Video Recorder 430/451 Series

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BOSCH

Invented for life

- ▶ 4-Channel real-time H.264 recording
- ▶ View and record video in CIF, 2CIF, or 4CIF resolution
- ▶ Built-in web viewer for remote viewing, playback, control, and configuration
- ▶ Supports VGA and analog monitor output (up to 1280x1024)
- ▶ Dual streaming for local recording and remote viewing

The Bosch Video Recorder 400 Series is a 4 channel digital recorder that uses the latest H.264 compression technology. With a built-in web server for browser-based video management, the 400 Series is a fully integrated, stand-alone video solution that's ready to go, straight out of the box.

The 400 Series features a highly reliable embedded design that minimizes maintenance and operational costs. The unit has four audio inputs and a DVD writer.

System overview

The Bosch 400 Series takes advantage of the latest H. 264 compression technology that allows for more efficient video compression. This reduces the amount of storage and bandwidth needed while also producing better image quality. The 400 Series records multiple video and audio signals while simultaneously providing live multi-screen viewing and playback. Comprehensive search and playback functions provide quick recall and viewing of recorded video.

Recording

Ease of use is key to the 400 Series design. Simply connect the cameras, apply power, and the unit begins recording automatically. All recording takes place in the background with no operator intervention required.

The use of H.264 compression reduces the file size of recordings by as much as 30% compared to standard MPEG-4, without sacrificing image quality. The Bosch Video Recorder 400 Series can record at up to 25 (PAL) / 30 (NTSC) images per second, per channel at CIF resolution. Recording at 2CIF and 4CIF resolution is also possible by reducing the recording image rate settings. The recording rate and quality are individually configurable per channel for maximum flexibility.

If required, alarm recordings (input and motion) and continuous recordings can be split over two partitions. An overwrite mode can then be selected separately for each partition.

Dome Control

The 400 Series can control pan/tilt/zoom (PTZ) equipment via RS-232 and RS-485 serial communications. PTZ devices, including the Bosch AutoDome Modular and AutoDome Easy II, are supported.

Alarms

The unit has extensive alarm handling functions and telemetry control. Alarm functions include motion detection in user-definable areas of the image on any camera input.

Local control and operation

The unit can be easily operated and programmed via the on-screen display menu system using either the front panel control keys, the mouse, or the remote control. Two monitor outputs provide full-screen, quad (main monitor only), and sequenced viewing. Looping auto-terminating video inputs and outputs, audio inputs and output, and alarm inputs and outputs are located on the rear panel. The VGA connector provides an output for monitor A (main monitor). A CVBS video output is also provided for monitor B (spot monitor). Monitor A displays live and playback in full-screen or quad digital pictures that can be frozen and zoomed. Monitor B displays live full-screen pictures.

Remote control and operation

Use the Control Center PC software or built-in web application via a network for live viewing, playback, and configuration. The Control Center can also be used with other Bosch products including the 600 Series and the 700 Series. Four users can control the 400 Series simultaneously.

The Bosch 400 Series includes an authenticity check for both local and remote playback, ensuring recording integrity. The Bosch 400 Series Archive Player is provided for playback of secure video files.
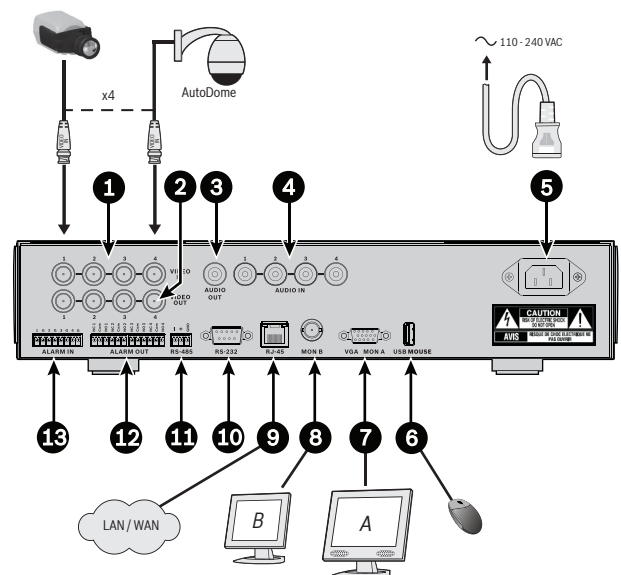
Mobile Devices

Real Time Streaming Protocol (RTSP) is supported in the 400 Series. This means that live video streamed from the unit over the internet can be displayed by suitably configured mobile devices.

Functions

The Bosch 400 Series has the following features:

- 4 looped-through, auto-terminating camera inputs
- 4 audio inputs
- Simultaneous live viewing, recording, and playback
- 10/100Base-T Ethernet port for local or wide area network connection
- RS232 and RS485 serial port for serial communication
- VGA main monitor output plus CVBS for spot monitor
- Numerous VGA output quality settings
- Full-screen and Quad display capabilities in live and playback modes
- Playback one or more channels while showing live pictures of the other channels
- Spot monitor output with sequencing
- Audio output (mono)
- Motion detection
- Multiple search modes including smart search (search for motion within recorded images)
- 4 switching (alarm) inputs and 4 alarm outputs
- Video loss detection
- Audible alarm
- Pan, tilt, and zoom camera control via RS485/RS232
- Supports Bosch and Pelco protocols
- Local archiving via USB
- Local archiving via built-in DVD burner
- Live display support on mobile devices

Certifications and approvals

Region	Certification	
Europe	CE	Declaration of Conformity
USA	UL	Declaration of Conformity
	FCC	Declaration of Conformity
Canada	CSA	Declaration of Conformity

Installation/configuration notes

Connections on back of DVR 400 (Advanced version)

1.	Camera inputs	8.	Monitor B output
2.	Camera outputs	9.	RJ45 network connector
3.	Audio output	10.	RS232 connector
4.	Audio input(s)	11.	RS485 connector for Dome control
5.	Power connector	12.	Alarm output(s)
6.	USB mouse connector	13.	Alarm inputs
7.	Monitor A VGA output		

Recommended PC requirements for Web support

Operating system	Windows XP, Windows Vista or Windows 7
Web browser	Internet Explorer 7 or 8
Processor	Intel Core Duo 2.0 GHz or comparable

RAM memory	2048 MB
Free disk space	10 MB
Graphics card	NVIDIA GeForce 8600 or better
Video memory	256 MB
Network interface	10/100-BaseT

Technical specifications

Electrical

Rated Voltage and Power

Power input	120–230 VAC ±10%; 0.5 A; 50/60 Hz

Video

Video Standard	SVGA PAL / NTSC auto-detect
Live Resolution	SVGA: 800x600, 1024x768 or 1280x1024 PAL: 720x576, NTSC: 720x484
Digital Zoom	2 times
AGC	Automatic gain adjustment for each video input
Compression	H.264
Inputs	Composite video 1 Vpp, 75 ohm, automatic termination
Outputs	Monitor A: VGA RGB Monitor B: 1 Vpp, 75 ohm, sync. 0.3 V ±10%

Audio

Inputs	Mono RCA, 1.0 Vpp
Output	Mono RCA, 1.0 Vpp
Compression	ADPCM
Sample rate	16 kHz per channel
Bit rate	8-bit

Alarm Handling

Inputs	4 Inputs configurable NO/NC, max input voltage 15 VDC
Outputs	4 Relay outputs, configurable NO/NC, max. rated 30 VAC, 30 VDC 0.5 A continuous

Control

RS232	Output signals according to EIA/TIA-232-F, max. input voltage ±25 V
RS232 Support	Bosch domes via RS232/Bi-phase converter

RS485	Output signals according to RS485, max. signal voltage -8 to +12 V
RS485 Support	Bosch domes, and Pelco P and D

Connectors

Video Inputs	4 Looping BNC, auto termination
Monitor	1 VGA d-SUB, 1 BNC
Alarm connectors	Screw terminal inputs, cable diameter AWG26-16 (0.13-1.5 mm)
Audio Inputs	4 RCA (CINCH)
Audio Output	1 RCA (CINCH)
Ethernet	RJ45, 10/100 BaseT according to IEEE802.3
RS232	DB9 Male
RS485	Screw terminal output, cable diameter AWG28-16 (0.08-1.5 mm)
USB	Type A Connector USB 1.1 on rear for mouse USB 2.0 on front for mouse or USB memory device

Storage

Hard Disk	1 SATA hard drive, 500 GB

Video recording

Record Rate (IPS)

NTSC	Max. 30 IPS per channel, configurable: 30, 15, 7.5, 5, 3, 1
PAL	Max. 25 IPS per channel, configurable: 25, 12.5, 6.25, 5, 2.5, 1
Recording Quality	Best, High, Normal, Low, Lowest

Average Recording Capacity

CIF, Normal, 25/30 IPS	PAL: 550 Hours, NTSC: 685 Hours
CIF, Normal, 6.25/7.5 IPS	PAL: 1400 Hours, NTSC: 1700 Hours
2CIF, Normal, 12.5/15 IPS	PAL: 460 Hours, NTSC: 575 Hours
4CIF, Normal, 6.25/7.5 IPS	PAL: 370 Hours, NTSC: 460 Hours

Maximum recording rates

Local Stream 4 channels

4CIF	PAL: 6 IPS, NTSC: 7.5 IPS
2CIF	PAL: 12.5 IPS, NTSC: 15 IPS
CIF	PAL: 25 IPS, NTSC: 30 IPS

Local Stream 2 channels

4CIF	PAL: 12.5 IPS, NTSC: 15 IPS
2CIF	PAL: 25 IPS, NTSC: 30 IPS
CIF	PAL: 25 IPS, NTSC: 30 IPS
Local Stream 1 channel	
4CIF	PAL: 25 IPS, NTSC: 30 IPS
2CIF	PAL: 25 IPS, NTSC: 30 IPS
CIF	PAL: 25 IPS, NTSC: 30 IPS
Remote (network) Stream 4 channels	
CIF	PAL: 12.5 IPS, NTSC: 15 IPS
Remote (network) Stream 2 channels	
CIF	PAL: 25 IPS, NTSC: 30 IPS

Display Modes

Monitor A	Full, quad (live and playback), Full sequence, alarm call-up (live)
Monitor B	Full, full sequence, alarm call-up (live)

Recording Modes

Normal partition	Continuous recording (with or without overwriting)
Event partition	Input and motion recording (with or without overwriting)

Mechanical

Dimensions (WxDxH)	357 x 362 x 78 mm (14.1 x 14.2 x 3.1 in) excluding cabling
Weight	4.7 kg (10.34 lb) approx.

Environmental

Temperature

- Operating	+0°C to +40°C (+32°F to +104°F)
- Storage	-40°C to +70°C (-40°F to +158°F)

Humidity

- Operating	<93% non-condensing
- Storage	<95% non-condensing

Electromagnetic compatibility

EMC requirements

- USA	FCC Part 15, Class B
- EU	EMC Directive 89/336/EEC
	Immunity: EN50130-4
	Emission: EN55022 Class B
	Harmonics: EN61000-3-2
	Voltage fluctuations: EN61000-3-3

Safety

- USA	UL60950-1
- EU	CE, EN60950-1
- Can.	CAN/CSA—C2.2 no. 60950-1

Ordering information

DVR-451-04A050 451 Series DVR
451 Series DVR, DVD, 4 channel, 500 GB
Order number **DVR-451-04A050**