



VIDEOJET decoder 7000

VJD-7000



BOSCH

en Installation Manual

Table of contents

1	Safety	4
1.1	Electric shock hazard	4
1.2	Installation and operation	4
1.3	Maintenance and repair	4
1.4	Firmware and software	5
2	Short information	6
2.1	About this manual	6
2.2	Conventions in this manual	6
2.3	Intended use	6
2.4	EU Directives	6
2.5	Rating plate	7
3	System overview	8
3.1	Parts included	8
3.2	Overview of functions	8
3.3	Connections, controls and displays	11
4	Installation	13
4.1	Preparations	13
4.2	Mounting	14
5	Connection	15
5.1	Sequence of connections	15
5.2	Connecting monitors	15
5.3	Establishing the network connection	15
5.4	Connecting audio	15
5.5	Connecting the power supply	16
5.6	Power on/power off	16
6	Configuration	17
6.1	Setup	17
6.2	Setup using Bosch Video Client	17
7	Troubleshooting	19
7.1	Contact	19
7.2	General malfunctions	19
7.3	Power light and LEDs	19
8	Maintenance	21
8.1	Updates	21
8.2	Repairs	21
9	Decommissioning	22
9.1	Transfer	22
9.2	Disposal	22
10	Technical data	23
10.1	Electrical	23
10.2	Mechanical	23
10.3	Environmental conditions	23
10.4	Certifications and approvals	23
10.5	Standards	24
	Index	25

1 Safety

1.1 Electric shock hazard

- Never attempt to connect the unit to any power network other than the type for which it is intended.
- Use only the power supply unit that is included.
- Connect the unit to an earthed mains socket-outlet.
- Never open the housing.
- Never open the housing of the power supply unit.
- If a fault occurs, disconnect the power supply unit from the power supply and from all other units.
- Install the power supply and the unit only in a dry, weather-protected location.
- If safe operation of the unit cannot be ensured, remove it from service and secure it to prevent unauthorized operation. In such cases, have the unit checked by Bosch Security Systems.

Safe operation is no longer possible in the following cases:

- if there is visible damage to the unit or power cables,
- if the unit no longer operates correctly,
- if the unit has been exposed to rain or moisture,
- if foreign bodies have penetrated the unit,
- after long storage under adverse conditions, or
- after exposure to extreme stress in transit.

1.2 Installation and operation

- The relevant electrical engineering regulations and guidelines must be complied with at all times during installation.
- Relevant knowledge of network technology is required to install the unit.
- Before installing or operating the unit, make sure you have read and understood the documentation for the other equipment connected to it, such as monitors. The documentation contains important safety instructions and information about permitted uses.
- Perform only the installation and operation steps described in this manual. Any other actions may lead to personal injury, damage to property or damage to the equipment.

1.3 Maintenance and repair

- Never open the housing of the unit. The unit does not contain any user-serviceable parts.
- Never open the housing of the power supply unit. The power supply unit does not contain any user-serviceable parts.
- Ensure that all maintenance or repair work is carried out only by qualified personnel (electrical engineers or network technology specialists). In case of doubt, contact your dealer's technical service center.



Warning!

Risk of explosion of battery

Risk of explosion if battery is replaced by an incorrect type. Replace only with the same type as recommended by the manufacturer. Dispose of used batteries according to the instructions.

1.4 Firmware and software

- VIDEOJET decoder 7000 may only be operated with the installed firmware and software products.
- It is not allowed to install additional firmware or software.

2 Short information

2.1 About this manual

This manual is intended for persons responsible for the installation and operation of a VIDEOJET decoder 7000 unit. International, national and any regional electrical engineering regulations must be followed at all times. Relevant knowledge of network technology is required. The manual describes the installation of the unit.

2.2 Conventions in this manual

In this manual, the following symbols and notations are used to draw attention to special situations:

**Warning!**

Use of this signal word and symbol indicates that failure to follow the safety instructions described may endanger persons. It indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**Caution!**

Use of this signal word and symbol indicates that failure to follow the safety instructions described may endanger persons. It indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**Notice!**

Use of this signal word and symbol indicates that failure to follow the safety instructions described may cause damage to the unit or other equipment or may lead to data loss.

2.3 Intended use

The VIDEOJET decoder 7000 High Definition video decoder receives and decodes video and audio signals over data networks (Ethernet LAN, Internet) and displays High Definition and Standard Definition video from cameras and encoders using H.264 or MPEG-4 encoding at up to 30 images per second. The unit is intended for use with CCTV systems. Other applications are not permitted.

In the event of questions concerning the use of the unit which are not answered in this manual, please contact your sales partner or:

Bosch Sicherheitssysteme GmbH
Robert-Bosch-Ring 5
85630 Grasbrunn
Germany
www.boschsecurity.com

2.4 EU Directives

VIDEOJET decoder 7000 complies with the requirements of EU Directives 89/336 (Electromagnetic Compatibility) and 73/23, amended by 93/68 (Low Voltage Directive).

2.5 Rating plate

For exact identification, the model name and serial number are inscribed on the bottom of the housing. Please make a note of this information before installation, if necessary, so as to have it to hand in case of questions or when ordering spare parts.

3 System overview

3.1 Parts included

- 1 VIDEOJET decoder 7000 High Definition video decoder
- 1 international power supply unit with EU and US power cord
- 4 screw-on stands
- 1 monitor mounting kit
- 1 Quick Installation Guide
- 1 Safety Hints
- Adhesive MAC address labels



Notice!

Check that the delivery is complete and in perfect condition. Arrange for the unit to be checked by Bosch Security Systems if you find any damage.

3.2 Overview of functions

High Definition video decoder

VIDEOJET decoder 7000 displays High Definition (HD) and Standard Definition (SD) video from cameras and encoders using H.264 or MPEG-4 encoding at up to 30 images per second over IP networks.

It can flawlessly decode four 1080p30 streams, or four H.264 720p60 streams, or six H.264 720p30 streams, all at 10 Mbps. Alternatively, it can simultaneously decode twelve H.264 SD streams at up to 6 Mbps from fast-moving AUTODOME cameras with the highest clarity. When H.264 SD streams at up to 2.5 Mbps from medium activity scenes are connected, up to 20 streams can be displayed.

VIDEOJET decoder 7000 can drive two HD displays directly, each with an independently configurable screen layout, and so is ideally suited for applications with flat-screen monitor walls at a moderate cost-per-monitor.

Compact in size in relation to its decoding power, VIDEOJET decoder 7000 is perfect for any display application that requires space-saving solutions.

Remote control

Control the viewing mode remotely and establish the video connections using comprehensive Bosch video management systems.

Operating system

VIDEOJET decoder 7000 is based on the latest Intel H77 Express Chipset on a Mini-ITX board with a Core i3 CPU running at 3.1 GHz. The system has a 16 GB Flash module as boot medium for operating system and application. It uses a Gigabyte Ethernet port.

The system runs a tailored and Bosch-branded Microsoft Windows 7 Embedded operating system, and Monitor Wall software based on HD-capable VideoSDK 5, both fine-tuned for HD video decoding support.

VIDEOJET decoder 7000 provides three monitor outputs, DVI-I, HDMI, and DP; two of these can be used at the same time.

High performance

Transmit HD IP video to a high-performance VIDEOJET decoder 7000 and present it with ultimate clarity on large, flat-screen HD monitors, for example, high-performance 32" or 55" Bosch HD LCD monitors.

VIDEOJET decoder 7000 is capable of flawlessly decoding four full HD 1080p30 streams or four 720p60 streams or six 720p30 streams, for example, displayed in one of the pre-defined and on-the-fly switchable layouts. It can handle up to twelve SD streams at up to 6 Mbps with full resolution and frame rate, and display it in e.g. 1+5 views on both 16:9 monitors.

At a lower resolution, bit rate, or frame rate, the decoder is capable of displaying up to 60 video streams, arranged in various selectable screen layouts.

Layouts can be switched at any time during operation, initiated by the controlling video management system. Layout switching can be based on alarm scenarios.

VIDEOJET decoder 7000 supports landscape and portrait video and monitors. Layouts will adapt automatically to optimally utilize the available screen space.

Access security

The decoders offer various security levels for accessing the network, the unit, and the data channels. System access is password-protected with two levels.

For total data protection, the decoder supports SSL where each video communication channel is independently encrypted with up to 256-bit keys.

Malware resistance

VIDEOJET decoder 7000 has been designed to be resistant to viruses and other malware. To prevent security holes, the installed Bosch software limits transactions to operation and maintenance and the embedded operating system is tailored to the needs. No other than Microsoft and Bosch software is running on the decoder. Its firewall performs at the highest security level and allows communication only for a minimum of needed services. All access is password-protected, USB and other storage devices are disabled, and update files are authenticated and encrypted, thus putting robustness against malicious software to the highest degree.

Easy upgrade

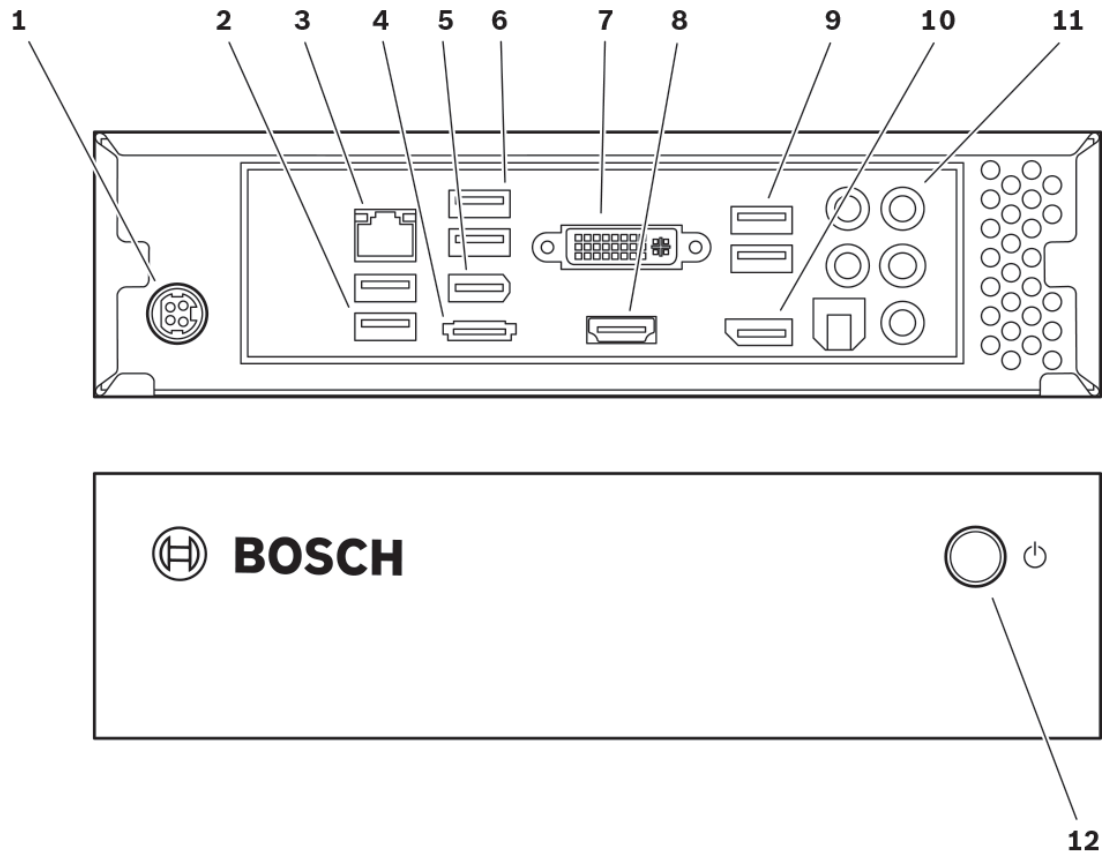
Remotely upgrade the decoder whenever new firmware or software becomes available. This ensures up-to-date products, thus protecting investment with little effort.

Summary

VIDEOJET decoder 7000 provides the following main functions:

- Video and audio reception over IP data networks
- H.264 or MPEG-4 decoding at up to 30 images per second
- Decoding of H.264 High Definition streams for up to four with 1080p30, or four with 720p60, or six 720p30 streams, all at 10 Mbps, at the same time
- Decoding of up to twelve H.264 Standard Definition streams at up to 6 Mbps at the same time scaling to up to 20 streams at up to 2.5 Mbps
- Integrated Ethernet port (10/100/1000 Base-T)
- Configuration and remote control of all internal functions via TCP/IP, also secured via HTTPS
- Password protection to prevent unauthorized connection or configuration changes
- Convenient maintenance via uploads
- Flexible encryption of control and data channels
- Bidirectional audio (mono) for line connections
- Audio coding according to international standard G.711

3.3 Connections, controls and displays



- 1** Power supply socket
for connecting the power supply unit that is included
- 2** USB ports
- 3** RJ45 socket
for connecting to an Ethernet LAN (local network), 10/100/1000 MBit Base-T
- 4** eSATA port
disabled
- 5** IEEE 1394a port
disabled
- 6** USB ports
- 7** DVI-I monitor socket
for connecting a monitor via DVI-I cable
- 8** HDMI monitor socket
for connecting a monitor via HDMI cable
- 9** USB ports
- 10** DP monitor socket
for connecting a monitor via DP cable

- 11** Audio connections (mono)
3.5 mm / 1/8 in stereo sockets line-out/line-in for audio connections
- 12** Main switch
for switching the unit on and off, lights up blue when the unit is switched on

See also

- *Power light and LEDs, page 19*

4 Installation

4.1 Preparations

VIDEOJET decoder 7000 and the power supply unit are both intended for use indoors only. Select a suitable location for installation that guarantees to meet the environmental conditions.

**Notice!**

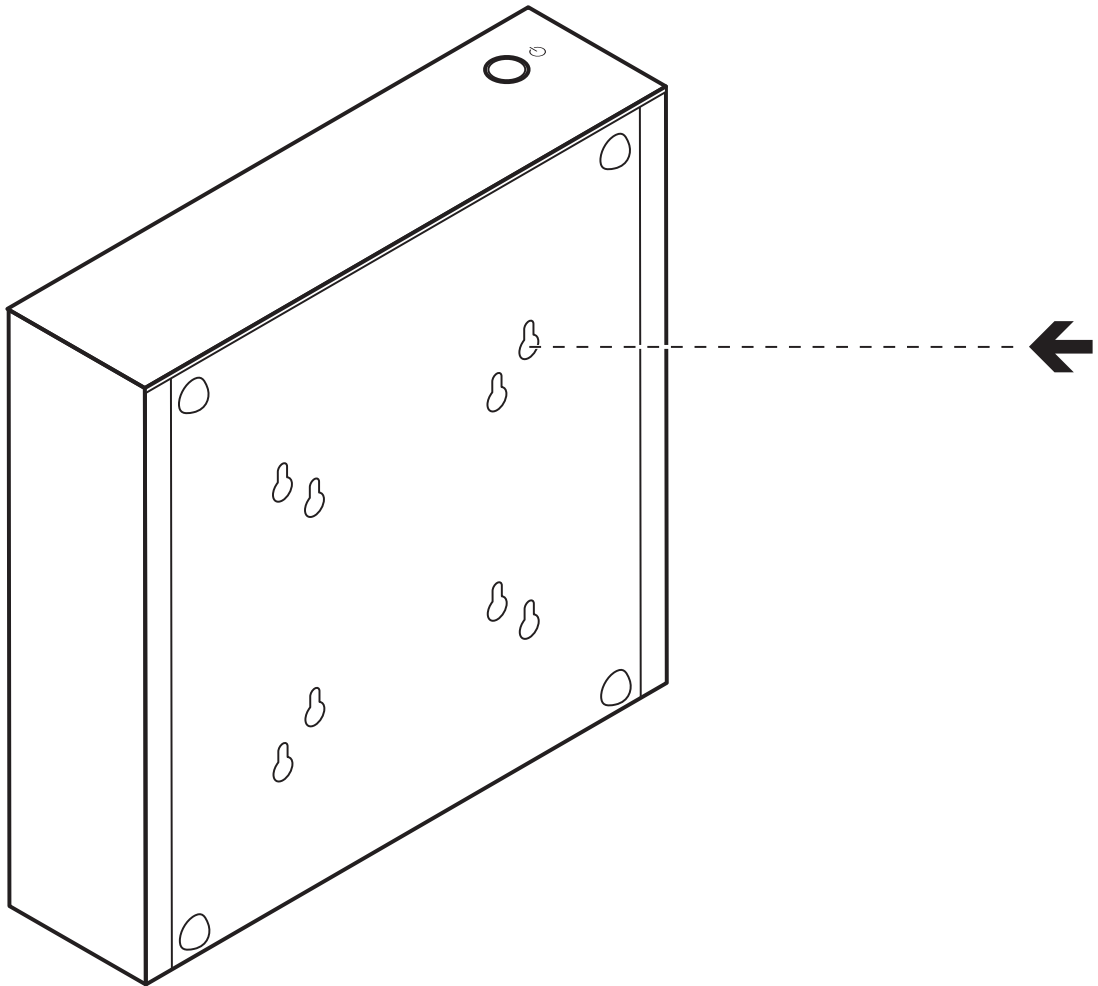
The ambient temperature for the unit must be between 0 and +40 °C (+32 and +104 °F). The relative humidity must not exceed 90%.

The unit and the power supply unit generate heat during operation, so you should ensure that there is adequate ventilation and enough clearance between both units and heat-sensitive objects or equipment. Please note the maximum heat value of 460 BTU/h per unit without the power supply.

Please ensure the following installation conditions:

- Do not install the unit or the power supply unit close to heaters or other heat sources. Avoid locations exposed to direct sunlight.
- All ventilation openings must be kept free from blockings. Do not stack several units one on top of each other.
- Allow sufficient space for running cables.
- Ensure that both the unit and the power supply unit have adequate ventilation. Bear the total heat output in mind, particularly when installing multiple units in a switch cabinet.
- When making connections, use only the cables supplied or use appropriate cables immune to electromagnetic interference.
- Position and run all cables so that they are protected from damage, and provide adequate cable strain relief where needed.
- Avoid impacts, blows, and severe vibrations that exceed the specification limits, as these can irreparably damage the unit.

4.2 Mounting



You can mount the decoder to an approved monitor using the supplied mounting kit.



Caution!

Injuries by falling equipment

The mounting location must be able to reliably hold the unit. The load-bearing capacity must be adequate for four times the weight of the unit.

If mounting the unit to the back of a monitor, use only monitors that are approved by Bosch Security Systems. You can obtain a list of approved monitors from your supplier or directly from Bosch Security Systems. This list is constantly being updated and extended.

When mounting the unit on the rear side of a monitor, ensure that there is adequate ventilation and enough clearance between both units and walls or other monitors, especially with several monitors mounted side by side on a wall.

As an alternative you can screw on the four stands supplied to the bottom of the decoder and place the unit upon an appropriate flat surface from which it cannot fall down.

5 Connection

5.1 Sequence of connections



Notice!

Do not connect the decoder to the power supply until all other connections have been made. Otherwise the automatic assignment of the IP address will fail and a faulty monitor resolution will be set. This may lead to serious damage of the unit.

5.2 Connecting monitors

You must connect a suitable monitor to the decoder. You can obtain a list of approved monitors from your supplier or directly from Bosch Security Systems. This list is constantly being updated and extended.

The unit provides three monitor outputs, DVI-I, HDMI and DP; two of these can be used at the same time.



Notice!

When connecting a monitor to the DVI-I output, do not use a DVI-to-VGA adapter. The monitor must be equipped with a DVI input.

1. Decide for up to two monitor connections.
2. Connect each monitor using the respective monitor cable. When connecting to the DVI-I monitor socket use a monitor cable with DVI-I plugs.

5.3 Establishing the network connection

You must connect the decoder to a 10/100/1000 Base-T network using a standard UTP category 5 cable with RJ45 plugs.

- ▶ Connect the unit to the network via the RJ45 socket.

When the decoder is powered after finalizing all connections, the LEDs on the RJ45 socket light up to indicate that the network connection has been set up correctly. Flashing green, the left LED signals that data packages are being transmitted over the network.

See also

- *Power light and LEDs, page 19*

5.4 Connecting audio

The decoder has an audio port for audio line signals (input and output, both mono).

The audio signals are transmitted two-way and in sync with the video signals. As a result, you can connect a speaker, for example. The following specifications should be complied with in all cases.

1 × Line In (blue ring):	Impedance 9 kohm typ., 5.5 V _{p-p} max. input voltage
1 × Line Out (green ring):	Impedance 16 ohm min., 3 V _{p-p} max. output voltage

The stereo plug must be connected as follows:

Contact	Function
Tip	Line Out
Middle ring	Line In
Lower ring	Ground

1. Connect an audio source with line level to the Line In socket (blue ring) with a 3.5 mm (1/8 in) stereo plug.
2. Connect a pair of speakers to the Line Out socket (green ring) with a 3.5 mm (1/8 in) stereo plug.

5.5 Connecting the power supply

Power is supplied via a separate power supply unit that is part of the delivery. It offers two power cords, one for EU and one for US.



Notice!

Use only the power supply unit that is included, together with the suitable power cord. Connect the unit to an earthed mains socket-outlet.

Do not connect the decoder to the power supply until all other connections have been made.

1. Connect the decoder to the power supply unit.
2. Select the suitable power cord and plug this into the power supply unit and then into the mains.

The unit is now ready for use.

5.6 Power on/power off

VIDEOJET decoder 7000 is equipped with a power switch on its front panel.

1. Press the power switch on the front once to switch on the unit. The blue light inside the switch lights up.
2. To switch off press the power switch again. The blue light turns off.
3. Switch on the monitor in order to see the user interface after the boot-up procedure.

All information regarding the functions and the operation can be found in the relevant documentation of Monitor Wall, Bosch Video Management System, or Video Client.

6 Configuration

6.1 Setup

Before you can operate the unit within your network, it must have a valid IP address for your network and a compatible subnet mask.



Notice!

As a default DHCP is enabled in the unit's network settings.

With an active DHCP server in the network you must know the IP address assigned by the DHCP server to operate the unit.

The following default address is preset at the factory: 192.168.0.1

The setup procedure is carried out via our Video Client software or other management systems. All information regarding the configuration can be found in the relevant documentation of the video management system in use.

6.2 Setup using Bosch Video Client

For the current version of our Video Client management software, access your Bosch product catalog on the Internet. This program allows you to implement and set up the unit in the network quickly and conveniently.



Installing the program

1. Download Video Client from the Bosch product catalog on the Internet.
2. Unzip the file.
3. Double-click the installer file.
4. Follow the instructions on the screen to complete the installation.

Configuring the unit

You can start Video Client immediately after installation.



1. Double-click the  icon on the desktop to start the program. Alternatively, start the application via the **Start** button and the **Programs** menu (path: Start/Programs/Bosch Video Client/Bosch Video Client).
2. When the program is started for the first time, a wizard opens to help you detect and configure devices on the network.
3. If the wizard does not start automatically, click  to open the Configuration Manager application. Then, click **Configuration Wizard...** on the **Tools** menu.
4. Follow the instructions given in the **Configuration Wizard** window.

Software restart

You can trigger the software restart directly with the assistance of the Configuration Manager application.

1. Open the Configuration Manager application.
2. Right-click the entry for the unit in the list in the left section of the window and select the **Reset** command from the context menu.

Additional parameters

You can check and set additional parameters with the assistance of the Configuration Manager application in Bosch Video Client. You can find detailed information on this in the documentation for these applications.

Note that the audio function is not activated by default. To use audio connections activate the corresponding setting when configuring the unit.

7 Troubleshooting

7.1 Contact

If you are unable to resolve a malfunction, please contact your supplier or systems integrator, or go directly to Bosch Security Systems Customer Service.

The following tables are intended to help you identify the causes of malfunctions and correct them where possible.

7.2 General malfunctions

Malfunction	Possible causes	Recommended solution
No image on the monitor.	Monitor settings.	Check the input selection at the monitor.
	Faulty cable connections.	Check all cables, plugs and connections.
	Monitor fault.	Connect another monitor to the unit or use another monitor connection.
No audio.	Hardware fault.	Check that all connected audio units are operating correctly.
	Faulty cable connections.	Check all cables, plugs and connections.
The unit is not operational after a firmware upload.	Power failure during programming by firmware file.	Have the unit checked by Customer Service and replace it, if necessary.
	Incorrect firmware file.	Have the unit checked by Customer Service and replace it, if necessary.
The power light is not lit.	Unit not switched on.	Press the main switch on the front panel.
	Unit not connected to the power supply unit.	Check all cables, plugs and connections.
	Power supply unit not connected to the mains outlet.	Check all cables, plugs and connections.

7.3 Power light and LEDs

VIDEOJET decoder 7000 has a light inside the power switch on its front and two LEDs on the RJ45 socket on the rear that show the operating status:

Power light

Off: The unit is switched off or not connected to the power supply.
 Lights up blue: The unit is switched on.

RJ45 socket LEDs

Left LED:	Off: LAN connection not established. Green: LAN connection established. Blinking green: LAN activity occurring.
Right LED:	Off: 10 Mbps data rate. Green: 100 Mbps data rate. Yellow: 1000 Mbps data rate.

8 Maintenance

8.1 Updates

Firmware and software updates are carried out via the Configuration Manager application or other management systems in use. Please refer to the relevant documentation.

8.2 Repairs

- Never open the housing of the unit. The unit does not contain any user-serviceable parts.
- Never open the housing of the power supply unit. The power supply unit does not contain any user-serviceable parts.
- Ensure that all maintenance or repair work is carried out only by qualified personnel (electrical engineers or network technology specialists). In case of doubt, contact your dealer's technical service center.

9 Decommissioning

9.1 Transfer

VIDEOJET decoder 7000 should only be passed on together with this installation manual.

9.2 Disposal

Your Bosch product is designed and manufactured with high-quality materials and components which can be recycled and reused.



This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from your household waste.

In the European Union, there are separate collection systems for used electrical and electronic products. Please dispose of this equipment at your local community waste collection/recycling center.

10 Technical data

10.1 Electrical

Power supply	Wide-range, external, included in the box
Input voltage	100 to 240 V AC, 50/60 Hz
Power consumption	Approx. 60 W, 135 W max

10.2 Mechanical

Dimensions (H × W × D)	58 × 225 × 217.8 mm (2.283 × 8.858 × 8.575 in), without stands
Weight	Approx. 3 kg (6.6 lb)
VESA mount	75 × 75 mm or 100 × 100 mm (2.953 × 2.953 in or 3.937 × 3.937 in)
Video	2 of 3 outputs simultaneously, connector DVI-I, or HDMI, or DP, no VGA support
Audio	1 × mono line in, 1 × mono line out, 1 × microphone input, 1 × head-set output 4 × 3.5 mm stereo jack connector
Signal line in	Impedance 9 kohm typical, 5.5 V _{p-p} max
Signal line out	Impedance 16 ohm min, 3 V _{p-p} max
Signal microphone	2 kohm typical, 2.8 V _{p-p} max. at -2 dB, 2.3 V _{p-p} typical
Front indicator	1 × power switch with integrated blue LED
Rear connectors	1 × power connector 6 × USB 1 × Ethernet port 1 × DVI-I monitor output 1 × HDMI monitor output 1 × DP monitor output 4 × audio connector

10.3 Environmental conditions

Operating temperature	0 °C to +40 °C (+32 °F to +104 °F)
Relative humidity	0 to 90% atmospheric humidity, non-condensing
Thermal value	Approx. 210 BTU/h, 460 BTU/h max

10.4 Certifications and approvals

Safety	IEC 60950
Electromagnetic compatibility	EN55022 EN55024 FCC 47 CFR Chapter 1 Part 15
Approvals	CE, UL

10.5

Standards

Video	H.264 (ISO/IEC 14496-10), MPEG-4
Video data rates	HD: up to 20 Mbps, single stream SD: up to 6 Mbps per stream
GOP structure	I, IP, IBBP
Monitor resolutions	DVI-I: 1920 × 1200 max (WUXGA) at 60 Hz HDMI: 1920 × 1200 max (WUXGA) at 60 Hz DP: 2560 × 1600 max (WQXGA) at 60 Hz
Audio	G.711; 300 Hz to 3.4 kHz
Audio data rate	80 kbps at 8 kHz sampling rate
Ethernet	10/100/1000 Base-T, auto-sensing, half/full duplex, RJ45
Protocols	IPv4, UDP, TCP, HTTP, HTTPS, RTP/RTCP, IGMP V2/V3, ICMP, ARP, DHCP, SNMP, digest authentication
Encryption	TLS 1.0, SSL, DES, 3DES, AES

Index

A

Audio connections, 12, 15

C

Conventions, 6

D

Danger, 4

Default

IP address, 17

Default IP address, 17

DHCP, 17

E

Electromagnetic compatibility, 6

I

Identification, 7

Installation, 4

Installation conditions, 13

Installation location, 13

IP address

Default, 17

L

Low Voltage Directive, 6

M

Main functions, 10

Maintenance, 4, 21

N

Network, 15

Network connection, 11

O

Operation, 4

P

Parameters, 17

Power supply, 4, 16

Power switch, 16

R

Regulations, 6

Repair, 4, 21

S

Safety, 4

Serial number, 7

Software restart, 17

Symbols, 6

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