DVS4016-IN
Video Encoder
Quick Guide

Manual Version: P101-20140414

Notice

The information in this manual is subject to change without notice. Every effort has been made in the preparation of this manual to ensure accuracy of the contents, but all statements, information, and recommendations in this manual do not constitute the warranty of any kind, express or implied.

Environmental Protection

This product has been designed to comply with the requirements on environmental protection. For the proper storage, use and disposal of this product, national laws and regulations must be observed.

Preface

Audience

This manual is intended for:

- Surveillance system planners
- Field technical support and servicing engineers
- Software installation, configuration, and servicing administrators
- Product users

Precautions

- If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, you might be required to take corrective actions.
- Do not remove the dismantlement-preventive seal from the chassis cover of the device without permission. If you want to open the

chassis, contact the local agent of our company for help. Otherwise, we shall not be held liable for any consequence caused thereby.

- Make sure the device is sturdy and well grounded and meets heat dissipation and lightning protection requirements. Avoid vibration when using the device.
- Provide a stable and compliant power supply before powering on the device.
- Before performing the verification (refer to section “Check Before Power-On”), make sure that the power is disconnected, for fear of bodily injury or equipment damage caused by incorrect cable connection.
- Power interruption may cause hard disk damage or abnormal functions. To shut down the device, strictly follow the instructions. If power interruption often occurs, configure an uninterrupted power supply (UPS).

Safety and Compliance Information

Conventions Used Symbol

The symbols in this chapter are shown in the following table. They are used to remind the reader of the safety precautions during equipment installation and maintenance.

Safety Symbol	Description
	Generic alarm symbol: To suggest a general safety concern.
	ESD protection symbol: To suggest electrostatic-sensitive equipment.
	Electric shock symbol: To suggest a danger of high voltage.

Safety Information

WARNING!

Installation and removal of the unit and its accessories must be carried out by qualified personnel. You must read all of the Safety Instructions supplied with your equipment before installation and operation.

Warnings:

- If the product does not work properly, please contact your dealer or the nearest service center. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)
- To reduce the risk of fire or electrical shock, do not expose this product to rain or moisture.
- This installation should be made by a qualified service person and should conform to all the local codes.
- Please install blackouts equipment into the power supply circuit for convenient supply interruption.
- The separate earthing terminal must be permanently connected to earth.
- For AC supplied model: The plug-socket combination must be accessible at all times as it serves as the main disconnecting device.
- Before the power cable is installed or removed, the power must be turned off.
- To avoid heat accumulation, good ventilation is required for a proper operating environment.
- Improper use or replacement of the battery may result in hazard of explosion. Please use the manufacturer recommended battery type.

Caution: Fiber optic ports – optical safety.

Never look at the transmit laser while the power is on. Never look directly at the fiber ports and the fiber cable ends when they are powered on.

Caution: Use of controls or adjustments to the performance or procedures other than those specified herein may result in hazardous laser emissions.

Regulatory Compliance

FCC Part 15

This equipment has been tested and found to comply with the limits for digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

LVD/EMC Directive

This product complies with the European Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EC.

WEEE Directive–2002/96/EC

The product this manual refers to is covered by the Waste Electrical & Electronic Equipment (WEEE) Directive and must be disposed of in a responsible manner.

Contents

1 Overview

NOTE!

This document presents the hardware information of the DVS4016-IN, how to install it, and how to quickly configure it through the web interface.

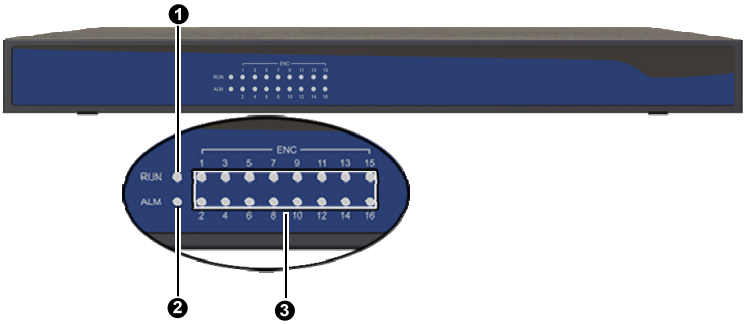
As new-generation network video surveillance media terminals, DVS4016-IN encoder (hereinafter referred to as the DVS4016-IN) integrate audio/video encoding and compression and data transmission. They are applicable to monitoring and listening to remote sites in real time, and can be widely applied to real-time surveillance applications in security protection, transportation monitoring, financial institutions, electricity industry, and medical institutions.

For more information about its technical specifications, see Table 4-1.

Appearance

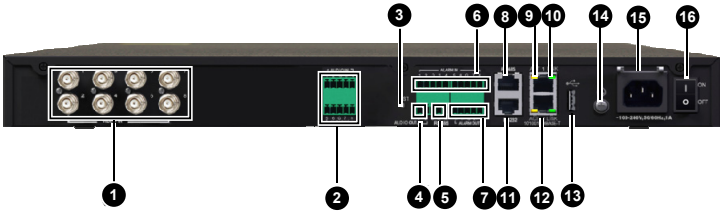
The DVS4016-IN appearance described in this manual is for reference only.

Figure 1-1 Front view



1: Running LED	2: Alarm LED	3: Encoding LED

Figure 1-2 Rear view



1: Video in port	2: Audio in port	3: Reset button
4: Audio out port	5: RS-485 port (Phoenix contact)	6: Alarm in port
7: Alarm out port	8: RS-485 port (RJ-45)	9: Active LED
10: Link LED	11: RS-232 port	12: Ethernet port
13: USB port	14: Grounding screw	15: AC power input
16: Power switch		

LEDs

Table 1-1 LED descriptions

LED	State	Meaning
RUN	Blinking	The device is starting up.
	On	The device is operating normally.
	Off	The device is powered off.

LED	State	Meaning
ALM	On	At least one device alarm (for example, temperature alarm) is present.
	Off	No device alarm is present.
ENC	On	There are input signals but they are not being encoded.
	Blinking	There are input signals and they are being encoded.
	Off	There are no input signals.
ACT	Blinking	The device is transmitting or receiving traffic.
	Off	The device is not transmitting or receiving traffic.
LINK	On	A link is present.
	Off	No link is present.

Ports and Buttons

Table 1-2 Ports and button descriptions

Port/button	Quantity	Description	Remarks

Port/button	Quantity	Description	Remarks
VIDEO IN	16	Analog composite video input (PAL/NTSC), BNC port 75 ohm, 1V (P-P)	Receives analog video signals from cameras and DVDs
AUDIO IN	16	Phoenix contact, single channel, 35 kohm, 2V (P-P), For more information, see Figure 2-7	Inputs audio signals
AUDIO OUT	2	Phoenix contact, single channel. 10 kohm, 2V (P-P), For more information, see Figure 2-7	Outputs audio signals Note: Currently, the device supports one audio intercom channel. The input line of audio intercom and the audio input line share the same port.
ALARM IN	8	Phoenix contact For more information see Table 2-2 Boolean input	Inputs alarm signals

Port/button	Quantity	Description	Remarks
ALARM OUT	2	Phoenix contact For more information see Table 2-2 Relay output	Outputs alarm signals
RS-485	2	RJ-45 connector, Phoenix contact	Provides interactive control with the connected device, for example, PTZ cameras
RS-232	1	RJ-45 connector	Commissions and maintains the device
Ethernet port	2	10 Mbps/100 Mbps/1000 Mbps auto-negotiation Half duplex/full duplex auto-negotiation RJ-45 connector	Connects to an Ethernet

Port/button	Quantity	Description	Remarks
RST	1	Reset button	• If you press the button for less than three seconds, the device reboots. • If you press and hold the button for more than three seconds and then release it, the device will reboot and restore the factory-default configuration
USB	1	USB2.0	Connects to storage device for local buffering For more information, see "Local Cache Function".

Local Cache Function

- The device supports only one USB storage device. For details about recommended USB models, contact relevant sales or technical

support personnel. If you use a USB mobile disk requiring independent power supply, you need to prepare the power supply on your own.

- The capacity of the USB storage device must be at least 4 GB.
- The USB port of the storage device must be of USB 2.0 or later versions.
- The file system of the USB storage device uses FAT32 and can have only one partition.

CAUTION!

- If the local cache function is used, caching data at a high bit rate is not recommended. In addition, the cache writing rate must be lower than the maximum writing rate of the USB storage device to avoid cache errors. For example, the bit rate configured on the device must be lower than 5 Mbps if the maximum writing rate of the USB storage device is 5 Mbps.
- Hot plugging is not recommended after you insert a USB storage device into the device. If you pull out the USB storage device by accident, you need to restart the device; otherwise, the cache function will fail.
- Do not manually delete any video file or folder stored in the USB storage device, or manually copy any file to the USB storage device.

If you need to use the local cache function, ensure that the USB storage device to be inserted has been formatted, because the terminal device does not support USB formatting.

After you insert the USB device, the local cache function will automatically start about 15 seconds later following a central storage failure.

Cached files will be periodically overwritten. Therefore, export cached files in time using the FTP client or start the image uploading function to back up cached videos through a backup server managed by the central server.

The exported or backed up video files can be played on the webpage of the central server.

2 Device Installation

Precautions

Checking Device Components

Unpack the container and remove the items out carefully. Check items against the packing list and ensure all items listed are included in the container.

WARNING!

Do not remove the dismantlement-preventive seal from the chassis cover of an DVS4016-IN without permission. If you want to open the chassis, contact the local agent of our company for help. Otherwise, we shall not be held liable for any consequence caused thereby.

Checking the Installation Environment

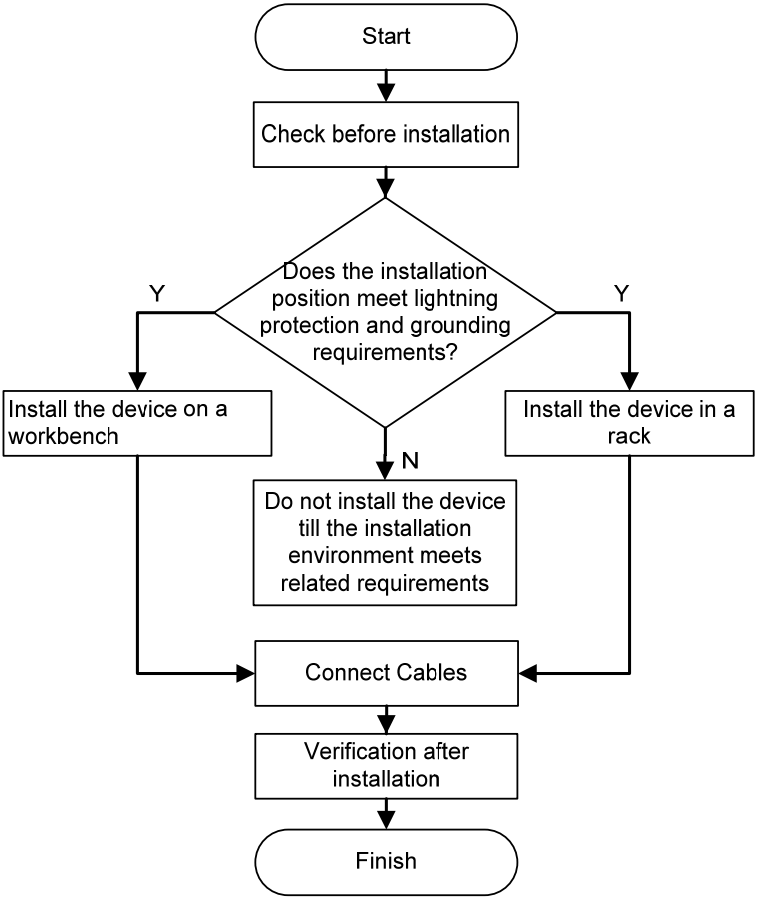
The device can be installed indoors only, and must meet lightning protection and grounding requirements.

- Ensure that appropriate lightning protection facilities are chosen for device power supply, audio and video signals, and the RS-485 port.
- Ensure that the device is correctly grounded through a grounding screw. For details, refer to *DVS/DC Cable Connection Guide*.

Installation Flow

Before installing the DVS4016-IN, make sure it is disconnected from the power source.

Figure 2-1 Installation flow



Installing the DVS4016-IN in a Rack

You can install your DVS4016-IN into a standard 19-inch rack in one of the following two modes:

- Forward installation of mounting brackets: Mounting brackets are installed in the first half of device flanks.

- Backward installation of mounting brackets: Mounting brackets are installed in the second half of device flanks.

Installing the DVS4016-IN in a rack does not require sliding rails or a tray. The mounting brackets are able to bear the weight of the DVS4016-IN.

The following sections describe how to front-mount the DVS4016-IN in a rack with the mounting brackets. The other installation on the rear side is similar and is thus omitted.

Preparing for the Installation

- Check the grounding and stability of the rack, determine the position in the rack that the DVS4016-IN is to be installed to, and make sure there is no obstacle inside or near the rack which may hamper the installation.
- Move the DVS4016-IN to a place near the rack.

Installing the Mounting Brackets

Confirmation before installation

Check the accessory kit shipped with the DVS4016-IN for two chassis mounting brackets and their screws. The two brackets are identical.

Installation procedure

1. Locate the mounting holes in the left front side of the chassis. Align the two-hole flange of a mounting bracket with the mounting holes in the chassis side.
2. Fasten the bracket onto the chassis with two M4×8 screws, as shown in Figure 2-2.
3. Repeat the preceding steps to attach the other mounting bracket to the right front side of the chassis.

Figure 2-2 Install the mounting brackets

	1: Screws (four)
	2: Bracket
	3: Screw hole
	4: Waist-shaped hole

Installing the DVS4016-IN to the Rack

Lift the DVS4016-IN horizontally to an appropriate position in the rack. Fix the two mounting brackets on the DVS4016-IN to the rack posts, as shown in Figure 2-3.

Figure 2-3 Install the DVS4016-IN to the rack

Verifying Installation

After installing the DVS4016-IN to the rack, check the installation against the following checklist. Ensure that all check results are positive.

Table 2-1 Verification items after installation

Item		Result		Remark
No.	Description	Yes	No	
1	The mounting brackets are fixed to the DVS4016-IN tightly.			
2	The DVS4016-IN is installed at an appropriate position in the rack.			
3	The mounting brackets are fixed to the mount angles tightly.			

Installing the DVS4016-IN on a Workbench

If you do not have a standard 19-inch rack, you can install your DVS4016-IN on a workbench.

Preparing for the Installation

- Make sure the workbench is sturdy enough to hold the DVS4016-IN, its accessories and the cables.
- Make sure the workbench is well grounded and is stable.
- The DVS4016-IN is shipped with feet. You need to remove the stickers from the feet and fasten the feet to the right positions on the bottom of the DVS4016-IN.

Installation Procedure

1. Move the DVS4016-IN to the front of the workbench.
2. Lift the DVS4016-IN a little higher than the workbench and place it on the workbench.

CAUTION!

- To ensure effective heat dissipation, keep at least 10 cm (3.94 in.) of clearance around the DVS4016-IN.
- Do not place any object on the DVS4016-IN.

Connecting Cables

Cabling Requirements

Route and bundle different types of cables (power cables, signal cables, and ground wires) separately. You can bundle the long cables with cable ties, and stick labels to the cables for indication.

If your DVS4016-IN is installed in a 19-inch rack, you can lay the cables either over the top or below the bottom of the rack according to the actual situation (whether the signal cables of the machine room are wired on the rack top or below the rack bottom).

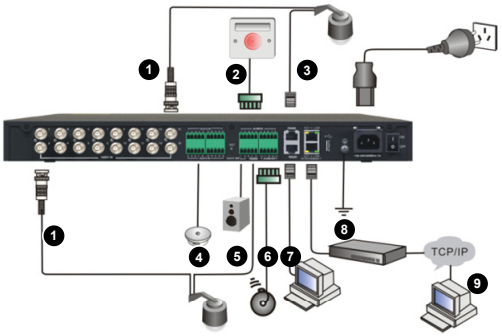
CAUTION!

- Before connecting the cables, ensure that the device is already powered off to avoid bodily injury or equipment damage caused by incorrect cable connection.
- Ensure that all external cables of the device meet relevant standards. For details about cable selection, refer to *DVS/DC Cable Connection Guide*.
- Do not bundle cables near the heat dissipation hole for fear of premature aging of cables.
- Fasten the cables near the DVS4016-IN and keep the cables loose between the ports and the fasten points.

Connecting Cables to Ports on the Rear Panel

Connect to other devices as needed. For how to connect to another device, refer to related documents of the device.

Figure 2-4 Connecting cables to ports on the rear panel



1: PTZ camera
2: Alarm input device, such as a temperature alarm input device
3: Power source
4: Pick-up
5: Speaker
6: Alarm output device
7: Connecting to a serial device (such as a PC) through a serial cable
8: Ground
9: Connecting to a network through a network cable

Connecting the Ground Wire

WARNING!

To prevent bodily injury and equipment damage caused by lightning and interference, the DVS4016-IN must be grounded properly.

1. As shown in Figure 2-5, connect one end of the ground wire to the ground terminal on the DVS4016-IN.

Figure 2-5 Connect the ground wire

	1: Grounding screw
	2: Ground wire

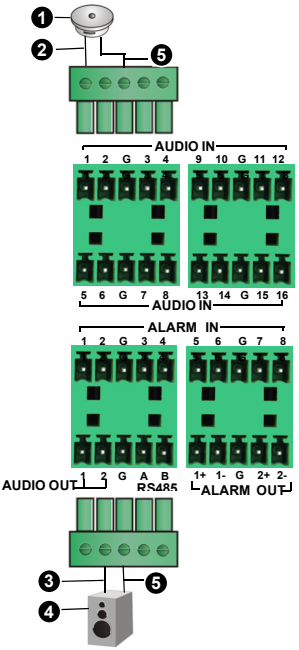
2. Connect the other end of the ground wire to a grounding bar.

NOTE!

Generally, a rack has a set of grounding bars, where you can connect the ground wire. In the actual installation, you may connect the ground wire properly depending on the conditions at the site. For details, refer to *DVS/DC Cable Connection Guide*.

Connecting the Audio Cables

Figure 2-6 Connecting the audio cables



1: Audio input device (for example, pickup)

2: Audio input line

3: Audio output line

4: Audio output device (for example, speaker)

5: Ground wire

Figure 2-7 Phoenix contact port

Terminal	Description
AUDIO IN:1–16	Audio input terminals 1–16
AUDIO OUT:(1, 2)	Audio output terminals
G	Ground

Alarm Cable Connection

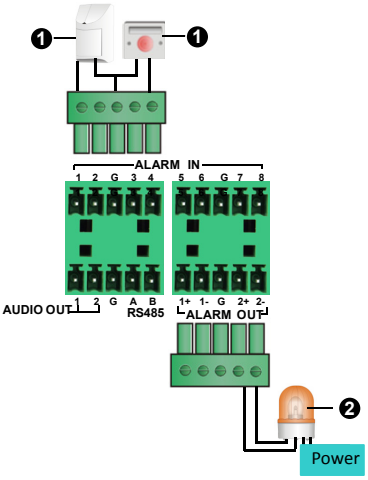
Connect the DVS4016-IN alarm cable as shown in Figure 2-8. The figure is for illustration only.

- Connect the alarm input terminals (1 through 8) on the phoenix contact port to eight alarm input devices. Figure 2-8 only shows the connection of two channels as an example. The connections of the other channels are similar. In practice, make sure the connection is consistent with the external input ports configured on the Web interface.
- Connect the two pairs of alarm output terminals (1+, 1-, through 2+, 2-) of the phoenix contact port to four alarm output channels. The positive/negative symbols are for distinction instead of for representing the polarity. Meanwhile, make sure the connection is consistent with the Boolean output channels configured on the Web interface.
- The ground terminals (marked G) of the phoenix contact port are the same. Use the most convenient one in connection. Note that multiple alarm devices can share one ground terminal.

CAUTION!

To work with the DVS4016-IN, the operating voltage and current of the power supply for the Boolean alarm output device are no more than 12 VDC and 0.7 A, respectively..

Figure 2-8 Alarm cable connection



1: Normally-on/Normally-off Boolean alarm input device, such as an audio or temperature alarm device

2: Normally-on Boolean alarm output device, such as an alarm LED (The alarm LED supports multiple connection modes. Here, only one connection mode is shown as an example.)

Table 2-2 Phoenix contact port description

Terminal	Description
ALARM IN :1, 2, 3, 4, 5, 6, 7, 8	Alarm signal output 1–8
ALARM OUT:(1+, 1-), (2+, 2-)	Alarm signal output 1–2
G	Ground

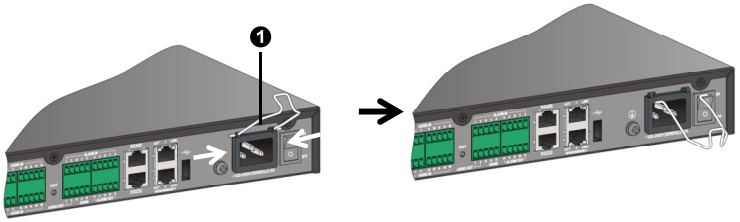
Connecting the AC Power Cable

WARNING!

Before connecting the power cable, ensure that the power switch of the device is off to avoid bodily injury or equipment damage caused by electric power.

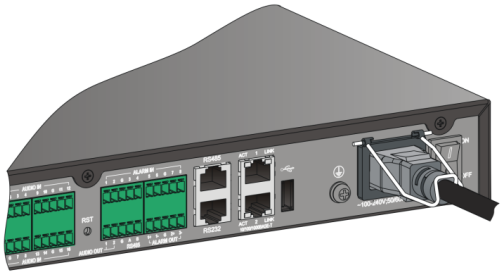
1. Take out the power cable-retention clip from the package and install it on the DVS4016-IN as shown in Figure 2-9.

Figure 2-9 Installing the power cable-retention clip



2. Connect the AC power cable and make the cable-retention clip to hold the power cable tightly, as shown in Figure 2-10.

Figure 2-10 Connect the AC power cable



WARNING!

You are recommended to connect the power cable to a single phase three wire power socket. Make sure that the neutral point of the power socket is properly grounded and the neutral points in buildings are already grounded in construction.

Connecting the PTZ

You can connect the PTZ through the RS-485 port in PTZ control mode on the DVS4016-IN. For details about how to connect the PTZ control cable, refer to *DVS/DC Cable Connection Guide.*

Connecting a Third-Party Device

You can connect a third-party device through the RS-485 port in transparent mode on the DVS4016-IN. For details about how to connect the serial cable, refer to *DVS/DC Cable Connection Guide.*

RS-232 Serial Cable Connection

You can connect a serial device such as a PC through the RS232 port on the DVS4016-IN. For details about how to connect the serial cable during device maintenance, refer to *DVS/DC Cable Connection Guide*.

Verifying Installation

WARNING!

Before performing the verification, make sure that the power is disconnected, for fear of bodily injury or equipment damage caused by incorrect cable connection.

- Check that the DVS4016-IN is installed securely with all screws fixed tightly.

- Check that no object is placed on the chassis of the DVS4016-IN.
- Check that the power to use meets the requirements of the DVS4016-IN, according to Table 4-1.
- Check that the ground wire is properly connected and all cables are connected correctly.

Starting Up the DVS4016-IN

After verifying installation, you can power up the device. Check the operation status of the DVS4016-IN according to Table 1-1.

3 Logging In to and Logging Out of the DVS4016-IN

You can manage and maintain your DVS4016-IN very conveniently through web interfaces.

Before you log onto the DVS4016-IN through the web interface, make sure that:

- The DVS4016-IN is operating normally.
- The client PC and the DVS4016-IN can communicate with each other.
- The client PC is installed with Microsoft Internet Explorer 7.0 or higher.
- The client PC does not use a proxy server for its IE browser.

Of the DVS4016-IN, the default IP address is 192.168.0.13, the subnet mask is 255.255.255.0, and the default gateway address is 192.168.0.1.

For your first login, use **admin** as both the username and password.

Follow the steps below to log into the web interface of the DVS4016-IN:

1. Launch the IE browser on the client PC, type the IP address of the DVS4016-IN in the address bar, and press **Enter.**
2. On the login page, type the username and password, and click **Login** to enter the web interface.

You can click a node in the navigation tree and then click a tab on the right pane to enter the corresponding configuration page.

For information about initial configuration and other configurations, please click the **Help** in the navigation tree

For your first login, use **admin** as both the username and password. We recommend you to change the default password by selecting **Device** > **Password** after your first login.

To log out of the device, click **Exit** in the navigation tree and confirm your operation.

4 Technical Specifications

For more information about technical specifications of the DVS4016-IN, refer to the product brochure.

Table 4-1 Technical specifications

Item	DVS4016-IN series
Physical dimensions (H × W × D)	43.6 × 440 × 240 mm (1.72 × 17.32 × 9.45 in.)
Weight	<3 kg (6.61 lb.)
Operating voltage	100 VAC to 240 VAC, 50 Hz/60 Hz
Maximum consumption	33W
Operating temperature	-10°C to 55°C (14°F to 131°F)

Item	DVS4016-IN series
Operating humidity (non-condensing)	5% to 95%
Storage temperature	–40°C to +70°C (–40°F to +158°F)
Storage humidity (non-condensing)	5% to 95%
Altitude	–60 to +4000 meters (–196.85 to +13123.36 ft.)

CAUTION!

The video encoding rate and resolution depend on the actually selected channel number and stream relation. For more information, see the corresponding Web configuration page on the device.

WARNING!

If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, you might be required to take corrective actions.

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