VF-1605 Series Bi-Directional FM Fiber-Optic Video Transmission System for Vicoax™ Systems

- **Compatible with NTSC/PAL, RS170A/RS-343A**
- **Standalone or rack-mount versions**
- **Designed for use with Vicoax and Vicoax II (enhanced) systems**
- **Video, power and optical diagnostics**
- **Full color transmission**
- **FM video transmission**

The VF-1605 series fiber-optic video transmission system provides superior performance and reliability in closed-circuit video systems. The system consists of transmitter and receiver. The system transmits high-quality video from the camera to the control station and digital control signals (PTZ) functions) from the control station to the camera station over a single optical fiber. It is intended for use with Vicon Vicoax or Vicoax II (enhanced) control systems.

The VF-1605 series can withstand an optical signal loss of up to 12 dB over 62.5- µ cable. The VF-1605 is set up for 62.5-µ cable, but will work on 50-µ cable. It requires no field adjustments. The transmitter and receiver are available in standalone or rack-mount configurations. Refer to Table 1.

A 12 VDC power supply is included with the standalone unit. Rack-mount models are powered by the power supply built into the VF-SR-20/2 card cage.

OPTICAL CABLE RECOMMENDATIONS
Vicon recommends that a professional fiber company install and terminate the optical cable. The cable should meet the application requirements for physical properties, such as strength and weatherproofing. The fiber contractor will provide recommendations for exact cable type based on the details of the installation.

COAXIAL CABLE RECOMMENDATIONS
Using the correct coaxial cable is critical for proper system operation. The cable must meet these requirements: (1) pure copper center conductor; (2) pure copper braid shield with a minimum of 95%coverage; (3) polyethylene dielectric. If the cable is connected to a camera on a pan-and-tilt, use a multistrand center conductor. Other cable properties, such as outer jacket material, will be determined by the physical requirements of the installation. With RG-59/U type cable made of the materials above, the fiber-optic transmitter or receiver may be located up to 100 feet (about 30 meters) from the video source or video destination.

The VF-1605 series meets requirements for an FCC Class A device and Canadian industry (ICES0-3) Class A.

ASSOCIATED EQUIPMENT AND ACCESSORIES
Model VF-SR-20/2 Card Cage with Power Supply, Product Code 8423-00: Rack with built-in power supply can accommodate up to 14 modules with a total current requirement of 1 A. Modules must be rack-mounted versions. Product Specification V164-60.

Model VF-BPS, Product Code 8424-00: Blank panel for VF-SR-20/2 Power Supply. Product Specification V164-60.

Table 1: Models. Product Codes and Descriptions

Model	Product Code	Description
VF-1605T	8418-00	Video transmitter, standalone module
VF-1605TR	8418-02	Video transmitter, rack-mount module
VF-1605R	8419-00	Video receiver, standalone module
VF-1605RR	8419-02	Video receiver, rack-mount module

ELECTRICAL

Power Requirements:	Standalone: 12 VDC. Rack Mount: power supplied from card cage.
Current:	Refer to Table 2.
Power Consumption:	Refer to Table 2.
Heat Equivalent:	Refer to Table 2.
Radio Emission Standard:	FCC Class A.

VIDEO

Number of Channels:	1.
Modulation Type:	Frequency Modulation (FM).
Formats Supported:	NTSC and PAL
Video Bandwidth:	8 MHz.
Horizontal Video Resolution:	640 TV lines.
Video Input/ Output Impedance:	75 ohms.
Video Input Signal:	1 V p-p nominal, composite video.
Video Output Signal:	1 V p-p.
Differential Phase:	3°.
Differential Gain:	5%.
Signal-to-Noise Ratio:	60 dB.
Interconnection Distance (recommended):	100 ft (30 m) (video equipment to transmitter or receiver). Recommended cable type: RG59/U coaxial cable (Belden no. 9259 or equivalent).

OPTICAL

Optical Wavelength:	850/1300 nm.
Maximum Optical Attenuation (Loss Budget):	12 dB (62.5 µ).
Fiber Type:	50 or 62.5 µ.
Maximum Transmission Distance*:	1.6 mi (2.5 km) on standard fiber.

**Pending optical cable loss.*

Model Number	Current (mA)	Power Consumption (W)	Heat Equivalent** [btu/min (cal/min)]
VF-1605T	270	3.2	0.180 (0.046)
VF-1605TR	275	4.1	0.235 (0.06)
VF-1605R	250	3.0	0.171 (0.04)
VF-1605RR	275	4.1	0.235 (0.06)

Table 2: Electrical Specifications

DATA

Number of Channels:	1.
Data Formats:	Vicoax and all major formats.
Data Direction:	Tx← → Rx.

CONNECTORS AND INDICATORS

Power:	Standalone: 2-pin connector. Rack Mount: connector in rack.
Video:	BNC.
Optical:	ST type.
Diagnostics Indicators:	Video, power and optical presence bi-color LEDs.

MECHANICAL

Dimensions:	Standalone Height: 1.3 in. (33 mm). Width: 5.875 in. (149 mm). Depth: 3.75 in. (95 mm). Rack Mount: 1 rack slot.
Weight:	Standalone: 0.65 lb (0.3 kg). Rack Mount: 0.46 lb (0.2 kg).
Construction:	Aluminum.
Finish:	Standalone: Silver. Rack Mount: Black paint.
Mounting:	No. 8 (3 mm) hardware, 4 places.
Shipping Dimensions:	Standalone Height: 3.1 in. (79 mm). Width: 6.0 in. (152 mm). Depth: 10.5 in. (267 mm). Rack Mount Height: 1.2 in. (31 mm). Width: 6.0 in. (152 mm). Depth: 8.8 in. (223 mm).
Shipping Weight:	Standalone: 1.7 lb (0.8 kg). Rack Mount: 0.6 lb (0.3 kg).
Shipping Volume:	Standalone: 0.11 ft^3 (0.003 m^3). Rack Mount: 0.04 ft^3 (0.001 m^3).

ENVIRONMENTAL

Operating Temperature Range:	-40 to 165° F (-40 to 74° C), noncondensing.
Humidity Range:	Up to 95%, relative.
Storage Temperature Range:	-40 to 185° F (-40 to 85° C)

**Note: These figures represent the conversion of 100% of the electrical energy to heat. Actual percentage of the heat generated will be less and will vary from product to product. These figures are provided as an aid in determining the extent of cooling required for an installation.

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