



VersiVision

FDVT1AAxA-AE / FDVR1AAxA-AE

1-CHANNEL DIGITALLY ENCODED VIDEO

1-CHANNEL BI-DIRECTIONAL DATA

1-CHANNEL BI-DIRECTIONAL CONTACT CLOSURE

1-CHANNEL BI-DIRECTIONAL AUDIO

AND

1-CHANNEL 10/100BASE ETHERNET

MULTIPLEXER

USER'S MANUAL

Revision D

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PROPRIETARY DATA

All data in this manual is proprietary and may not be disclosed, used or duplicated, for procurement or manufacturing purposes, without prior written permission by **VERSITRON**.

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

Note: This warranty is effective for commercial products as of January 1, 2001 and for GSA products as of July 1, 2006.

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GENERAL INFORMATION

Introduction:

The VERSITRON *VersiVision* FDVT1AAxA-AE and FDVR1AAxA-AE Series video, data and audio transmitter and receiver support simultaneous transmission of one channel of 8-bit digitally encoded video, one channel of bi-directional data and one-channel of bi-directional audio over one multi-mode or single-mode optical fiber. The modules 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
1-channel Digitally Encoded Video + Bi-Directional Data & Audio Transmitter	FDVT1AAxA-AE
1-channel Digitally Encoded Video + Bi-Directional Data & Audio Receiver	FDVR1AAxA-AE

Technical Specifications:

VIDEO

Video Input	2.0 volt pk-pk (75 ohms)
Input/Output Channels	1
Bandwidth	5 Hz - 8 MHz
Bit Resolution	8-bit
Differential Gain	< 2%
Differential Phase	< 0.6°
Tilt	< 1%
S/N Ratio	60dB (Weighed)

DATA

Data Interface	RS-485 (RS-422, RS-232 Optional)
Data Channel	1-Channel Bi-Directional
Data Rate	100Kbps
Bit Error Rate	10 ⁻⁹

AUDIO

Audio Impedance	600 Ohms
Input/Output Voltage	2.0Vp-p
Frequency Response	10Hz - 20Khz
Bit Resolution	24-Bit
S/N Ratio	95dB

Technical Specifications (cont):

CONTACT CLOSURE

Input/Output Channels	1 (Bi-Directional)
Relay	24VDC/0.5A (Normally Open) 125VAC/0.1A (Normally Open)

ETHERNET 10/100Mbps

WAVELENGTH 850/1310nm Multimode
1310/1550nm Singlemode

OPTICAL EMITTER Laser Diode

NUMBER OF FIBERS 1

CONNECTORS

Optical	ST
Video	BNC

GENERAL

Power Supply	5VDC @ 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)

INDICATOR

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.

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		
Singlemode	1310/1550nm	FDVT 1AA5A- AE	-5 dBm	FDVR 1AA5A- AE	-26 dBm	21 dB	30 Km
Fiber	Wavelength	Transmitter		Receiver		Optical Power Budget	Max Distance
		Model	Output	Model	Sensitivity		
Multimode	850/1310nm	FDVT 1AA5A- AE	-10 dBm	FDVR 1AA5A- AE	-24 dBm	14 dB	3 Km

INSTALLATION INSTRUCTIONS

Installation Procedure

The VERSITRON *VersiVision* FDVT1AAxA-AE and FDVR1AAxA-AE 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 (FDVT1AAxA-AE) using coaxial cable.
2. Connect the video output BNC connector on the receiver unit (FDVR1AAxA-AE) 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 LED and DATA LED will give an indication as stated on the following pages.
6. The system should now be operational.

Indicator LEDs

The stand-alone units have integral LEDs that are used to monitor the state of the unit. There are one video LED and one power LED on each unit. One, labeled as “PWR, lights when operating power is present. Another LED under the BNC connector will illuminate when the video input/output signals are detected. The other LEDs above the green terminals blink at the rate of the operating data. As shown in the following diagram:

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 input BNC)

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

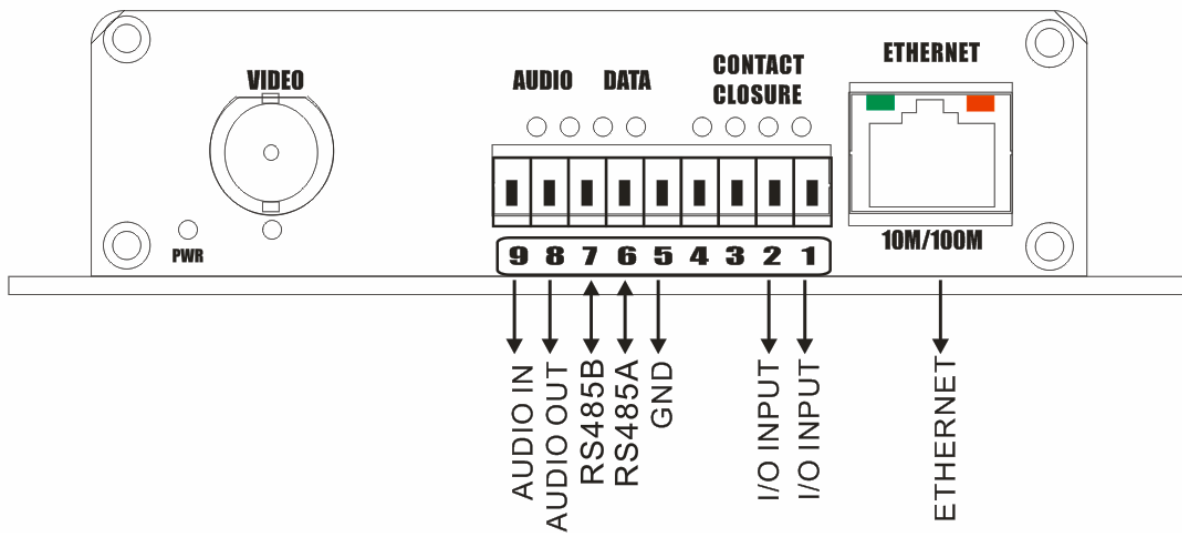
Blinking: (Green) Indicates data received at the rate of the operation data.

System Terminal Block Connections

The various input and output connections for the VERSITRON *VersiVision* FDVT1AAxA-AE and FDVR1AAxA-AE video transmission systems series are as follows:

Video Input or Output: BNC Connectors

System Connection — Camera Site (Transmitter Front Panel):



*Front panel of FDVT1AAxA-AE

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

Pin 6——RS485A

Pin 7——RS485B

Pin 5——GND

Audio Connection (1-Channel Bi-directional)

Pin 9——Audio In

Pin 8——Audio Out

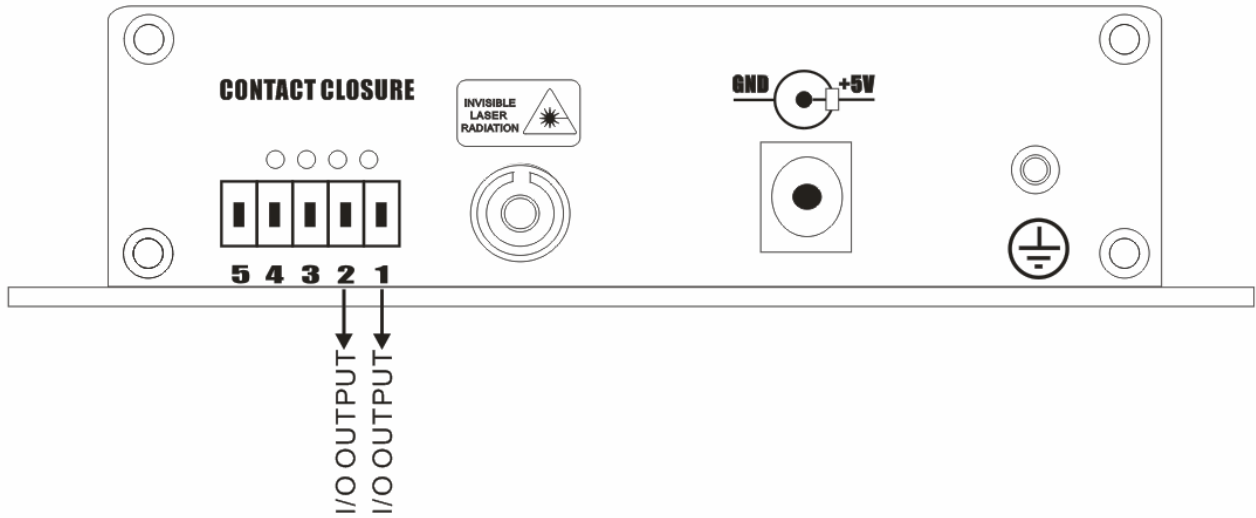
Pin 5——GND

Contact Closure Input Connection (1-Channel Bi-directional)

Pin 1——Contact Closure Input

Pin 2——Contact Closure Input

System Connection — Camera Site (Transmitter Rear Panel):



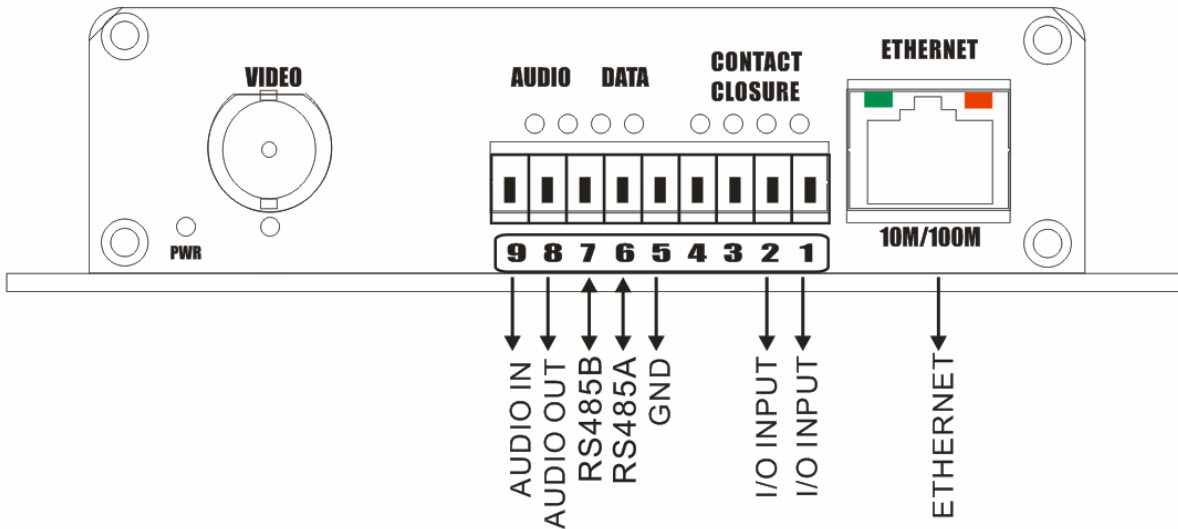
*Rear panel of FDVT1AAxA-AE

Contact Closure Output Connection (1-Channel Bi-directional)

Pin 1 — Contact Closure Output

Pin 2 — Contact Closure Output

System Connection — Control Site (Receiver Front Panel):



*Front panel of FDVR1AAxA-AE

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

Pin 6——RS485A

Pin 7——RS485B

Pin 5——GND

Audio Connection (1-Channel Bi-directional)

Pin 9——Audio In

Pin 8——Audio Out

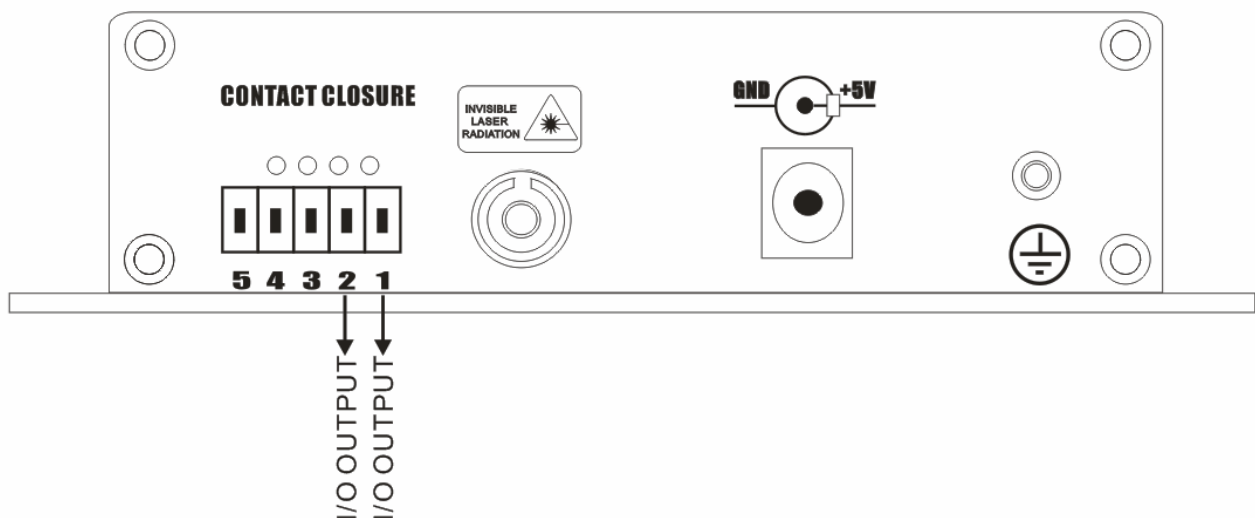
Pin 5——GND

Contact Closure Input Connection (1-Channel Bi-directional)

Pin 1——Contact Closure Input

Pin 2——Contact Closure Input

System Connection —— Control Site (Receiver Rear Panel):



*Rear panel of FDVR1AAx-AE

Contact Closure Output Connection (1-Channel Bi-directional)

Pin 1——Contact Closure Output

Pin 2——Contact Closure Output

TROUBLESHOOTING

Optical Fiber

The VERSITRON *VersiVision* FDVT1AAxA-AE and FDVR1AAxA-AE video transmission systems series is available for most applications using multimode or singlemode 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 clean 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