



Hardware Manual

Nd-WNxx-KB
1U Rack LCD Drawer

First Edition

**Computer
DYNAMICS**

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Warnings, Cautions, and Notes as Used in this Publication



Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.



Caution notices are used where equipment might be damaged if care is not taken.



Notes merely call attention to information that is especially significant to understanding and operating the equipment.

Important Safety Precautions

Warning



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution



Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

Safety and Warranty



- Please read these safety instructions carefully.
- Please disconnect this equipment from any AC outlet before cleaning.
- Do not use liquid or spray detergents for cleaning the screen or case, use a damp cloth to clean case. The display area is highly prone to scratching. Do not use ketene type material (ex. Acetone), Ethyl alcohol, toluene, ethyl acid or Methyl chloride to clear the panel. It might permanently damage the panel. Wipe the screen with a clean, soft, lint-free cloth. This removes dust and other particles. If still not clean, apply a small amount of non-ammonia, non-alcohol based glass cleaner onto a clean, soft, lint-free cloth, and wipe the screen.
 - We do not recommend the use of any ammonia or alcohol-based cleaners on the monitor screen or case. Some chemical cleaners have been reported to damage the screen and/or case of the rack LCD monitor. Seller will not be liable for damage resulting from use of any ammonia or alcohol-based cleaner.
- For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
- Keep this equipment away from humidity.
- Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
- The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
- Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
- Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- All cautions and warnings on the equipment should be noted.
- If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
- Never pour any liquid into an opening. This could cause fire or electrical shock.
- Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
- If any of the following situations arises, get the equipment checked by service personnel:
 - The power cord or plug is damaged.
 - Liquid has penetrated into the equipment.
 - The equipment has been exposed to moisture.
 - The equipment does not work well, or you cannot get it to work according to the user's manual.
 - The equipment has been dropped and damaged.
 - The equipment has obvious signs of breakage.
- Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20° C (-4° F) or above 60° C (140° F), as this may damage the equipment.

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1. Introduction

1.1. Overview

The ND-WN Series (ND-WN15M-KB / ND-WN17M-KB / ND-WN19M-KB) is a series of compact devices, built-in a 15", 17" or 19" LCD display, standard keyboard with numerical keypad, and heavy-duty touch pad to eliminate hardware redundancy and to increase cost efficiency. The 1U rack mount is designed to be an ideal solution for saving valuable rack mounting space, while possessing features such as monitor flip up design, adjustable mounting brackets, built-in LCD OSD and an optional centralized control of 16 PCs (17" System only).

1.2. Standard Features

ITEM	ND-WN15M-KB	ND-WN17M-KB	ND-WN19M-KB
TFT Display	15"	17"	19"
OSD Function	Built in OSD Screen Adjustment Function		
VGA	15-pin D-sub RGB Analog Input Signal		
Power Consumption	33W	38W	41W
Power Supply	AC 100-240V Universal		
Keyboard and Touch Pad	88-key Keyboard and Integrated Touch Pad		
Numerical Key Pad	17-key numerical Key Pad		
Dimensions	1U compact design, 515 mm x 484 mm x 44 mm (DxWxH)		
Operating Temperature	0° to +50° C Operating Temperature		
KVM Switch (optional)	OSD controlled 16 port KVM switch (17" Only)		

1.3. Outline Drawing

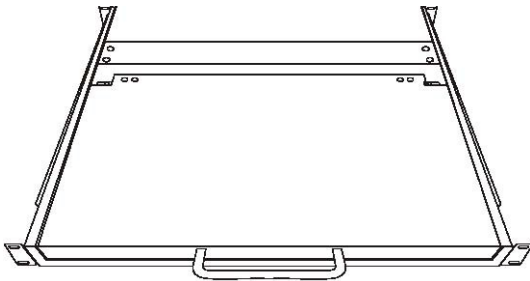


Figure 1-1: Front Side

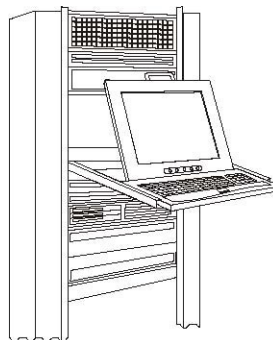


Figure 1-2: Mounted on Rack-mount Chassis

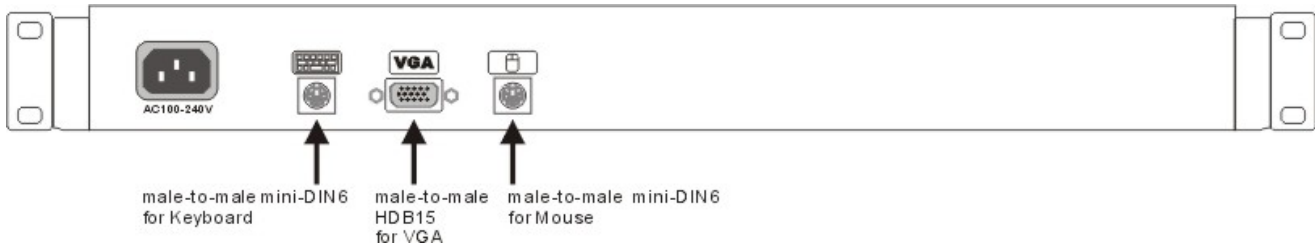


Figure 1-3: Rear Side (1 port)

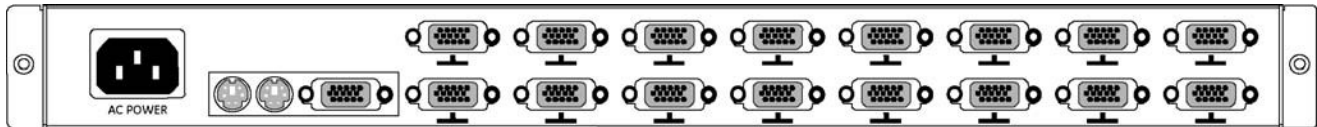


Figure 1-4: Rear Side (16 port)

1.4. Notice

1. Do not touch the LCD panel surface with sharp or hard objects.
2. Please ensure the LCD Drawer is securely in place. The surface for placing and fixing the LCD Drawer should be stable and level or mounted into a suitable cabinet.
3. Ensure there is enough ventilation for the LCD Drawer, as well as out of direct sunlight, away from sources of excessive dust, heat, water, moisture, and vibration.
4. Ensure the location of the LCD Drawer is convenient enough for it to connect to its related facilities.

1.5. Check List

Before using this rack monitor, please make sure that all the items listed below are present in your package:

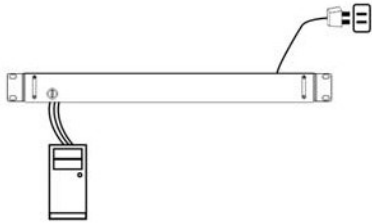
1. Analog color LCD Drawer
2. Accessory Box containing:
 - KVM (Keyboard, Video, Mouse) expansion cable ×1
 - Power cable ×1
 - User guide ×1

If any items are missing or damaged, please contact Computer Dynamics at 1-864-627-8800 immediately.

2. Configuration and Installation

2.1. Configuration

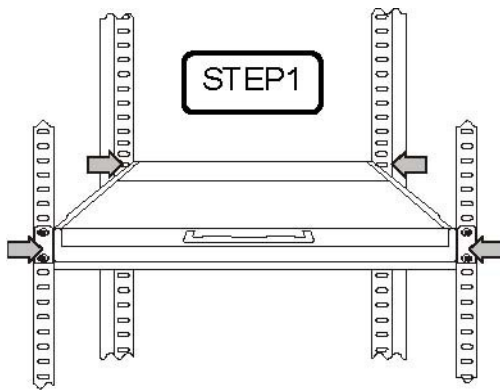
The ND-WN Series rack LCD drawer supports 1 computer. The configuration is as shown in the following figure.



2.2. Installation

Step 1. Mount on Rack-mount Chassis

Mount the Rack Drawer LCD on Rack-mount chassis with screws.



Step 2. Power Cable Connection

Connect the power cord to the rack LCD monitor and AC outlet.

Step 3. PS/2 Mouse, Keyboard and VGA Cable Connection

ND-WN15M/17M/19M-KB:

Power down the computer, which will be connected to your rack LCD monitor. Plug one end of the KVM expansion cable to the connectors at the rear of the PC system and the other end to the rack LCD monitor.

Secure the connectors with the screws on the cable connector at both ends.

ND-WN17M 16 port:

Power down all computers, which will be connected to your rack LCD monitor.

Plug one end of the KVM expansion cable to the connectors at the rear of all the PC systems and the other end to the rack LCD monitor.

Secure the connectors with the screws on the cable connector at both ends



Note: The KVM expansion cable for the ND-WN17M, 16 port is different from the other KVM switch cables. The end of the KVM switch side is the 15-pin black connector for monitor, keyboard and mouse. The matching port of the KVM switch also uses 15-pin black ports.

Note: All connectors are color coded; blue – video, green – mouse, purple – keyboard.

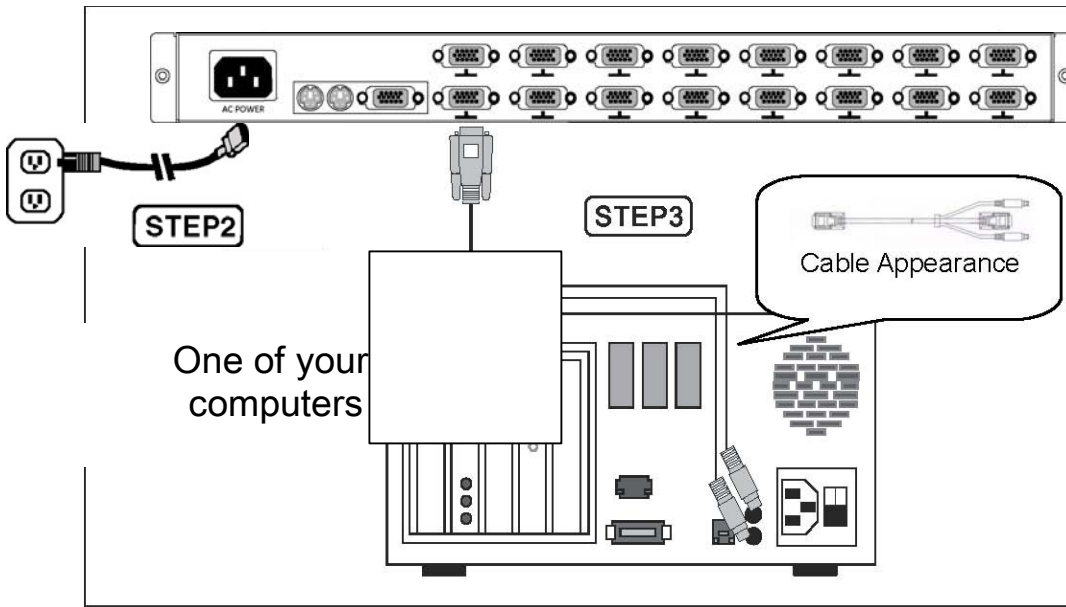
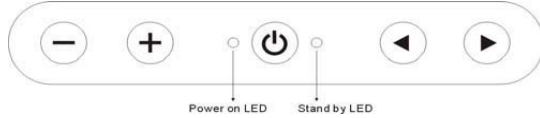


Figure 2-1: Nd-M17-KB, 16-port

3. LCD OSD Key Definition

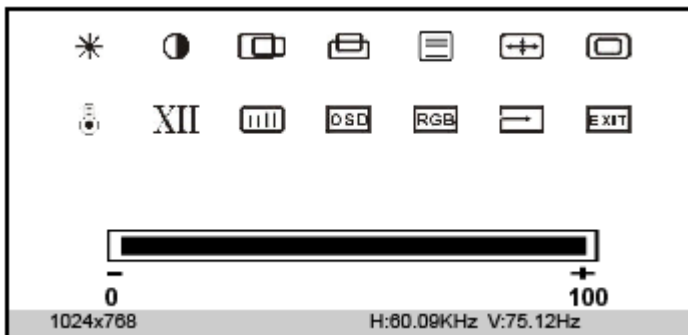


1. MENU /
Use this key to select the function you would like to adjust.
2. ADJUST +/-
Use this key to select the function you would like to adjust.
3. POWERSWITCH
Use this key to select the function you would like to adjust.
4. POWER STAND-BY MODE LED
Use this key to select the function you would like to adjust.
5. POWER ON LED
Use this key to select the function you would like to adjust.

3.1. The control Key Description

- : Power on/off control
- : Call menu / Shifting the selection left
- : Call menu / Shifting the selection right
- : Decrease value
- : Increase value. / Automatic adjustment

3.2. LCD OSD Screen



BRIGHTNESS

Press "+" to increase or "-" to decrease the brightness.

CONTRAST

Press "+" to increase or "-" to decrease the contrast.

H-POSITION

Press "+" or "-" to move the image to the left or right on the screen.

V-POSITION

Press "+" or "-" to move the image up or down on the screen.



H-SCALING

Press "+" or "-" to increase or decrease the Horizontal screen size.



AUTO ADJUSTMENT

Press "+" or "-" to have the monitor logic choose the best settings for the current input signal.



WHITEBALANCE

Press "+" or "-" to enable auto adjust white balance function.



COLOR TEMPERATURE

Press "+" or "-" to set the color temperature

USER: Use this function to set a proper color temperature.

- 9300K: Push to set monitor for the CIE coordinate 9300 color temperature
- 6500K: Push to set monitor for the CIE coordinate 6500 color temperature
- 5500K: Push to set monitor for the CIE coordinate 5500 color temperature

XII GAMMA

Press "+" or "-" to adjust GAMMA Function.



PHASE

Press "+" or "-" button to adjust the Phase control. Phase adjustment may be required to optimize the display quality.



OSD TRANSPARENT

Press "+" or "-" to adjust the OSD background color.



ADC ADJUST

Press "+" or "-" to enter the ADC control manual for Brightness, Contrast, Red Color Gain, Green Color Gain and Blue Color Gain adjustment.



RECALL

Press "+" or "-" to RECALL the factory default settings.



OSD EXIT

Press "+" or "-" to EXIT the OSD MENU.

Field of Command: To edit name, press F1
To active Scan, press F2
To set System, press F3
To exit OSD, press ESC

To accept Command, press ENTER

Highlight Bar: Use your up and down arrow keys to move the highlight bar, and press Enter to accept the change.

4.1.2. Characters Accepted by OSD Menu

a-z, A-Z

0-9

- = / . ; SPACE



Note: the menu displays all letters in capital letter.
Only the keyboard can be used in the OSD menu.

4.1.3. Command Menu

Once you have activated the main OSD Window, you can open the Command Menu by press **F1** and **F3** keys.

4.1.4. Select Channel

- Open OSD window
- Use your up and down arrow keys to move the highlight bar to the selected channel
- Press **Enter** to accept the change
- Press **ESC** to exit and discard changes

4.1.5. Name Channel

Once you have activated the main OSD Window, you can name your channel by press **F1**.

- Open OSD window
- Move up and down arrow key to highlight the channel you wish to change
- Press **F1**
- Enter the channel name by using a-z, A-Z, 0-9, =/, . ; SPACE
- Delete the letter by using **Backspace**
- Press **Enter** to accept or press **ESC** to exit without saving
- Press **ESC** to exit

4.1.6. Reset keyboard and Mouse

- Open OSD window
- Press **F3**
- Move up and down arrow key to highlight the channel of RESET KEYBOARD AND MOUSE
- Press **Enter**

4.1.7. Set Scan Rate

- Open OSD window
- Press **F3**
- Move up and down arrow key to highlight the channel of SCAN DELAY TIME
- Press **Enter**
- Enter the scan rate(0-255 seconds)
- Delete the letter by using **Backspace**
- Press **Enter** to accept or press **ESC** to exit without saving
- Press **ESC** to exit

4.1.8. Active Scan Function

- Open OSD window
- Press **F3**
- Press **ESC** to exit



Note: the KVM switch will skip the power-off computers or channels. If your system is in secure mode, this function will be deactivated.

4.1.9. Memory Function

If you want to know the status of the connected computers or channels, just open the OSD window, and the position of highlighted bar will show you the current computer or channel.



Note: this function is only available when using OSD to select computers or channels.

4.1.10. Set Password

This function is only used if you are running your system in secure mode, if you have forgotten your password; please return this device to the manufacturer.

Only 8 port versions offer this function.

- Open OSD window
- Press **F3**
- Move up and down arrow key to highlight the channel of SET PASSWORD
- Press **Enter**
- Move up and down arrow key to highlight the channel you want to set
- Press **Enter**
- Enter the password
- Press **Enter**
- Enter the new password again
- Press **Enter**

When the user password is set, you can only use the **ESC** key to enter OSD window; you can enter the channel number if password has not been set.



Note: If your system is in secure mode, selection by the push button and hot key will not work.

4.2. Selection by Hot Key

Hot Key combination enables you to select a channel easily.

Operation:

Ctrl + Shift + (A-----H) + Enter

Example:

Ctrl + Shift + B + Enter This is to select computer 2 (computer B)



Note: Use the **left** CTRL and shift keys.

If your system is in secure mode, this function will be deactivated.



Note: “Ctrl+Shift+A+Enter” means to press the left Ctrl key, then the Left Shift key, then A key, and then press Enter key.

Note: If your system is in secure mode, this function will be deactivated

5. Specifications

Item	ND-WN15M-KB	ND-WN17M-KB	ND-WN19M-KB
Display Area (mm)	304.1 x 228.1 (15" diagonal)	337.9 x 270.3 (17-inch diagonal)	376.3 x 301.1 (19-inch diagonal)
Pixel Pitch (HxV)	0.297 x 0.297	0.264 x 0.264	0.294 x 0.294
Number of Pixels	1024 x 768	1280 x 1024	1280 x 1024
Contrast Ratio	350:1	400:1	600:1
Display Color	16.2M colors	16.7M colors	16.7M colors
Brightness (CD/m²)	250	280	250
Backlight Unit	2 replaceable CCFLs edge-light (top/bottom)	4 replaceable CCFLs edge-light (top/bottom)	
Viewing Angle	-65° to 65° (H) -50° to 55°(V) (Typ.)	-70° to 70° (H), -60° to 60° (V) (Typ.)	-85° to 85°(H), -85° to 85°(V) (Typ.)
I/O	Power: 12V DC Adapter Keyboard: PS/2 Mouse: PS/2 VGA: 15-pin D-sub		
Keyboard, Mouse	88-key keyboard and integrated Touch Pad 17-key numerical key pad		
Power Consumption	33 Watts	38 Watts	41 Watts
Power Supply	AC 100-240V Universal		
On-Screen Display	Contrast, Brightness, H/V Position, H/V Size, H-scaling, Auto-adjust, Color Temp. (9300, 6500, User), Red-Gain, Blue-Gain, Green-Gain, Gamma, Recall, Phase, OSD & Exit		
Hot Key Control	OSD Hot Key		
Environmental	Operating temperature: 0° to +50°C (32° F to 122° F) Storage temperature: -20° to +60° C (-4° F to 140° F)		
Humidity	10-85% in operating; 10-90% in storage		
Size	515 mm x 484 mm x 44 mm (DxWxH)		

6. Troubleshooting

Ensure that all cables are well seated. Check that keyboard/mouse cables are not swapped. If your monitor fails to operate correctly, consult the following chart for possible solution before calling for repairs: Delete Red Text Above & Fill-in table below.

Condition	Check Point
1. The picture does not appear	<ul style="list-style-type: none"> • Check if the signal cable is firmly seated in the socket. • Check if the Power is ON at the computer • Check if the brightness control is at the appropriate position, not at the minimum.
2. The screen is not synchronized	<ul style="list-style-type: none"> • Check if the signal cable is firmly seated in the socket. • Check if the output level matches the input level of your computer. • Make sure the signal timings of the computer system are within the specification of the monitor. • If your computer was working with a CRT monitor, you should check the current signal timing and turn off your computer before you connect the VGA Cable to this monitor.
3. The position of the screen is not in the center	<ul style="list-style-type: none"> • Adjust the H-position, and V-position, or Perform the Auto adjustment.
4. The screen is too bright (too dark).	<ul style="list-style-type: none"> • Check if the brightness or contrast control is at the appropriate position, not at the Maximum (Minimum).
5. The screen is shaking or waving	<ul style="list-style-type: none"> • Press "+" (the Auto -adjustment control) to adjust. Moving all of objects which emit a magnetic field such as motor or transformer, away from the monitor. Check if the specific voltage is applied. • Check if the signal timing of the computer system is within the specification of monitor.
6. Mouse or Keyboard is not functioning (for 16 port versions)	<ul style="list-style-type: none"> • Verify that the mouse or keyboard is correctly plugged in to the KVM switch. • Verify that the cable is correctly connected between the computer and the KVM switch. • Try the keyboard and mouse reset command from the OSD F3 command menu. • Restart the computers. • Verify that the keyboard or mouse works when connected directly to the computer. • Note: The mouse will be inactive when OSD menu is active.
7. Hotkey selection is not functioning	<ul style="list-style-type: none"> • The Hotkey or Push button selection is inactive when the password is active.

7. Appendix

7.1. Supporting Resolution Modes

ND-WN15M-KB (15")

Mode	Resolution	H-Freq. (KHz)	V-Freq. (KHz)
Mode 1	640x350	31.5	70
Mode 2	640x400	31.5	70
Mode 3	640x480	31.5	60
Mode 4	640x480	37.9	72
Mode 5	640x480	37.5	75
Mode 6	720x400	31.5	70
Mode 7	800x600	35.1	56
Mode 8	800x600	37.9	60
Mode 9	800x600	48.1	72
Mode 10	800x600	46.9	75
Mode 11	1024x768	48.4	60
Mode 12	1024x768	56.5	70
Mode 13	1024x768	60.0	75

ND-WN17M-KB (17") / ND-WN19M-KB (19")

Mode	Resolution	H-Freq. (KHz)	V-Freq. (KHz)
Mode 1	640x350	31.5	70
Mode 2	640x400	31.5	70
Mode 3	640x480	31.5	60
Mode 4	640x480	37.9	72
Mode 5	640x480	37.5	75
Mode 6	720x400	31.5	70
Mode 7	800x600	35.1	56
Mode 8	800x600	37.9	60
Mode 9	800x600	48.1	72
Mode 10	800x600	46.9	75
Mode 11	1024x768	48.4	60
Mode 12	1024x768	56.5	70
Mode 13	1024x768	60.0	75
Mode 14	1280x1024	64.0	60
Mode 15	1280x1024	6080.0	75

7.2. RMA Requests

Refer to our website at www.cdynamics.com to obtain the latest instructions for requesting a RMA number.

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