FIBER OPTIC CONVERTER

VO-TX1-RS485OPT(HD)
VO-RX1-RS485OPT(HD)
VO-RX16-RS485OPT(HD)

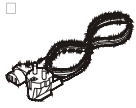
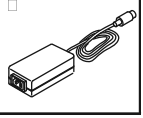
Instruction Manual

Please read instruction manual carefully before installing or using this product.

Product Features

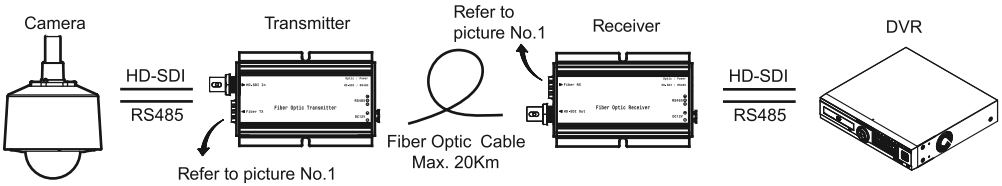
1. Converting between HD-SDI signal and Optical signal. Optical signal transmission.
2. Video/Data (RS485) transmission up to 20Km through single mode fiber-optic cable.
3. Supports 1.5Gbps, 750Mbps for optical signal, and max. 115200bps for data
4. Supports 1080p 25/30 or 1080i 50/60 video.
5. LED indicators for Power, Video, Data and Fiber-optic status.
6. 1U 19" rack type (VO-RX16-RS485OPT(HD) model only).
7. Advanced surge arrestor ESD protection circuit for HD-SDI port.

Accessories

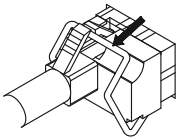
Fiber Optic Converter		
1Ch TX/RX	or	16Ch RX
		
Accessories		
Installation	Power Cable	Adapter
		

□ Power cord and adapter are supplied only for **VO-RX16-RS485OPT(HD)**

Device connection method



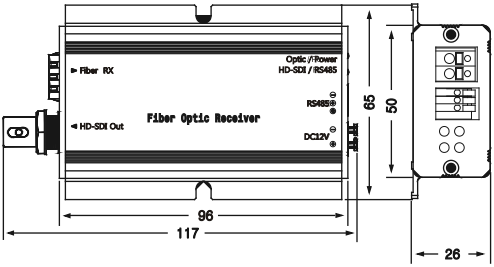
1. Connect camera's video output to Transmitter's "HD-SDI In" using coaxial cable.
   - To control camera OSD or PTZ, connect RS485 line between Transmitter and camera.
   - Please refer to "NOTICE of coaxial cable" regarding the maximum transmission distance of HD-SDI.
2. Connect Transmitter and Receiver using Single mode LC Type fiber-optic cable.
   - When connecting optical cable to the converter, insert fully until you hear a click sound.
   - As shown in Figure 1, pull the lever to lock the optical cable not to fall off from the converter.
3. Connect Receiver's "HD-SDI Out" to DVR's "HD-SDI In" using coaxial cable.
   - To control camera OSD or PTZ, connect RS485 line between Receiver and DVR.
4. Check the status of LED indicators to confirm the correct connections
   - Power : Red LED will be lit if the power is on.
   - HD-SDI : Green LED will be lit if the video signal enters.
   - Optic : Green LED will be lit if Transmitter and Receiver are connected each other.
   - RS485 : Green LED will be blinking during data is being entered.
5. Check the monitor that is connected to DVR whether all channels are properly displayed



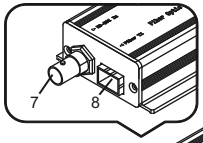
Picture No.1
LC Type Connector

Appearance & Dimension (unit: mm)

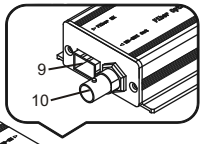
VO-TX1-RS485OPT(HD) / VO-RX1-RS485OPT(HD)

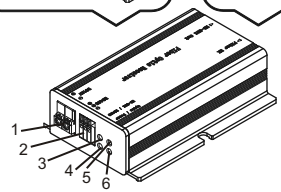


VO-TX1-RS485OPT(HD)



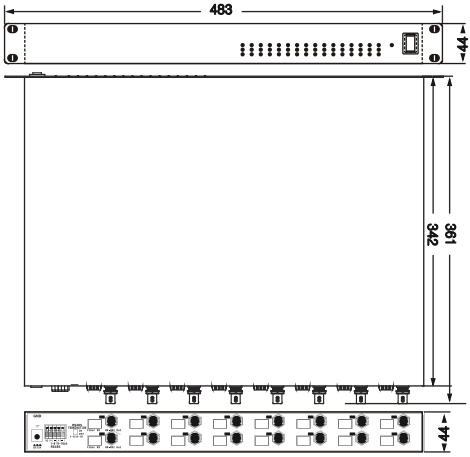
VO-RX1-RS485OPT(HD)

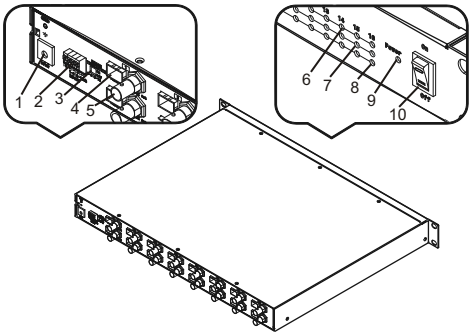




1 Power Input (DC12V 2A)
2 RS485
3 LED (Green): HD-SDI
4 LED (Green): RS485
5 LED (Green): Optic
6 LED (Red): Power
7 HD-SDI In
8 Fiber TX
9 Fiber RX
10 HD-SDI Out

VO-RX16-RS485OPT(HD)



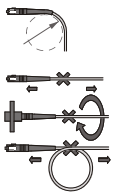


1 Power Input (DC12V 5A)
2 RS485
3 Termination
4 Fiber RX
5 HD-SDI Out
6 LED (Green): Optic
7 LED (Green): HD-SDI
8 LED (Green): RS485
9 LED (Red): Power
10 Power Switch

Precautions

Fiber-Optic Cable

1. For cable connection, do not bend the cable narrower than 30mm (Minimum allowable refraction range).
2. Do not pull the cable from both ends.
3. Do not spin the optical cable while the cable is connected to connector.
4. Do not knot the optical cable.



Coax Cable

1. HD-SDI maximum transmission distance depends on the cable manufacturer or installation environment.
2. The impedance of the coaxial cable and BNC connectors must be 75 Ohm. For your reference, please refer to the below table of cable recommendation.

Cable Type	Length of HD-SDI	Details of usage
5C2V	About 100M	For analog signal
4C-FB(T), 4C-HFB(T), RG59	About 150M	High-foamed, double or triple shielded cable is recommended
5C-FB(T), 5C-HFB(T), L-6CHD, RG6	About 200M	Dedicated cable for HD-SDI

Note) When selecting a cable, consider the maximum transmission distance of the cable which depends on its attenuation at 750MHz.
(dB/100m <25dB of attenuation is recommended.)

Trouble Shooting

Trouble & Symptom	Way to Solve
Can not turn on the equipment, and LED indicators do not work.	√ Check the power is properly connected to the equipment √ Check the input power voltage √ If it does not work, please check the power adapter or replace it
Nothing shows on the screen.	√ Check video of camera that is connected to Transmitter. If there is no video output from camera, nothing could be shown on the screen √ Check the power connection of camera √ Check the cable connections between camera, converter and DVR
Can not control camera's OSD menu and PTZ	√ Check the RS485 connection among camera, converter and DVR √ Check the polarity of RS485(+,-) √ Check the setting of DVR and camera. If the setting values such as Baudrate, Protocol, Address are not properly configured, camera control can not be achieved..

Note) Foamed or High-foamed insulation cable is recommended.
Note) Double or Triple shielded cable is recommended

Specification

Model	VO-TX1-RS485OPT(HD)	VO-RX1-RS485OPT(HD)	VO-RX16-RS485OPT(HD)
Function	1Ch Receiver	1 Ch Transmitter	16Ch Receiver
Video Standard	HD-SDI SMPTE 292M		
Resolution	SMPTE 274M(1080p25/30, 1080i50/60), SMPTE 296M(720p25/30/50/60)		
Impedance	75 ohm		
Fiber Optic Type	Single-mode		
Connector	LC		
HD-SDI Length	Approx 150m@L-4CFB(Canare)		
Fiber Length	Approx 20Km at 1.5Gbps		
Data Channel	RS485 Upstream(Remote control from DVR to Camera)		
Indicator LED	Power(Red), Link-Opt(Green), Link-SDI(Green), RS485(Green)		
Input Voltage/Current	12 VDC (Acceptable Input Voltage Range 6V ~ 25V)		
Operating Temperature / Humidity	+0°C to +50°C (+32°F to +122°F) 20%RH to 80%RH		
Power consumption	Max 2.0W		Max 30W
Dimension (W x D x H)	65 X 117 X 26 mm		361 x 483 x 44 mm
Weight	160 g	150 g	4.5 Kg
Certifications	KC, FCC, CE, HDcctv(TBD)		

The Best Choice for Your Safety