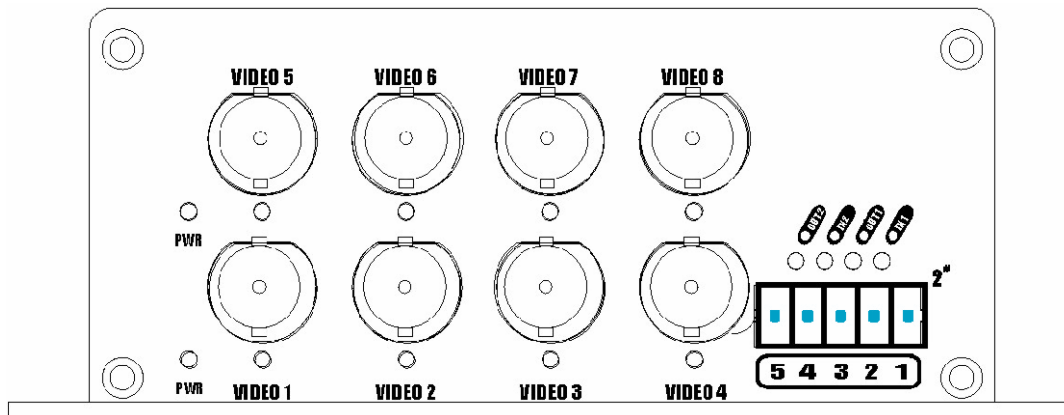
1. Connect the video source (camera) to the video input BNC connector on the transmitter unit (FVTM8A0xA) using coaxial cable.
2. Connect the video output BNC connector on the receiver unit (FVRM8A0xA) to the video monitor using coaxial cable.
3. Connect the fiber optic cable between the transmitter and receiver units.
4. Apply the power supply to both the transmitter and receiver units.
5. When the power is applied, the GREEN POWER LED will light, indicating the presence of operating power. The GREEN VIDEO and DATA LEDs will give an indication as stated on the following pages.
6. The system should now be operational.

## System Terminal Block Connections

The various input and output connections for the FVTM8A0xA and FVRM8A0xA series systems are as follows:

**Video Input or Output:** BNC Connectors

**Data Connection — Camera Site (Transmitter):**

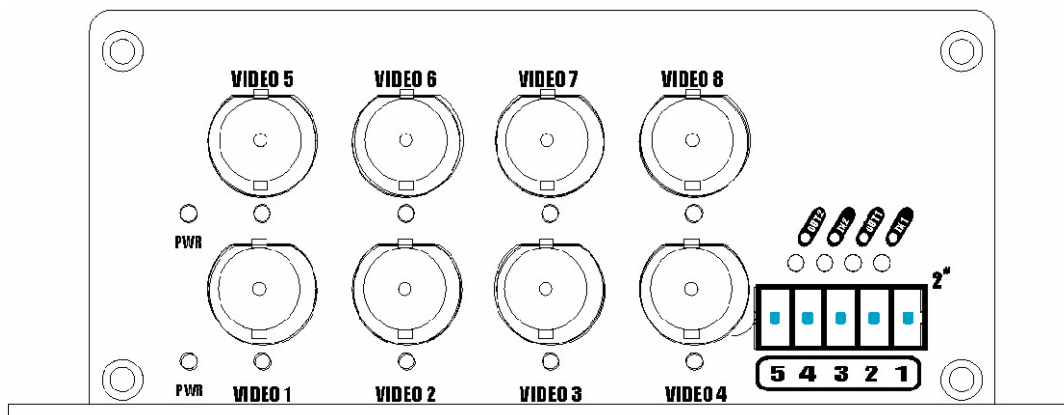


\*Front panel of FVTM8A0xA

### RS-485 2-Wire Connection (1-Channel Bi-directional)

- Pin 1 — RS485A
- Pin 2 — RS485B
- Pin 3 — GND

**Data Connection — Control Site (Receiver):**



\*Front panel of FVRM8A0xA



## RS-485 2-Wire Connection (1-Channel Bi-directional)

Pin 1——RS485A

Pin 2——RS485B

Pin 3——GND

### Indicator LEDs

The units have integral LEDs that are used to monitor the state of the unit. Each unit has one power LED and one VIDEO LED for each of the eight video connections. The other LEDs above the green terminal block blink at the rate of operating data. The indicator LEDs function as follows:

#### **TRANSMITTER and RECEIVER:**

**Power: ON:** (Green) Indicates that correct power has been applied

#### **Transmitter:**

**VIDEO: OFF:** Indicates no video detected on input BNC connector  
(No Video present on input BNC)

**ON:** (Green) Indicates video detected on input BNC connector  
(Video present on input BNC)

**DATA: OFF:** Indicates no data detected on the transmit data cable  
**Blinking:** (Green) Indicates data transmitted at the rate of the operation data.

#### **Receiver:**

**VIDEO: OFF:** Indicates no video present on output BNC connector  
(No Video present on output BNC)

**ON:** (Green) Indicates video detected on output BNC connector  
(Video present on output BNC)

**DATA1: OFF:** Indicates no data detected on the receive data cable  
**Blinking:** (Green) Indicates data received at the rate of the operation data.

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## TROUBLESHOOTING

### Optical Fiber

The VERSITRON *VersiVision* FVTM8A0xA and FVRM8A0xA video transmission systems series is available for most applications using multi-mode or single-mode optical fibers. Please be certain that the correct size and type of the fiber is being used for the particular transmitter/receiver combination.

Also be certain that the attenuation and bandwidth of the fiber optic cable being used is within the range of the system's loss budget specifications.

### General

Any dirt or dust may easily pollute or block the fiber from accepting or radiating light. Therefore, please try to keep the optical connector clear and always use the dust caps whenever the connector is exposed to air. It is suggested that the tip of the optical connector should be carefully cleaned with a lint-free cloth moistened with alcohol from time to time.

The status of any of the VIDEO LED should provide the first clue as to the origin of any operational failure. If the VIDEO LED on the receiver unit is off, it usually means that the fiber is broken or has too much attenuation.

Please also make sure that the transmitter and the receiver are not used in opposite positions.

If the system is still not working after examining the above possibilities, please contact our Customer Service Department for further assistance

### Data Link

Even when installed exactly as directed, it is possible that the data/audio function may fail to operate properly. If this problem occurs, first please check the data cable connection to the camera(s), and then check whether the data cable connector is firmly connected to the unit.

If the system is still not working after examining the above possibilities, please contact our Customer Service Department for further assistance.