



VersiVision

FVTM4A0xA/ FVRM4A0xA

MULTIPLEXER SYSTEM

- 4-CHANNELS DIGITALLY ENCODED VIDEO
- 1-CHANNEL BI-DIRECTIONAL DATA

USER'S MANUAL

Revision D

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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. Advance replacements are not provided as part of the warranty coverage.

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 to obtain a Return Material Authorization (RMA) number, along with instructions for returning your product.

CAUTION!

These devices contain 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.

Table of Contents

General Information	4
Introduction	4
Technical Specifications	4
Installation Instructions	6
Installation Procedure	6
Indicator LEDs	7
Terminal Strip Connections	8
Troubleshooting	9

GENERAL INFORMATION

Introduction:

The VERSITRON *VersiVision* FVTM4A0xA and FVRM4A0xA Series video and data transmitter and receiver support simultaneous transmission of four channels of 8-bit digitally encoded video and one channel of bi-directional data over one strand of multi-mode or single-mode optical fiber. The modules are universally compatible with major camera systems and support RS-485 data protocols. Plug and Play design ensures ease of installation and electronic and optical adjustments are never required.

Model Numbers:

Model	Function	Connector	Fiber Cable	Wavelength	Max Distance
FVTM4A03A	Transmitter	ST Simplex	MM	850/1310nm	3 Km
FVRM4A03A	Receiver	ST Simplex	MM	850/1310nm	3 Km
FVTM4A05A	Transmitter	ST Simplex	SM	1310/1550nm	30 Km
FVRM4A05A	Receiver	ST Simplex	SM	1310/1550nm	30 Km

Technical Specifications:

VIDEO

Video Input	2.0 volt pk-pk (75 ohms)
Input/Output Channels	4
Bandwidth	8MHz
Bit Resolution	8-bit
Differential Gain	< 1%
Differential Phase	< 1°
Tilt	< 1%

DATA

Data Interface	RS-485 (RS-422, RS-232 Optional)
Data Channel	1-Channel, Bi-Directional
Data Rate	0~300Kbps
Bit Error Rate	10 ⁻⁹

WAVELENGTH

850/1310nm Multimode
1310/1550nm Singlemode

OPTICAL EMITTER: Laser Diode

NUMBER OF FIBERS 1

CONNECTORS

Optical ST
Video BNC

GENERAL

Power Supply DC 5V @2A
Size 5.98 x 5.12 x 1.13 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)

LED INDICATORS

Green Video Sync Present
Green Data Sync Present
Green Power On

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.

Fiber	Wavelength	Transmitter		Receiver		Optical Power Budget	Max Distance
		Model	Output	Model	Sensitivity		
Multi-Mode	850/1310nm	FVTM 4A03A	-10 dBm	FVRM 4A03A	-24 dBm	14 dB	3km
Fiber	Wavelength	Transmitter		Receiver		Optical Power Budget	Max Distance
		Model	Output	Model	Sensitivity		
Single-Mode	1310/1550nm	FVTM 4A05A	-5 dBm	FVRM 4A05A	-26 dBm	21 dB	30km

INSTALLATION INSTRUCTIONS

Installation Procedure

The VERSITRON *VersiVision* FVTM4A0xA and FVRM4A0xA 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 (FVTM4A0xA) using coaxial cable.
2. Connect the video output BNC connector on the receiver unit (FVRM4A0xA) 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.

Indicator LEDs

The units have integral LEDs that are used to monitor the state of the unit. The indicator LEDs function as follows:

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 input BNC)

Data: OFF: Indicates no data detected on the receive data cable

Blinking: (Green) Indicates data received at the rate of the operation data.

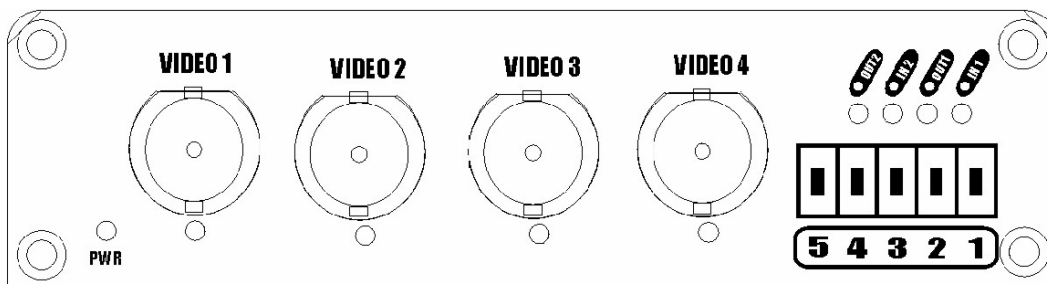
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System Terminal Block Connections

The various input and output connections for FVTM4A0xA and FVRM4A0xA Series systems are as follows:

Video Input or Output: BNC Connectors

Data Connection — Camera Site (Transmitter):



*Front panel of FVTM4A0xA

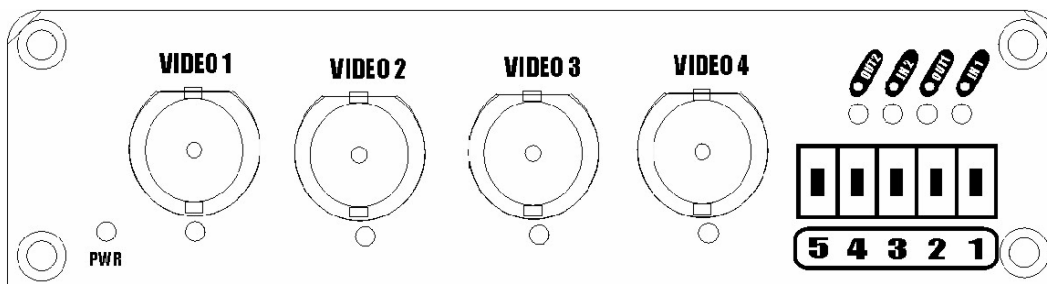
RS-485 2-Wire Connection (1-Channel Bi-directional)

Pin 1 — RS485A

Pin 2 — RS485B

Pin 3 — GND

Data Connection — Control Site (Receiver):



*Front panel of FVRM4A0xA

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

Pin 1 — RS485A

Pin 2 — RS485B

Pin 3 — GND

TROUBLESHOOTING

Optical Fiber

The VERSITRON *VersiVision* FVTM4A0xA and FVRM4A0xA 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 Links

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 all data connections.

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