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# VideoJet X10/X20/X40 SN Video Encoder



- ▶ High-quality MPEG-4 video over IP
- ▶ Units with one, two, or four video inputs
- ▶ Built-in Intelligence-at-the-Edge
- ▶ Network-attached RAID storage via iSCSI
- ▶ Local recording on CF card or USB hard drive

The Bosch VideoJet X SN encoders belong to a family of high-performance, single, dual, or quad input CCTV video encoders that feature DVD-like quality MPEG-4 video, at up to 30 images per second, over IP networks. The units support PAL/NTSC sources and provide bidirectional audio communication in parallel to video. They are built into a housing that can be easily wall-mounted or rack-mounted. These powerful and flexible devices represent the cutting edge of high performance video over IP for CCTV today.

## Functions

### Viewing

View the VideoJet X SN encoder video on a PC using a web browser, in VIDOS, in the Bosch Video Management System, or integrate it into another video management system. By routing the IP video to external monitors such as a high performance VIP XD video decoder or a VIDOS monitor wall, you can present the video with ultimate clarity.

### Dual streaming

The VideoJet X SN encoders use dual streaming to generate two independent IP video streams per channel. This allows viewing and recording at two different quality levels to save disk space and bandwidth. On alarm, they can send an e-mail with JPEG images attached.

### Flexibility

VideoJet X SN encoders offer unparalleled recording flexibility. Stream video across the network and store it using Network Video Recorders (NVRs). Record locally on internal RAM, CompactFlash, or use an external USB hard drive. Network-attached RAID5 iSCSI storage devices can also be used. The built-in iSCSI support enables the VideoJet X SN encoders to act as conventional DVRs while streaming high performance live video across the network.

### Frame rates and resolution

When one or two inputs are used, the encoders deliver MPEG-4 video over IP at a full frame rate of 25 (PAL) or 30 (NTSC) images per second with up to 4CIF resolution on every channel. If four inputs are used the maximum frame rate is 12.5/15 images per second at 4CIF resolution.

The maximum frame rates listed in the table below depend on the resolution, picture content and movement, and the number of inputs used.

	4 inputs	2 inputs	1 input
4CIF	12.5/15 ips	25/30 ips	25/30 ips
2/3 D1	25/30 ips	25/30 ips	25/30 ips
2CIF	25/30 ips	25/30 ips	25/30 ips

*ips = frame rate in images per second*

**Recording profiles**

The encoders feature a highly flexible recording scheduler, providing up to 10 programmable recording profiles and allowing individually assigned camera profiles. With these profiles, you can accelerate the frame rate as well as increase the resolution on alarm, saving recording space during non-alarm periods.

**Reliability**

Designed for reliability, the VideoJet X SN encoders feature a wide range power supply, CF and USB ports, and fault-tolerant mass storage via iSCSI.

**Access security**

The VideoJet X SN encoders offer various security levels for accessing the network, the unit, and the data channels. As well as password protection with three levels, they support 802.1x authentication using a RADIUS server for identification. Web browser access can be secured by HTTPS using a SSL certificate that is stored in the unit. For total data protection each communication channel – video, audio, or serial I/O – can be independently AES encrypted with 128-bit keys once the Encryption Site License has been applied.

**Increased intelligence**

With built-in video content analysis, VideoJet X SN encoders reinforce the Intelligence-at-the-Edge concept where edge devices become increasingly intelligence. The VideoJet X SN comes with built-in MOTION+ video motion detection. This motion detection algorithm is based on pixel change and includes object size filtering capabilities and sophisticated tamper detection capabilities.

Bosch offers more advanced video content analysis (VCA) applications with its Intelligent Video Analysis (IVA). A licensable option, it bases the IVA algorithm on digital imaging technology that uses multi-level image analysis of pixel, texture, and motion (trajectory) changes.

**Easy upgrade**

Remotely upgrade the VideoJet X SN encoders whenever new firmware becomes available. This ensures up-to-date products, thus providing investment protection with little effort.

**Certifications and Approvals**

**Safety**

Region	Number
EU	IEC60950
USA	UL60950

**Electromagnetic compatibility**

Region	Number
EU	EN55103-1 Video and audio equipment
	EN50130-4 Alarm systems
	EN55022 ITE
	EN55024 ITE

**Environment**

Region	Number
EU	EN61000-3-2
	EN61000-3-3

**Installation/Configuration Notes**

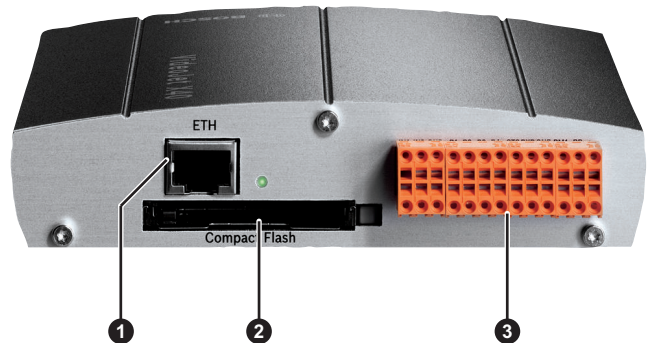
**Front connectors and indicators**



VideoJet X40 SN - front

- 1 USB
- 2 Video input 1 (2, 3, and 4 where applicable)
- 3 2-channel audio input (1 channel for X10)
- 4 1-channel audio output
- 5 LED CF (only operates if CF card is mounted)
- 6 LED Connect

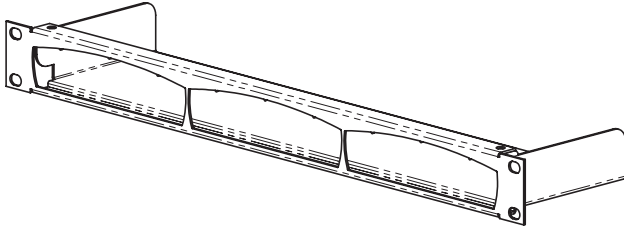
**Back connectors and indicators**



VideoJet X SN series - back

- 1 Ethernet
- 2 Compact flash slot
- 3 Alarm input, relay output, serial interface and power input on separate connector blocks

### Rack mounting kit (optional)



### Parts Included

#### Quantity Component

- |   |  |
|---|--|
| 1 | VideoJet X SN encoder                  |
| 1 | Quick installation guide               |
| 1 | CD Rom with software and documentation |
| 1 | Set of spring clamp contact connectors |

An optional power supply with primary adaptors for EU, US, UK, and AUS can be ordered separately.

### Technical Specifications

#### Electrical

Power supply	Stand-alone, exclusive, or external battery
Input voltage	10 to 30 VDC
Power consumption	X10: approx. 11 VA, fully equipped X20/X40: approx. 19 VA, fully equipped

#### Video

Video compression standards	MPEG-4, M-JPEG, JPEG
Video data rate	9.6 kbps to 6 Mbps per channel
Video resolution and frame rate (PAL/NTSC)	4CIF (704 x 576/480), 25/30 ips 4CIF (704 x 576/480), 12.5/15 ips, (X40: all 4 inputs used) 2CIF (704 x 288/240), 25/30 ips 2/3 D1 (464 x 576/480), 25/30 ips 1/2 D1 (352 x 576/480), 25/30 ips CIF (352 x 288/240), 25/30 ips QCIF (176 x 144/120), 25/30 ips
GOP structure	I, IP
Overall delay	120 ms
Video in	VideoJet X10: 1x BNC connector

VideoJet X20: 2x BNC connectors

VideoJet X40: 4x BNC connectors

Analog composite (NTSC or PAL)

75 ohm switchable, 0.7 to 1.2 Vpp

#### Audio

Audio standard	G.711; 300 Hz to 3.4 kHz
Audio data rate	80 kbps at 8 kHz Sampling Rate
Line in	Two mono channels via 3.5 mm stereo jack, 9 kohm typical, 5.5 Vpp max. (single channel only for X10)
Line out	Mono line output on 3.5 mm stereo jack, 3.0 Vpp at 10 kohm / 1.7 Vpp at 16 ohm typical

#### Network

Ethernet	Dual port 10/100 Base-T, auto-sensing, half/full duplex, RJ45
Protocols	RTP, Telnet, UDP, TCP, IP, HTTP, HTTPS, IGMP V2/V3, RTSP, ICMP, ARP, SNMP, SNMP (V1/V2c/V3 MIB-II), 802.1x
Encryption	TLS 1.0, SSL, AES (optional)

#### Control

Software update	Flash ROM, remote programmable
Configuration	Configuration Manager or web browser
RAM recording	32 MB total, 8 MB per channel

#### Connections

CompactFlash	1x CF slot for optional standard Type I/II CompactFlash memory card
USB port	1x USB 2.0 high-speed port, 2.5 W max. feed
Alarm in	4x (non-isolated closure contact type), max. activation resistance 10 ohm, 6 spring clamp contacts
Relay out	4x, 30 Vpp, 2 A, 8 spring clamp contacts
COM port	1x RS232/422/485, 6 spring clamp contacts

#### Mechanical

Dimensions (H x L x D)	142 x 33 x 178 mm (5.6 x 1.3 x 7 in)
Weight	Approx. 0.6 kg (1.3 lb)

#### Environmental

Operating temperature	0 °C to +50 °C (32 °F to +122 °F) ambient temperature
Humidity	20 to 80% atmospheric humidity, non-condensing
Heat value	X10: 37 BTU/h max., fully equipped X20/X40: 65 BTU/h max., fully equipped

**Ordering Information**

<b>VJT-X10SN VideoJet X10 Normal Temp</b> VideoJet X10 SN with 1 video input	<b>VJT-X10SN</b>
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<b>VJT-X20SN VideoJet X20 Normal Temp</b> VideoJet X20 SN with 2 video inputs	<b>VJT-X20SN</b>
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<b>VJT-X40SN VideoJet X40 Normal Temp</b> VideoJet X40 SN with 4 video inputs	<b>VJT-X40SN</b>
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**Accessories**

<b>VJT-XACC-PSN</b> VJX10/20/40 wide-range power supply	<b>VJT-XACC-PSN</b>
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<b>VJT-XACC-RMK VJT-X SN Rack-mount Kit for 3 Units</b> Rack mounting kit for 3 VJT-Xxx SN units.	<b>VJT-XACC-RMK</b>
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<b>DVA-12T-04050RA</b> iSCSI RAID5, 12 bay 1.5 TByte net capacity (4 hard drives installed)	<b>DVA-12T-04050RA</b>
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<b>DVA-12T-12050RA</b> iSCSI RAID5, 12 bay, 5.5 TByte net capacity (12 hard drives installed)	<b>DVA-12T-12050RA</b>
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**Software Options**

<b>VJT-X10SN-FS1</b> VideoJet X10SN IVMD 1.0 VCA License	<b>VJT-X10SN-FS1</b>
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<b>VJT-X20SN-FS1</b> VideoJet X20SN IVMD 1.0 VCA License 2CH	<b>VJT-X20SN-FS1</b>
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<b>VJT-X40SN-FS1</b> VideoJet X40SN IVMD 1.0 VCA License 4CH	<b>VJT-X40SN-FS1</b>
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<b>VJT-X10SN-FS3</b> VideoJet X10SN IVA 3.0 VCA License	<b>VJT-X10SN-FS3</b>
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<b>VJT-X20SN-FS3</b> VideoJet X20SN IVA 3.0 VCA License, valid for 2 channels	<b>VJT-X20SN-FS3</b>
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<b>VJT-X40SN-FS3</b> VideoJet X40SN IVA 3.0 VCA License, valid for 4 channels	<b>VJT-X40SN-FS3</b>
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<b>MVC-FENC-AES BVIP AES 128 Bit Encryption</b> BVIP AES 128-bit encryption site license. This license is required only once per installation. It enables encrypted communication between BVIP encoders, decoders and management stations.	<b>MVC-FENC-AES</b>
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