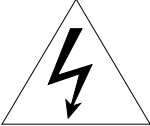
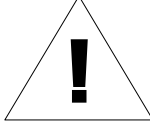


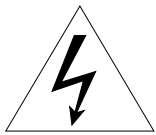
# RE1000

## Installation Guide



## INFORMATION TO USER

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK, DO NOT OPEN	
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SEERVIGE PERSONEL.</p>		



This symbol is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

---

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# 1. FEATURES

---

## Streaming

- Dual streaming mode (such as different codec/resolution/bit rate and so on.)
- De-interlacing on DSP
- Burnt-in text supported
- Unicast/Multicast supported

## Video/Audio

- Video compression: H.264/MPEG/MJPEG, 25/30FPS@D1(PAL/NTSC)
- Audio compression: G.711( $\mu$ Law, aLaw)/PCM
- Analog video out for external monitors
- Video Motion Detection supported
- Two-way mono audio supported

## Network

- RTSP/ HTTP protocol supported
- 10/100 Base-T Ethernet

## Additional Features

- RS-232, RS-485 supported
- USB 2.0 supported (Local storage, Wireless LAN)
- SD memory card supported
- PoE supported
- Built-in Video Content Analysis
- SDK (Software Development Kit) provided

## VCA (Video Content Analysis)

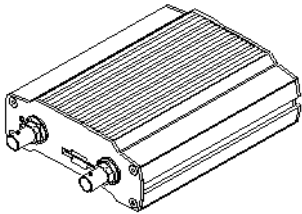
- VCA Presence (Included as basic)
- VCA Surveillance (Optional)

## 2. PACKAGE CONTENTS

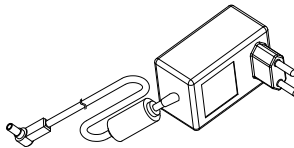
---

Unpack carefully and handle the equipment with care. The packaging contains:

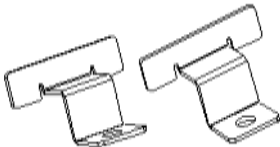
Encoder



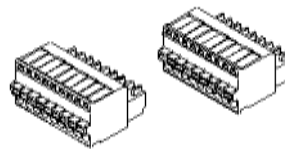
DC power adaptor



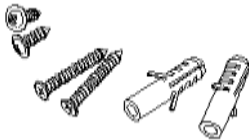
Mounting brackets



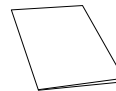
9 Pin terminal blocks



Screws and anchor blocks



Quick Installation Guide



**Note**

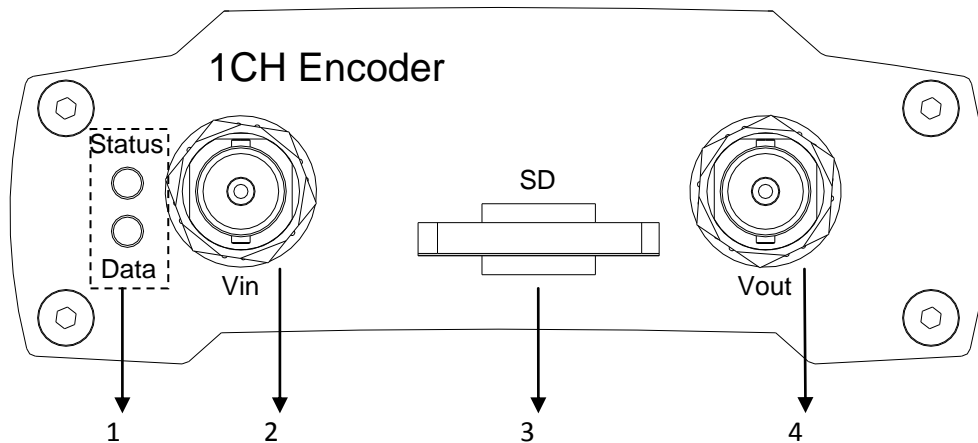
The above contents are subject to change without prior notice.

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## 3. PART NAMES

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### 3.1. Front Panel



#### 1. System Status LEDs

The LEDs are located on the left side of the front panel and they indicate certain system information.

**Status** This LED lights up as orange and turns green when the encoder is powered on.

**Data** This LED lights up when the host system is turned on with a connection is made.

(The color of LEDs is subject to change according to the firmware version. To change its setting, refer to the section *4.5.11. LED Setting* of the *RE Web Page User's Manual*.)

#### 2. Video Input BNC connector

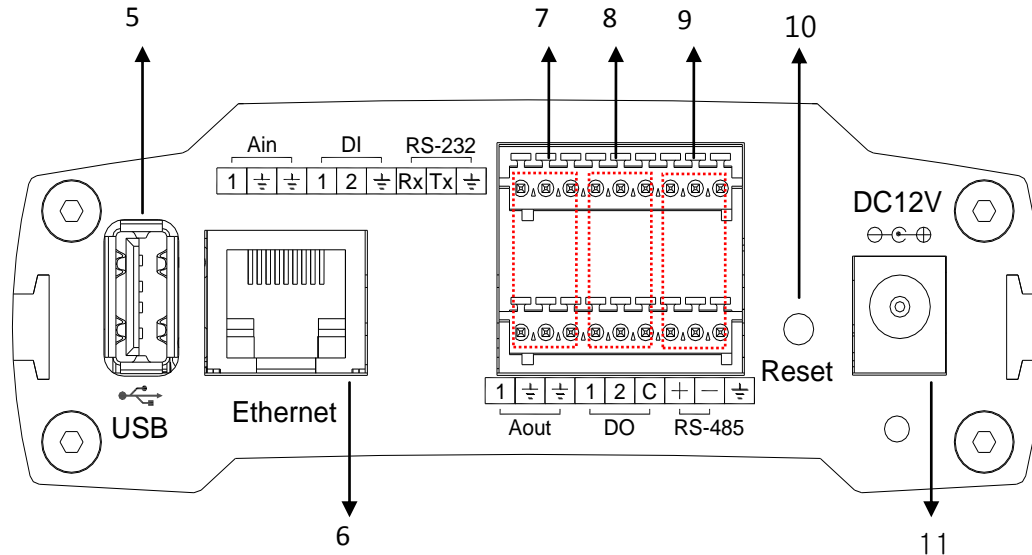
As a video input connector, connect to the camera.

#### 3. SD memory card slot

Insert a SD memory card for local storage.

#### 4. Loop out BNC connector

As a loop out connector, connect to a device such as a VCR or monitor.



### 3.2. Back Panel

#### 5. USB 2.0 port

Insert a USB storage device or Wi-Fi devices. (Ralink RT73 or RT3070 chipset based wireless device is available.)

#### 6. LAN connector

Use the RJ45 LAN connector for 10/100 Base-T Ethernet.

#### 7. Audio IN/OUT

The encoder has one channel mono audio input/output. As the output power for the audio is low, an amplifier speaker is needed.

#### 8. DI/DO

The encoder supports two channels for each of DI and DO. Refer to the section "4.1.Connectors" for more specific information.

### 9. RS-232/RS-485

RS-232C Terminal Block is used for some devices such as POS terminal block. RS-485 is used for PTZ controls.

### 10. Reset

Reboot the device system or reset the device to its Factory default settings. Refer to the section "**5.3. Reset**" for more specific information.

### 11. Power connector

Connect the power adaptor for power supply. DC 12V 1A adaptor is needed.



# 4. CONNECTIONS

---

## 4.1. Connectors

### Video connection

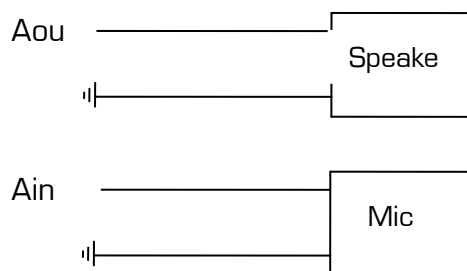
Connect the camera to the **Video input connectors** on the back panel using 75 ohm video coaxial cables with a BNC connector. Each video channel input among these connections can be looped to other equipments as CRT monitor through **External Video output connector**.



Make sure to connect the analog video input before you turn on the encoder. Otherwise, the device must be rebooted to see the normal display if the camera is NTSC, because the encoder default setting is PAL without a video connection.

### Audio connection

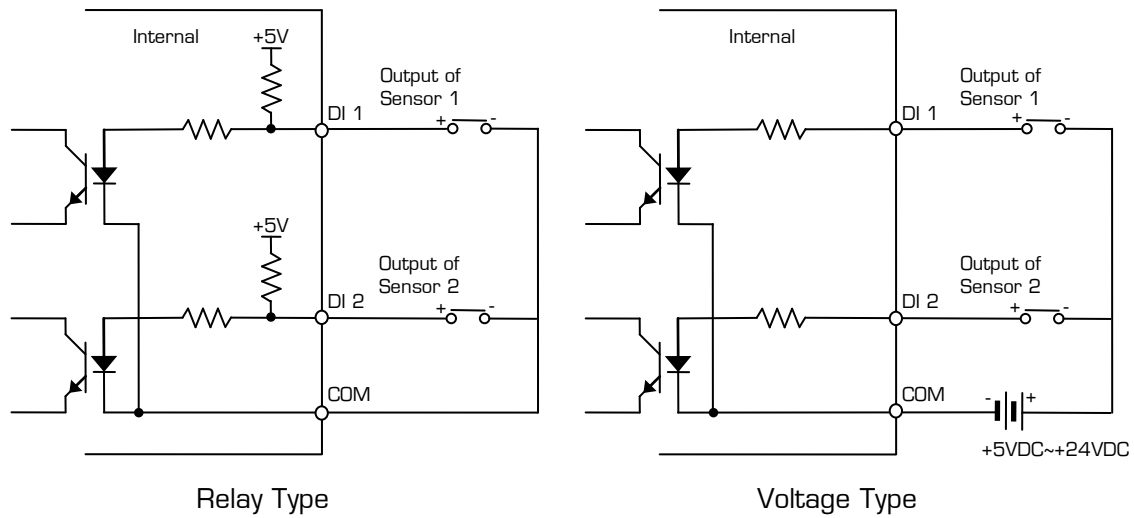
Connect to the audio input device such as a Mic.



Audio input range: 0.01/3.3 (Min/Max)

## Sensor Input (D/I)

There are two sensor interface types – Voltage Type and Relay Type. The interface type can be controlled by the software. Before connecting sensors, check driving voltage and output signal type of the sensor. Since the connection is different according to sensor type, be careful to connect the sensor.



Input voltage range: 0 VDC minimum to 24 VDC maximum

Input voltage threshold: 1 V

Signal	Description
COM	Connect (-) cable of electronic power source for sensors to this port as shown in the circuit above.
D1~D2	Connect output of sensors for each port as shown in the circuit above.



Do not exceed the maximum input voltage or relay rate.  
Do not use voltage and relay type sensor together.

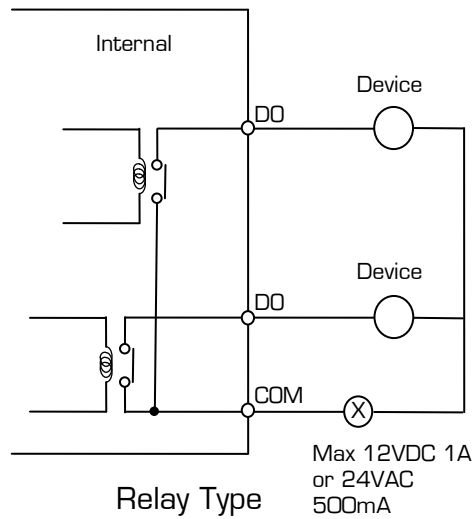
### Alarm Output (D/O)

Only the relay type is supported.

Relay Rating: Max 24VAC 500mA or 12VDC 1A

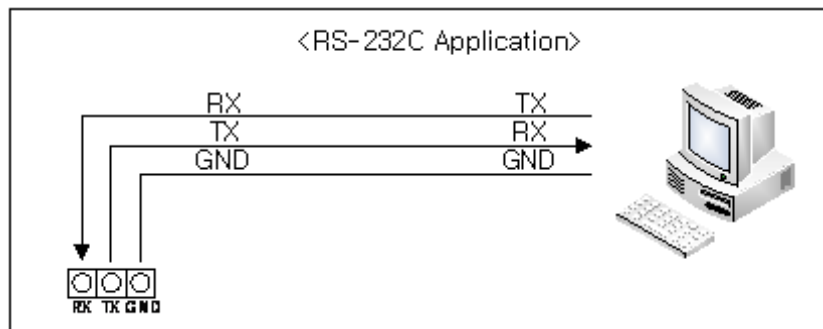


Do not exceed the maximum relay rating.



### RS-232C

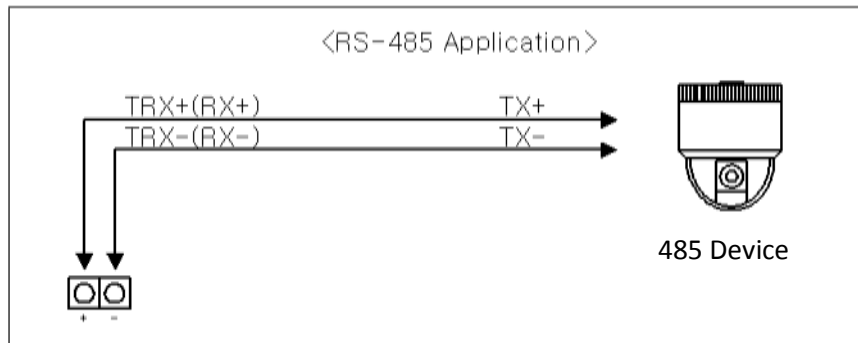
RS-232C Terminal Block is used for some devices such as POS terminal block.



RS-232C Connection

### RS-485

The RS-485 serial port consists of TRX+(RX+) and TRX-(RX-) as following the following image.



RS-485 Connection

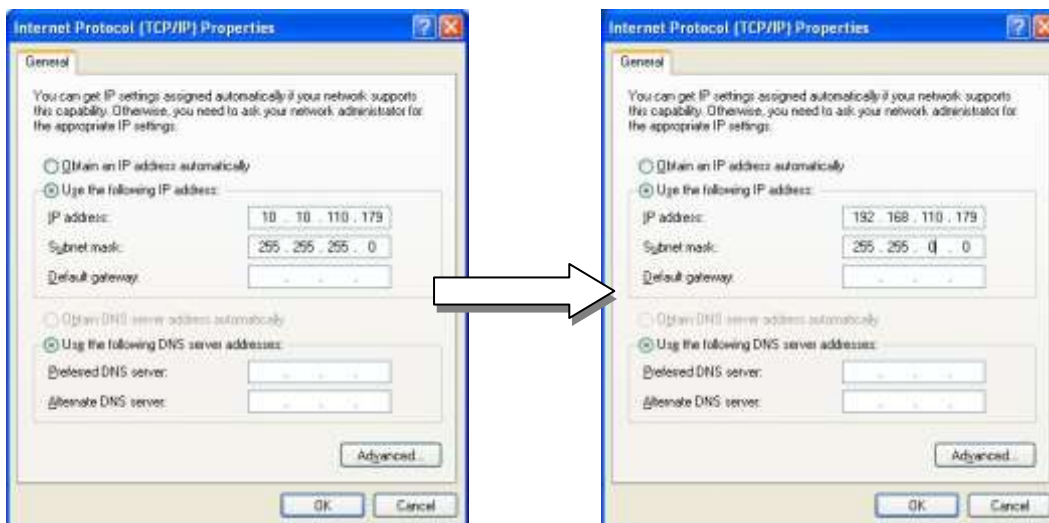
## 5. CONFIGURATION

### 5.1. Set up network environment

The default IP address of your IP device is 192.168.XXX.XXX. You can find the available IP address from the MAC address of your device. Please make sure the device and your PC are on the same network segment before running the installation. If the network segment between your PC and the device is different, change your PC's settings as below.

IP address : **192.168.xxx.xxx**

Subnet mask: **255.255.0.0**



## 5.2. View video on web page

View the live video on a web page using your IP device and its IP address. You can use the IPAdminTool or enter the IP address on the web page.

### 5.2.1. View video using IPAdmin Tool

IPAdminTool automatically searches all activated network encoders and IP cameras and shows the product name, IP address, MAC address and etc. IPAdminTool is provided with SDK at the following SDK path.

```
{SDK root}\BIN\TOOLS\AdminTool\
```

To use the IPAdminTool and view the live video on a web page:

1. Start IPAdminTool. Names and info of currently activated devices appear as a list.
2. Right-click on the desired device and select **Web view**.
3. Click **pop-up blocked** and install the ActiveX setup.exe by clicking the **Run** or **Save** button. You need to install the ActiveX for displaying the images.



4. Follow the instructions of the dialog boxes and complete the installation. Then the live video is displayed on the main page of the web browser.
5. If the live video is not displayed with the message said, "*This software requires the Microsoft XML Parser V6 or higher. Please download MSXML6 from the Microsoft website to continue. Error code: Can not create XMLDOMDocument.*", please download and install the relevant MSXML.



**Note**

---

If the ActiveX *setup.exe* file fails to be installed successfully, close all of the Internet Explorer windows and go to **Program Files > AxInstall** folder on your computer. Then, run *Uninstall.exe* and try to perform the steps 1 to 4 above again.

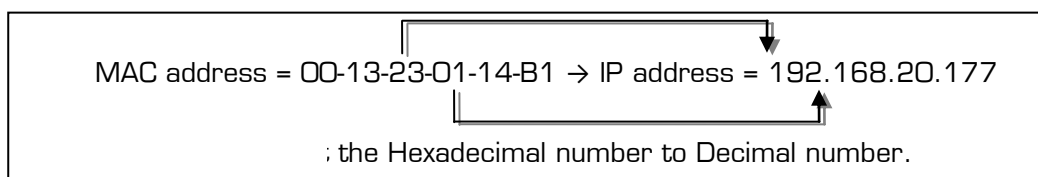
---

### 5.2.2. View video using IP address

View the live video on a web page using your IP device and its IP address. To have the correct IP address ready and use it on a web page:

1. Convert a MAC address to an IP address or check the IP address on the IPAdminTool. Refer to *Appendix (D): Hexadecimal-Decimal Conversion Table*.

(The MAC address is attached on the side or bottom of the device.)



2. Open a web browser and enter the IP address of the device.
3. Click **pop-up blocked** and install the ActiveX setup.exe by clicking the **Run** or **Save** button. You need to install the ActiveX for displaying the images.
4. Follow the instructions of the dialog boxes and complete the installation. Then the live video is displayed on the main page of the web browser.

### 5.3. Reset

1. While the device is in use, press and hold the Reset button.
2. Release the Reset button after 3 seconds.
3. Wait for the system to reboot.

### 5.4. Factory Default

1. Disconnect the power supply from the device.
2. Connect the power to the device with the Reset button pressed and held.
3. Release the Reset button after 5 seconds.
4. Wait for the system to reboot.

The factory default settings can be inferred as follows:

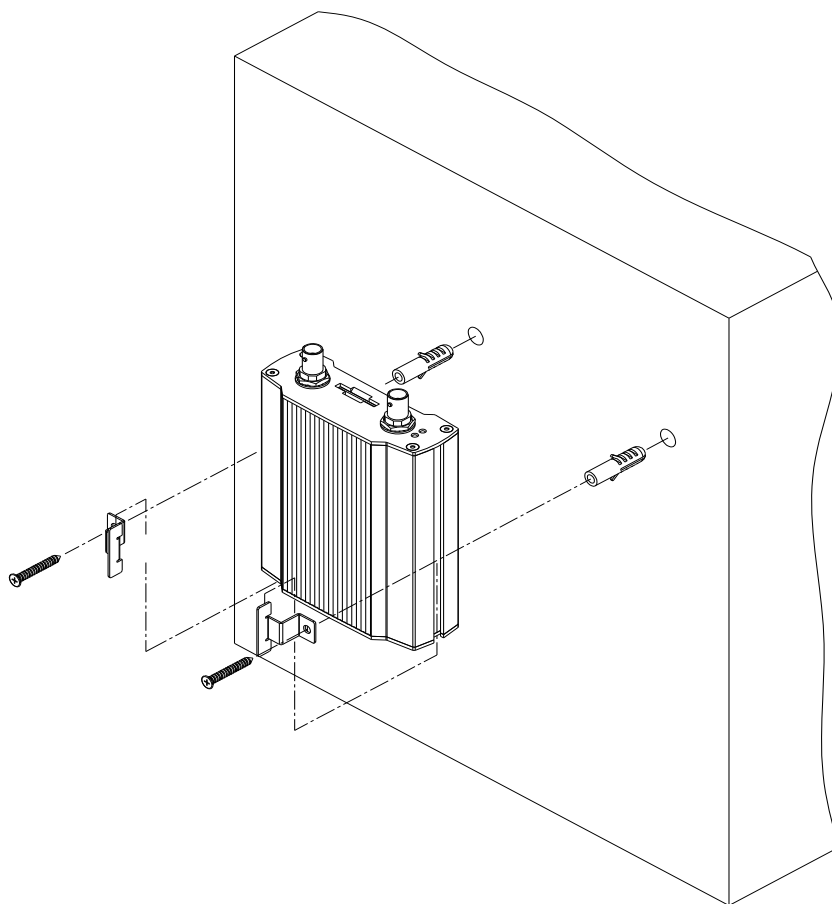
IP address:	192.168.xx.yy
Network mask:	255.255.0.0
Gateway:	192.168.0.1
User ID:	root
Password:	pass

## 6. WALL-MOUNTING

---

To wall-mount the encoder, follow this instruction:

The encoder has one mounting hole on each side. Mount the device using the included screws and anchor blocks. Refer to the image below.





# APPENDIX (A): SPECIFICATIONS

---

## Summary

Video	
Compression Format	H.264, MPEG-4, MJPEG Selectable per Stream
Number of Streams	Dual Stream, Configurable
Resolution	D1, 4CIF, 2CIF, VGA, CIF, QCIF, QVGA
Compression FPS	25/30 fps@D1 (PAL/NTSC)
Deinterlacing	Supported (DSP)
Motion Detection	Supported
OSD	Supported (DSP)
Burnt-in Text (Digital)	Supported (DSP)
Output	1 Loop Out (BNC connector)
Audio	
Input/output	1/1 channel
Compression Format	G.711
Function	
Digital Input/output	2/2 channel
RS-485	Supported
RS-232	Supported
Network	10/100 Base-T
Power over Ethernet	Supported
Protocol	TCP/IP, UDP/IP, HTTP, RTSP, RTCP, RTP/UDP, RTP/TCP, SNTP, mDNS, UPnP, SMTP, SOCK, IGMP, DHCP, FTP, DDNS, SSL v2/v3, IEEE 802.1X, SSH
USB 2.0	Supported
SD Memory	Supported *SD Card is not included
Dimensions	103(W) x 38(H) x 141(D) mm

## Electrical Characteristics

Video Input	1Vp-p, 75 $\Omega$
Video Output	1Vp-p, 75 $\Omega$
Audio Input	Linein, 1.43Vp-p(Min 1.35Vp-p, max 1.49 Vp-p), 39 K $\Omega$
Audio Output	Lineout, 46mW Power, 16 $\Omega$
Sensor(D/I)	TTL level 4.5V threshold, Max 50mA
Alarm(D/O)	Max 500mA@24VAC or 1A@12VDC
Power Source(Approx)	12 V DC 240mA or PoE IEEE802.3af (Class 0)

## Environment Condition

Operating Temperature	-20 °C ~ 60 °C (-4 °F ~ 140 °F)
Operating Humidity	Up to 85% RH

## APPENDIX (B): POWER OVER ETHERNET

---

The Power over Ethernet (PoE) is designed to extract power from a conventional twisted pair Category 5 Ethernet cable, conforming to the IEEE 802.3af Power-over-Ethernet (PoE) standard.

IEEE 802.3af allows for two power options for Category 5 cables.

The PoE module signature and control circuit provides the PoE compatibility signature and power classification required by the Power Sourcing Equipment (PSE) before applying up to 15W power to the port.

The high efficiency DC/DC converter operates over a wide input voltage range and provides a regulated low ripple and low noise output. The DC/DC converter also has built-in overload and short-circuit output protection.

Note: For proper activation of 12V PoE, the Category 5 cable must be shorter than 140m and conform the PoE standard.

### PoE compatibility

#### **With non Power Sourcing Equipment (PSE)**

When it is connected with non PSE, the power adaptor should be connected.

#### **With power adaptor**

Connecting both PSE and power adaptor does not do any harm to the products. Disconnecting power adaptor while it is operating does not stop operation. The product continues to work without rebooting.

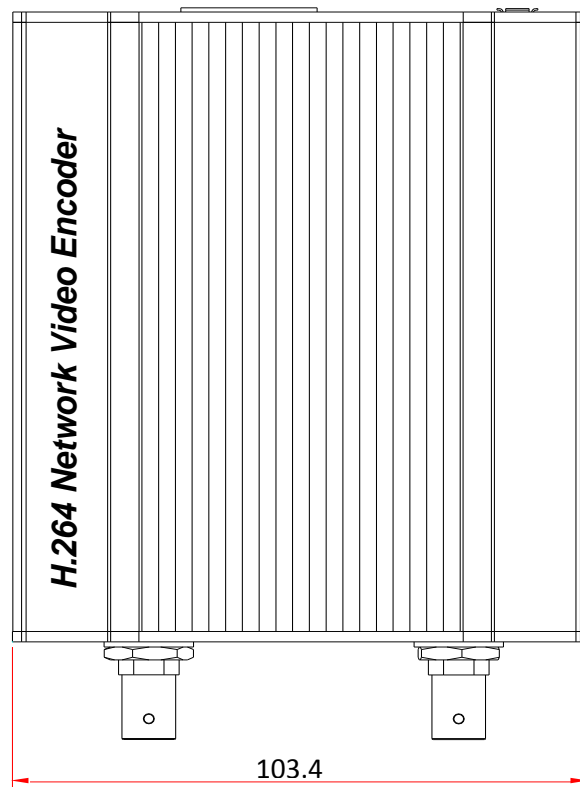
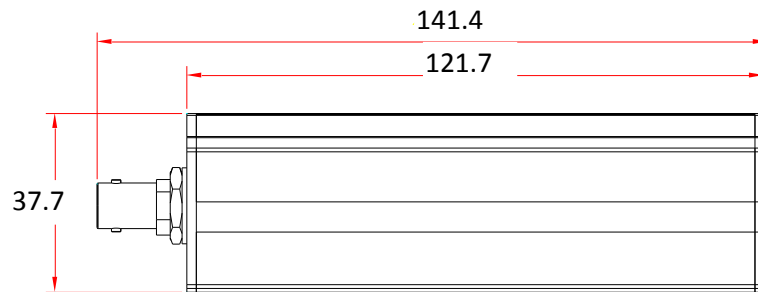
## Power classification

The PoE Power Class supported by the IP device is Class 0.

Class	Usage	Minimum Power Levels Output at the PSE	Maximum Power Levels at the Powered Device
0	Default	15.4W	0.44 to 12.95W

## APPENDIX (C): DIMENSIONS

---



(Unit: mm)

# APPENDIX (D): HEXADECIMAL-DECIMAL CONVERSION TABLE

Refer to the following table when you convert the MAC address of your device to IP address.

Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec
00	0	25	37	4A	74	6F	111	94	148	B9	185	DE	222
01	1	26	38	4B	75	70	112	95	149	BA	186	DF	223
02	2	27	39	4C	76	71	113	96	150	BB	187	E0	224
03	3	28	40	4D	77	72	114	97	151	BC	188	E1	225
04	4	29	41	4E	78	73	115	98	152	BD	189	E2	226
05	5	2A	42	4F	79	74	116	99	153	BE	190	E3	227
06	6	2B	43	50	80	75	117	9A	154	BF	191	E4	228
07	7	2C	44	51	81	76	118	9B	155	CO	192	E5	229
08	8	2D	45	52	82	77	119	9C	156	C1	193	E6	230
09	9	2E	46	53	83	78	120	9D	157	C2	194	E7	231
0A	10	2F	47	54	84	79	121	9E	158	C3	195	E8	232
0B	11	30	48	55	85	7A	122	9F	159	C4	196	E9	233
0C	12	31	49	56	86	7B	123	AO	160	C5	197	EA	234
0D	13	32	50	57	87	7C	124	A1	161	C6	198	EB	235
0E	14	33	51	58	88	7D	125	A2	162	C7	199	EC	236
0F	15	34	52	59	89	7E	126	A3	163	C8	200	ED	237
10	16	35	53	5A	90	7F	127	A4	164	C9	201	EE	238
11	17	36	54	5B	91	80	128	A5	165	CA	202	EF	239
12	18	37	55	5C	92	81	129	A6	166	CB	203	FO	240
13	19	38	56	5D	93	82	130	A7	167	CC	204	F1	241
14	20	39	57	5E	94	83	131	A8	168	CD	205	F2	242
15	21	3A	58	5F	95	84	132	A9	169	CE	206	F3	243
16	22	3B	59	60	96	85	133	AA	170	CF	207	F4	244
17	23	3C	60	61	97	86	134	AB	171	DO	208	F5	245
18	24	3D	61	62	98	87	135	AC	172	D1	209	F6	246
19	25	3E	62	63	99	88	136	AD	173	D2	210	F7	247
1A	26	3F	63	64	100	89	137	AE	174	D3	211	F8	248
1B	27	40	64	65	101	8A	138	AF	175	D4	212	F9	249
1C	28	41	65	66	102	8B	139	BO	176	D5	213	FA	250
1D	29	42	66	67	103	8C	140	B1	177	D6	214	FB	251
1E	30	43	67	68	104	8D	141	B2	178	D7	215	FC	252
1F	31	44	68	69	105	8E	142	B3	179	D8	216	FD	253
20	32	45	69	6A	106	8F	143	B4	180	D9	217	FE	254
21	33	46	70	6B	107	90	144	B5	181	DA	218	FF	255
22	34	47	71	6C	108	91	145	B6	182	DB	219		
23	35	48	72	6D	109	92	146	B7	183	DC	220		
24	36	49	73	6E	110	93	147	B8	184	DD	221		

# REVISION HISTORY

---

MAN#	DATE(M/D/Y)	Comments
01A.01	03/12/2009	Created.
01A.02	06/24/2009	Modified
01A.03	06/25/2009	Added TroubleShooting
02A.00	07/24/2009	FW 1.00.07 official release version
02A.01	08/06/2009	Added images to package contents
02A.02	08/24/2009	Added the requirement of VCA : MSXML4.0
02A.03	09/02/2009	Added the PoE specification
02A.04	09/29/2009	Changed the VCA specification
03A.00	10/13/2009	FW 1.02.02 official release version
03A.01	10/15/2009	Added the Cross Reference
03A.02	12/09/2009	Corrected Errata about Network Protocol
03A.03	02/24/2010	Modified for end users
03A.04	04/06/2010	Added LAN cable specification for PoE
04A.00	04/20/2010	FW v1.02.04 updated
05A.00	09/07/2010	FW v1.06.02 updated Removed VCA contents from the Specification section Added hexadecimal-decimal conversion table
06A.00	10/01/2010	FW v1.06.03 updated Changed ActiveX installation method for viewing web page Changed the default value for web server protocol from https to http
07A.00	03/09/2011	Added LED indicator information Changed the MSXML error message Changed the operating temperature specification
07A.01	03/31/2011	Added a note about NTSC/PAL detection
07A.02	05/27/2011	Corrected the supported resolution