TONGVEO TV-NVS20A-4KN

TONGVEO 4K NDI PTZ Camera User Manual

Model: TV-NVS20A-4KN
Brand: TONGVEO

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your TONGVEO 4K NDI PTZ Camera (Model TV-NVS20A-4KN). Please read this manual thoroughly before using the product to ensure proper functionality and to prevent damage.

The TONGVEO 4K NDI PTZ Camera is designed for professional live streaming and conferencing, offering 4K resolution, 20X optical zoom, AI auto-tracking, and multiple output options including HDMI, SDI, USB3.0, and NDI over LAN with Power over Ethernet (PoE) support.

Figure 1: TONGVEO 4K NDI PTZ Camera with key features.

2. PRODUCT OVERVIEW

2.1 Key Features

- **4K UHD Video Output:** Supports 4K/30FPS via HDMI and USB, and up to 1080P via IP/NDI.
- **20X Optical Zoom:** High-quality optical zoom for detailed close-ups.
- **AI Auto-Tracking:** Advanced AI for presenter tracking and auto-framing using facial and human body recognition.
- **Official NDI 4K Integration:** Seamless compatibility with NDI-enabled workflows and software.
- **Multiple Output Interfaces:** HDMI, SDI, USB3.0, and LAN (supporting PoE).
- **Power over Ethernet (PoE):** Simplifies installation by combining power and data over a single network cable.
- **Flexible Control Options:** Control via IR remote, web browser, or Camera Management Software.

2.2 What's in the Box

- 1 x TONGVEO 4K NDI PTZ Camera
- 1 x USB 3.0 Cable (9.8ft)
- 1 x IR Remote Control
- 1 x Wall Mount Bracket with screws
- 1 x DC 12V/2A Power Adapter
- 1 x User Manual

Figure 2: Included accessories and camera.

3. SETUP

3.1 Physical Installation

The camera can be installed in various ways: desktop, wall-mounted, or tripod-mounted. Ensure the camera is placed on a stable surface or securely mounted to prevent accidental falls.

- **Desktop Placement:** Place the camera on a flat, stable surface.

- **Wall Mounting:** Use the provided wall mount bracket and screws to securely attach the camera to a wall. Ensure the wall can support the camera's weight.
- **Tripod Mounting:** The camera base includes a standard 1/4-inch screw hole for tripod compatibility.

3.2 Connections

Connect the necessary cables to the rear panel of the camera:

- **DC12V:** Connect the power adapter.
- **RS485/RS232:** For serial control (e.g., with a joystick controller).
- **USB3.0:** Connect to a computer for video output and control.
- **HDMI:** Connect to a display or video switcher for 4K video output.
- **RJ45 (LAN/PoE):** Connect to a network for IP streaming, NDI, and PoE power.
- **SDI:** Connect to a professional video switcher or monitor for long-distance video transmission.
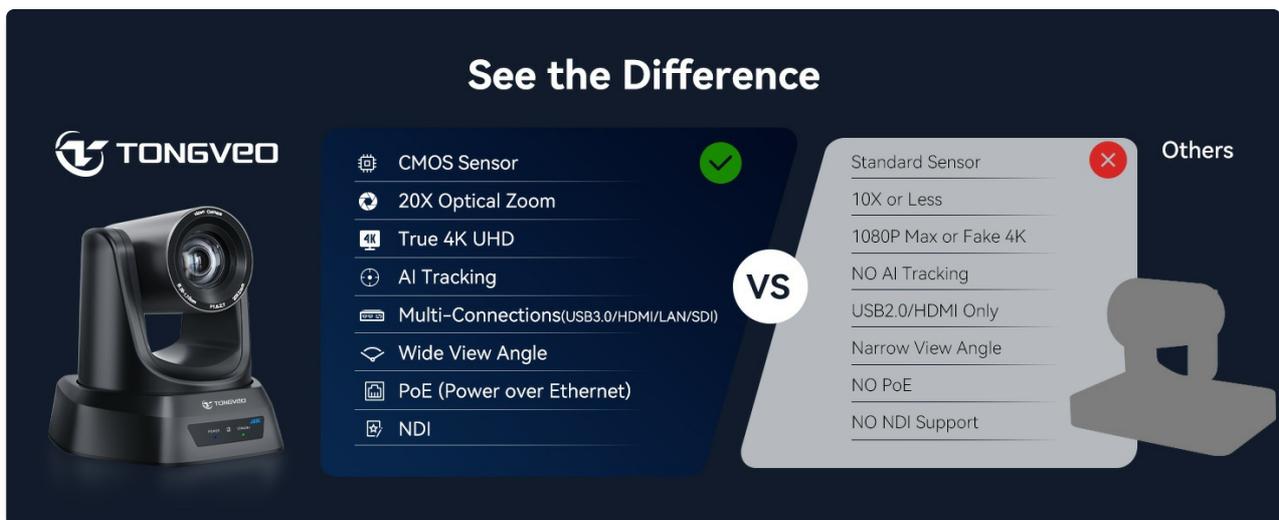

Figure 3: Rear panel connections.

3.3 Power On

After all connections are made, connect the power adapter to a power outlet or ensure PoE is active on your network switch. The camera will power on and perform an initial self-test, moving its lens to the home position.

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Video 1: Overview of the TONGVEO 4K NDI PTZ Camera's features and initial startup sequence.

4. OPERATING INSTRUCTIONS

4.1 Remote Control

The included IR remote control allows for basic camera operations:

- **Power:** Turn the camera on/off or put it in standby.
- **Camera Select:** Select which camera to control (up to 4 cameras).
- **PTZ Control:** Use arrow keys to pan (left/right) and tilt (up/down) the camera.
- **Zoom:** Adjust optical zoom in/out.
- **Preset:** Save and recall up to 9 preset positions.

- **Focus:** Auto or manual focus adjustment.
- **Image Mode:** Adjust brightness, mirror image, and other settings.
- **AI Tracking:** Activate or deactivate AI tracking modes.

Figure 4: IR Remote Control functions.

4.2 Web Interface Control

Access the camera's web interface for advanced control and settings configuration:

- Connect the camera to your network via the RJ45 port.
- Find the camera's IP address (refer to your network settings or the camera's OSD menu).
- Open a web browser and enter the camera's IP address.
- Log in using the default credentials (username:**admin**, password:**admin**).
- From the web interface, you can control PTZ movements, zoom, focus, image settings, and configure AI tracking modes.
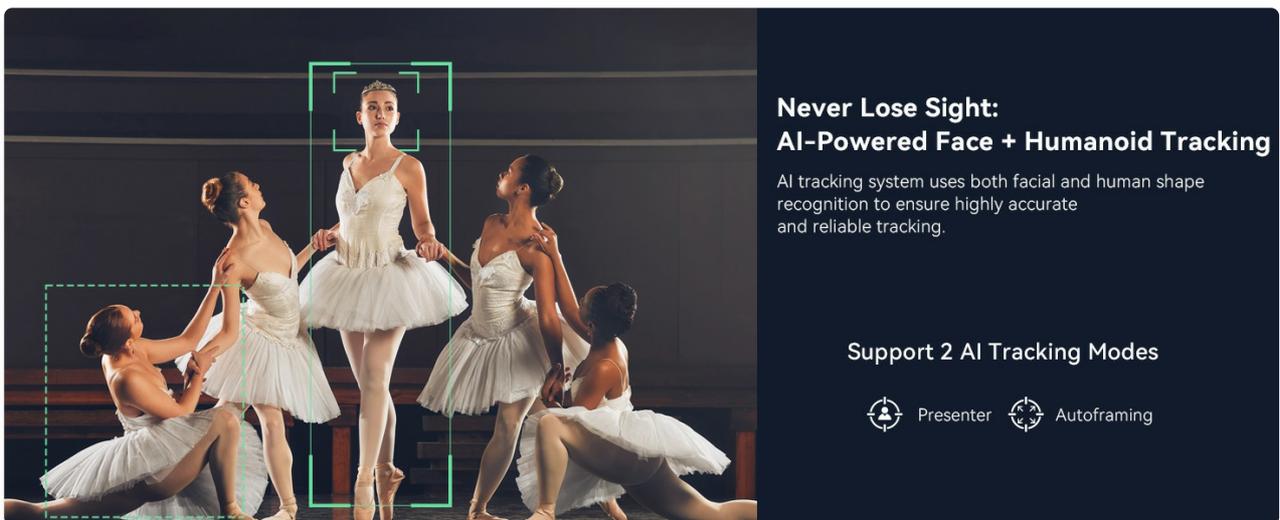

Figure 5: Web interface for camera control.

4.3 AI Auto-Tracking

The camera features intelligent AI auto-tracking with two main modes:

- **Presenter Tracking:** The camera automatically follows a designated presenter, keeping them centered in the frame.
- **Auto-Framing:** The camera intelligently frames multiple subjects within the shot.

AI tracking uses both facial and human body recognition. If a person's body is temporarily obstructed, tracking will resume once their face reappears. Note that the system tracks one person at a time and is not designed for high-speed motion.

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Video 2: Demonstration of AI auto-tracking capabilities.

4.4 NDI Integration

The camera supports official NDI 4K integration, allowing for seamless video transmission over a standard network. This enables compatibility with popular software like OBS, vMix, Streamlabs, Propresenter, Wirecast, and Zoom.

- Connect the camera to your network via the RJ45 port.
- Use NDI Tools (e.g., Studio Monitor) to discover and view the camera's NDI stream on your network.
- Integrate the NDI stream into your preferred live streaming or video conferencing software.

Figure 6: NDI integration and workflow.

5. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the camera body. For the lens, use a lens cleaning cloth and specialized lens cleaning solution. Avoid harsh chemicals.
- **Storage:** When not in use for extended periods, store the camera in a dry, dust-free environment.
- **Firmware Updates:** Periodically check the TONGVEO website for firmware updates to ensure optimal performance and access to new features.

6. TROUBLESHOOTING

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
No video output	Loose cable connection, incorrect input selection on display, no power.	Check all cable connections (HDMI, SDI, USB, LAN). Ensure the display is set to the correct input. Verify power supply.
Camera not responding to remote	Low battery in remote, IR sensor blocked, incorrect camera selected.	Replace remote batteries. Ensure no obstructions between remote and camera. Select the correct camera ID on the remote.
AI tracking not working	Tracking mode off, subject too far/moving too fast, poor lighting.	Activate AI tracking via remote or web interface. Ensure subject is within optimal range and lighting is adequate. Avoid rapid movements.
NDI stream not found	Network issue, incorrect IP address, firewall blocking.	Verify network connection. Check camera's IP address. Ensure firewall settings allow NDI traffic. Restart camera and NDI software.

7. SPECIFICATIONS

Feature	Detail
Model Number	TV-NVS20A-4KN
Product Dimensions	6.42 x 6.73 x 6.81 inches
Item Weight	6.17 pounds
Photo Sensor Technology	CMOS
Video Capture Resolution	4K
Optical Zoom	20X
Maximum Focal Length	105mm
Maximum Aperture	3.7f
Connectivity Technology	HDMI, SDI, USB3.0, LAN (NDI, PoE)
Special Features	4K 30fps, AI Auto-Tracking, Official NDI 4K Integration

8. WARRANTY AND SUPPORT

TONGVEO offers comprehensive customer support for your product. If you encounter any issues or have questions, please utilize the following resources:

- **24-Hour After-Sales Support:** Contact our support team for assistance.

- **Free Training & Video Guides:** Access online resources for setup and operation.
- **Remote Assistance:** Available for complex troubleshooting.

For specific warranty details, please refer to the warranty card included with your product or visit the official TONGVEO website.