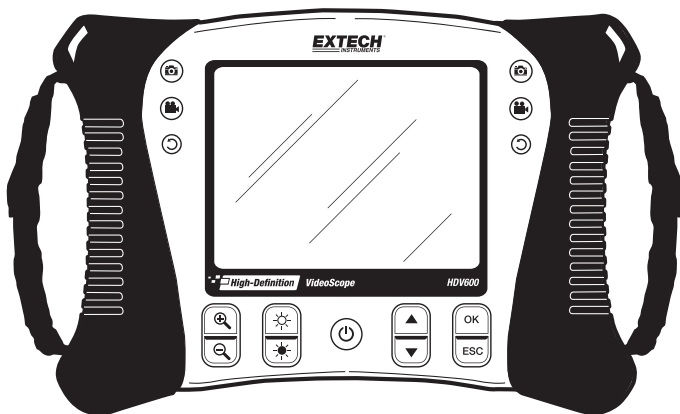


EXTECH[®]

INSTRUMENTS

A FLIR COMPANY



Introduction


Congratulations on your purchase of this Extech HDV600 series Video Borescope. This instrument is designed for use as a remote inspection device. It can be used to peer into tight spots, record and playback real-time video and images. Typical applications include HVAC inspection, automotive inspection, cable routing, and automotive/boat/aircraft inspection. The monitor is designed with dual left or right handed controls for maximum flexibility and is available with a full line of accessories. This meter is shipped fully tested and, with proper use, will provide years of reliable service.

HDV600	VideoScope (Monitor only)
HDV610	VideoScope w/1m flexible cable, 5.5mm diameter
HDV620	VideoScope w/1m semi-rigid cable, 5.8mm diameter
HDV640	VideoScope w/1m Articulating semi-rigid cable, 6mm diameter
HDV640W	VideoScope w/1m Wireless Articulating semi-rigid cable, 6mm diameter

Note: Additional probe lengths and configurations are available. A list is available at the end of this guide.



Cautions

 The IP67 waterproof rating does not apply when the bottom panel access co

Description

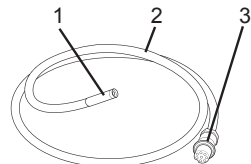
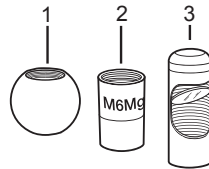
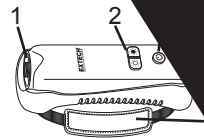
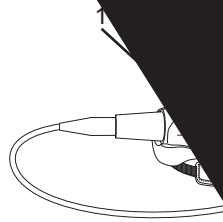
1. Probe connector
2. Camera button
3. Video button
4. Rotate image button
5. Display
6. Zoom buttons
7. Light intensity buttons
8. Power Button
9. Scroll buttons
10. Selection buttons
11. USB connector
12. Microphone
13. SD card slot
14. Video output jack
15. Reset button
16. AC adaptor connector

1. Articulation knob
2. Articulation tension knob
3. Articulating camera
4. Light intensity buttons
5. Power button
6. AC Adaptor and extension cable sockets
7. Carrying strap

1. Probe Connector
2. Light Intensity buttons
3. Power button
4. AC Adaptor and extension cable sockets
5. Carrying strap

1. Anti-snap tip
2. Magnet
3. 45° Mirror

1. Camera
2. Shaft
3. Monitor connector



Setup

A fully charged battery will allow approximately 5 hours of continuous use.


1. Turn the meter off and then connect the AC adaptor to charge the meter.
2. After several hours, turn the meter on. The battery icon will indicate either:

A: Fully charged



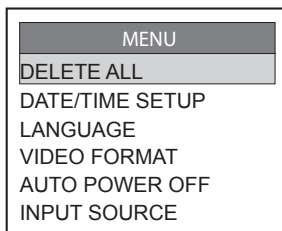
B: Charge in progress



3. If the battery is charged, remove the AC adaptor and observe that the fully charged 4 bar icon  appears.
4. If the battery icon indicates less than 4 bars, turn the meter off and continue charging.
5. Always wait for a full fully charged indication to maximize operation time and to maintain battery health.

The battery will not properly charge if the meter is on during the charging cycle.

1. Insert the SD card into the bottom SD slot
2. Press the Power button to turn the monitor on. The battery icon will briefly appear indicating the battery condition.
3. Press OK to open the setup MENU
4. Press the ▲ or ▼ button to scroll through the MENU selections.
5. Press OK to open the highlighted selection.
6. Press the ▲ or ▼ button to scroll through the items in an open menu item.
7. Press the ▲ or ▼ buttons to increase or decrease the selected value.
8. After there has been a change, press the OK button to save the change or the ESC button to exit without the change.



Note: After 10 seconds of inactivity, the Setup menu will exit without storing changes.

Erase all stored pictures and videos

Set the date (year/month/day), time (hour:minute:second) and display on/off

: Set the menu display to any one of 21 languages.



: Set the video output to NTSC or PAL format.



Set the APO to 5, 10, 15, 30 minutes or DISABLE.

: Set Direct or Wireless.



Operation

1. Connect the probe to the monitor.
2. Press the Power button to turn the monitor on.
3. Maneuvere the probe into position to view the area to be examined. The probe can be bent into the shape of the area to be examined. Optimum focus distance is 2 to 6cm (0.79 to 2.3")
4. Optimum focus distance is probe dependent, but the typical range is 2 to 6cm

Press the  or  zoom buttons to increase or decrease the display resolution from 1X to 2X.


Press and release the  or  buttons to increase or decrease the camera LED light intensity


Note: the camera LEDs become warm when set to maximum intensity

Press the  button to take and store a picture into memory. The  icon will appear on the display when a picture is taken.

Press the  button to start recording a video. The   icons will appear on the display when a video is being recorded. Press the  button to stop the recording. Audio will be recorded on the video via the microphone on the bottom of the monitor.

Note: The bottom access cover must be removed for audio recording.

 The IP67 waterproof rating does not apply when the bottom panel access cover is removed.

Press the  button to rotate the display 90 degrees.

Three accessories (mirror, anti-snag tip and magnet) are supplied with each probe. Attach the accessory by unscrewing the probe ring and screwing on the attachment.



The wireless transmitter is intended for use in areas that are difficult to access or in situations when it is hard to maneuver the probe with the display attached. The probe can also be connected directly to the monitor using the patch cord.

Note: The battery must be fully charged for wireless operation. A weak battery may result in meter shut down.

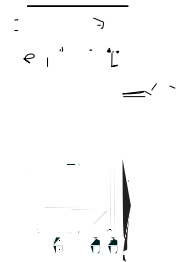
Wireless Mode







1. Connect the AC adaptor to the transmitter and charge the battery.
2. Attach the probe to the transmitter.
3. Press and hold the Power button for 4 seconds to turn the monitor on, then select "WIRELESS" under the INPUT SOURCE selection in the MENU screen.
4. Press and hold the Power button for 4 seconds to turn the transmitter on. The camera video will be transmitted to the monitor display.



Direct Mode

1. Connect the AC adaptor to the transmitter and charge the battery.
2. Attach the probe to the transmitter.
3. Connect the patch cord between the transmitter and the monitor probe input connector.
4. Press and hold the Power button for 4 seconds to turn the transmitter on.
5. Press and hold the Power button for 4 seconds to turn the monitor on, then select "DIRECT" under the INPUT SOURCE selection in the MENU screen.
6. In the direct mode, light intensity is controlled by the buttons on the monitor, not by the buttons on the transmitter.

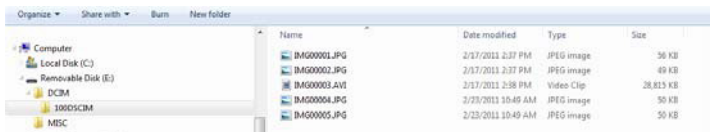


1. Press the ▲ button to access the pictures or videos in memory. Each button press will step through the files with the file number appearing on the screen (i.e. IMG00005)
2. Pictures will appear with the  photo icon on the display.
3. Videos will appear with the  film icon on the display.
4. To play a video, select a video file and press the  button. The  play icon will appear during playback. Press the  button again to pause playback. The  pause icon will appear.

There are two methods to transfer stored files to a pc.

1. Remove the SD card from the monitor and insert it into the SD reader in the pc.
2. Connect the monitor to the pc with a USB cable.

Images are saved in *.JPG format and videos saved in *.AVI format



1. Press the ▲ button to access the pictures or videos in memory.
 2. When the file to be deleted appears, press the OK button and the DELETE YES/NO box will appear.
 3. Press the ▲ button to highlight YES and then press the OK button to delete the file.
 4. Press the ESC button to exit at any time without deleting the file.
1. Turn the monitor on and select “PAL” or “NTSC”, to match the video monitor to be used, under the VIDEO OUTPUT selection in the MENU screen and press OK.
 2. Insert the video cable into the VIDEO OUT socket on the bottom of the monitor. Connect the other end of the cable into the VIDEO IN jack of a TV or other monitor.
 3. The unit will output a high quality video image.

If the monitor becomes unresponsive due to an EMI field or other magnetic event, use a paper clip or other pointed object to press the RESET button located on the bottom panel

The rear stand can be set to three positions. Lower (stored), middle position for bench viewing and upper position for hanging.

This device 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.

Specifications

LCD Screen	14.5cm (5.7") Viewable 13.5cm (5.3") Active matrix, 640x480 pixels
Interface	Mini USB 1.1 and AV out
Recording medium	SD Card
SD memory	2GB maximum
Compression format	MPGE4
Still image format	JPEG (640x480)
Video Recording Format	AVI (640x480)
Video output Format	NTSC and PAL
Receiver Frequency	2.4GHz
Receiver Sensitivity	-87dBm (SNR = 42dB, Fmod = 15kHz)
Video System	NTSC / PAL
Data	Video / Audio
Audio type	Stereo
Tripod mount	On rear, Accepts standard tripod screw
Battery	3.7V rechargeable Li-Polymer
Power adaptor	100 to 240V input / 5VDC output
Operating/Storage Temperature	-10 to 60°C(14 to 140°F) / -40 to 80°C(-40 to 176°F)
Operating Humidity (Max.)	80%
Dimensions (W x D x H)	24.1 x 17.8 x 7.0cm (9.5"x7"x2.75")
Weight	1474g (3.25lb)

Frequency	2.4GHz
Data	Video / Audio
Video System	NTSC / PAL
Battery	3.7V rechargeable Li-Polymer
Power adaptor	100 to 240V input / 9VDC output
Unobstructed Effective Range	10m
Operating/Storage Temperature	-10 to 60°C(14 to 140°F) / -40 to 80°C(-40 to 176°F)
Dimensions (W D H)	7.5' x 2.75 x 2.5" (19 x 7 x 6.35cm)
Weight (approx)	0.95lb (431g)

Imaging Sensor	CMOS
Video Format	NTSC
Brightness Control	Manual
Lamp Type	LED
Interface	Composite Video
Waterproof Capacity	IP57
Operating Temperature	-20°C to 70°C (-4°F to 158°F)

Articulation	240°±20° manual tip articulation
Accessories	Mirror, magnet and anti-snag Ball (excluding 25mm diameter cables)

Part Number	Description	OD	Length	Camera	Focus Distance
HDV-TX1	Articulating Semi-Rigid	6mm	1m	640x480	2 to 6cm
HDV-WTX1	Wireless Articulating Semi-Rigid	6mm	1m	640x480	2 to 6cm
HDV-TX2	Articulating Semi-Rigid Cable	6mm	2m	640x480	2 to 6cm
HDV-WTX2	Wireless Articulating Semi-Rigid	6mm	2m	640x480	2 to 6cm
HDV-4CAM-1FM	Macro lens Flexible	4mm	1m	320x240	2 to 6cm
HDV-5CAM-1FM	Macro lens Flexible	5.5mm	1m	640x480	2 to 6cm
HDV-5CAM-3F	Long depth of field Flexible	5.5mm	3m	640x480	6 cm to ∞
HDV-5CAM-3FM	Macro lens Flexible	5.5mm	3m	640x480	2 to 6cm
HDV-5CAM-10F	Long depth of field Flexible	5.5mm	10m	640x480	6 cm to ∞
HDV-5CAM-1RM	Macro lens Semi-Rigid	5.5mm	1m	640x480	2 to 6cm
HDV-5CAM-3R	Long depth of field Semi-Rigid	5.5mm	3m	640x480	6 cm to ∞
HDV-5CAM-3RM	Macro lens Semi-Rigid	5.5mm	3m	640x480	2 to 6cm
HDV-25CAM-10G	Fiberglass	25mm	10m	640x480	6 cm to ∞
HDV-25CAM-30G	Fiberglass	25mm	30m	640x480	6 cm to ∞

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