

# Appendix 1 Specifications

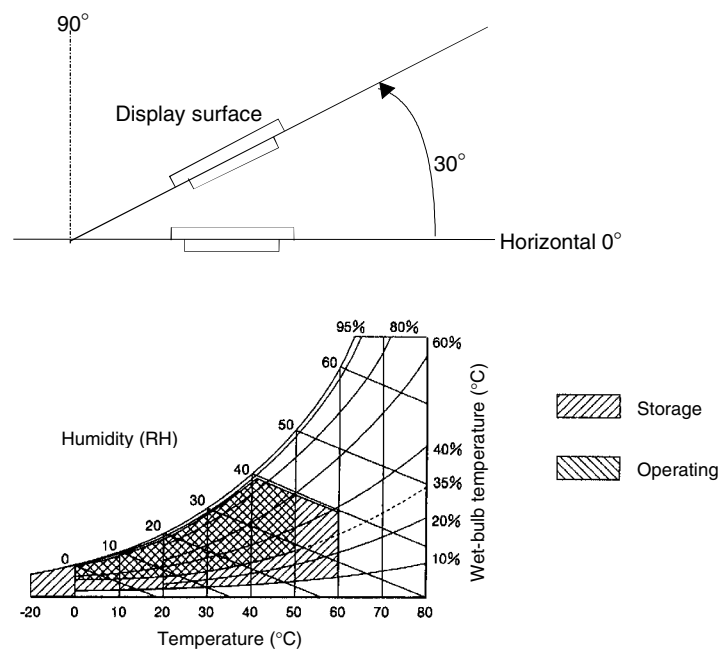
## A-1-1 General Specifications

Item	Specifications				
	NS15-TX01□-V2	NS12-TS0□-V1 NS12-TS0□-V2	NS10-TV0□-V1 NS10-TV0□-V2	NS8-TV□□-V1 NS8-TV0□-V2	NS5-SQ0□-V1 NS5-SQ□□-V2 NS5-TQ□□-V2 NS5-MQ□□-V2
Rated power supply voltage	24 VDC				
Allowable voltage range	20.4 to 27.6 VDC (24 VDC ±15%)				
Allowable input power interruption time	No restriction.				
Power consumption	45 W max.	25 W max			15 W max.
Ambient operating temperature	0 to 50°C (See notes 1, 2, and 3.)				
Storage temperature	−20 to 60°C (See note 2.)				
Ambient operating humidity	35% to 85% (0 to 40°C) with no condensation 35% to 60% (40 to 50°C) with no condensation				
Operating environment	No corrosive gases.				
Noise immunity	Conforms to IEC61000-4-4, 2 KV (power lines)				
Vibration resistance (during operation)	5 to 8.4 Hz with 3.5 mm single amplitude and 8.4 to 150 Hz with 9.8 m/s <sup>2</sup> acceleration 10 times in each of X, Y, and Z directions	10 to 57 Hz with 0.075 mm amplitude and 57 to 150 Hz with 9.8 m/s <sup>2</sup> acceleration for 30 min in each of X, Y, and Z directions			
Shock resistance (during operation)	147 m/s <sup>2</sup> 3 times in each of X, Y, and Z directions.				
Dimensions	405 × 304 × 75.8 mm (W × H × D)	315 × 241 × 48.5 mm (W × H × D)		232 × 177 × 48.5 mm (W × H × D)	195 × 142 × 54 mm (W × H × D)
Panel cutout dimensions	Width 383.5 <sup>+1</sup> <sub>0</sub> × Height 282.5 <sup>+1</sup> <sub>0</sub> mm Panel thickness: 1.6 to 4.8 mm	Width 302 <sup>+1</sup> <sub>0</sub> × Height 228 <sup>+1</sup> <sub>0</sub> mm Panel thickness: 1.6 to 4.8 mm	Width 302 <sup>+1</sup> <sub>0</sub> × Height 228 <sup>+1</sup> <sub>0</sub> mm Panel thickness: 1.6 to 4.8 mm	Width 220.5 <sup>+0.5</sup> <sub>0</sub> × Height 165.5 <sup>+0.5</sup> <sub>0</sub> mm Panel thickness: 1.6 to 4.8 mm	Width 184 <sup>+0.5</sup> <sub>0</sub> × Height 131 <sup>+0.5</sup> <sub>0</sub> mm Panel thickness: 1.6 to 4.8 mm
Weight	4.2 kg max.	2.5 kg max.		2.0 kg max.	1.0 kg max.
Enclosure rating	Front panel: IP65 oil-proof type (equivalent to NEMA4) (See note 4.)				
Battery life	5 years (at 25°C) The SRAM and RTC will be backed up for 5 days after the battery runs low (indicator lights orange). The SRAM and RTC will be backed up by a super capacitor for 5 minutes after removing the old battery (i.e., after turning ON power after 5 minutes).				
International standards	EC Directives	UL 1604 Class 1 Division 2, EC Directives			

Note 1. The operating temperature is subject to the following restrictions, depending on the mounting angle and whether an Expansion Unit is installed or not.

## Appendix 1 Specifications

- Without any Expansion Unit Installed
    - NS15-V2/NS12-V1/-V2, NS10-V1/-V2, NS8-V1/-V2
      - Mounting angle of 0° to less than 30° to the horizontal:
        - Operating temperature range of 0 to 45°C
      - Mounting angle of 30° to 90° or less to the horizontal:
        - Operating temperature range of 0 to 50°C
    - NS5-V1/-V2
      - Mounting angle of 0° to 90° or less to the horizontal:
        - Operating temperature range of 0 to 50°C
  - With an Expansion Unit (Video Input Unit or Controller Link Unit) Installed
    - NS15-V2/NS12-V1/-V2, NS10-V1/-V2
      - Mounting angle of 0° to less than 30° to the horizontal:
        - Operating temperature range of 0 to 35°C
      - Mounting angle of 30° to 90° or less to the horizontal:
        - Operating temperature range of 0 to 50°C
    - NS8-V1/-V2
      - Mounting angle of 0° to less than 30° to the horizontal:
        - Operating temperature range of 0 to 35°C
      - Mounting angle of 30° to less than 90° to the horizontal:
        - Operating temperature range of 0 to 45°C
      - Mounting angle of 90° to the horizontal:
        - Operating temperature range of 0 to 50°C
2. Operate the PT within the temperature and humidity ranges shown in the following diagram.



3. When a STN LCD display device is used (NS5-SQ□-V1/-V2 or NS5-MQ□-V2), the display quality will decline (e.g., the contrast ratio will be reduced) if the temperature exceeds 40°C. Also, when the temperature drops, the response speed is lowered due to characteristics of liquid crystals.
4. May not be applicable in locations with long-term exposure to oil.

## A-1-2 Characteristics

### ● Display Specifications

Item		Specifications				
		NS15-TX01□-V2	NS12-TS0□-V1 NS12-TS0□-V2	NS10-TV0□-V1 NS10-TV0□-V2	NS8-TV□□-V1	NS8-TV0□-V2
Display panel (See note 5.)	Display device	High-definition TFT color LCD				
	Number of dots	1024 dot horizontal × 768 dot vertical	800 dot horizontal × 600 dot vertical	640 dot horizontal × 480 dot vertical		
	Display color	256 colors (32,768 colors for BMP/JPEG images, NS5: 4,096 colors for BMP/JPEG images)				
	Display area	Width 304.1 mm × height 228.1 mm (15.0 inches)	Width 246.0 mm × height 184.5 mm (12.1 inches)	Width 215.2 mm × height 162.4 mm (10.4 inches)	Width 162.2 mm × height 121.7 mm (8.0 inches)	Width 170.9 mm × height 128.2 mm (8.4 inches)
	View angle	Left/right ±85°, Top 70°, Bottom 80°	Left/right ±60°, Top 45°, Bottom -V1: 55°, -V2: 75°	Left/right ±60°, Top 35°, Bottom 65°	Left/right ±60°, Top 50°, Bottom 60°	Left/right ±65°, Top 50°, Bottom 60°
Backlight (See note 4.)	Life expectancy	50,000 hours min. (See note 1.)			40,000 hours min. (See note 1.)	50,000 hours min. (See note 1.)
	Brightness adjustment	There are 3 levels of adjustment by operating the touch panel. (See note 2.) Brightness can also be adjusted using an external variable resistor. (Set from the System Menu.)	There are 3 levels of adjustment by operating the touch panel. (See note 2.)			
	Backlight error detection	Error is detected automatically, and the RUN indicator flashes green as notification. (See note 3.)			No detection function.	Error is detected automatically, and the RUN indicator flashes green as notification. (See note 3.)
Front panel indicators	RUN	Lit green: Flashing green:  Lit orange:  Flashing orange: Flashing red:	PT is operating normally. The Memory Card transfer has ended normally or a backlight error was detected immediately after power was turned ON. (Backlight errors are not detected for the NS8-V1.) Immediately after power turns ON, indicates file system check in progress, battery low, or disconnected and operating normally. Memory Card transfer in progress. Memory Card transfer has ended abnormally.			
Rear panel indicators	MCPWR	Lit green: Memory Card power ON. Green not lit: Memory Card power OFF.	None			

### ● Operating Specifications

Item	NS15-TX01□-V2	NS12-TS0□-V1/ NS12-TS0□-V2	NS10-TV0□-V1/ NS10-TV0□-V2	NS8-TV□□-V1/ NS8-TV□□-V2	NS5-SQ0□-V1 NS5-SQ□□-V2 NS5-TQ□□-V2 NS5-MQ□□-V2
Touch panel	Method: Resistive membrane				
	Vertical and horizontal resolution: 1024 Three function keys (Analog)	Number of switches: 1900 (50 horizontal × 38 vertical) 16 × 16 dots for each switch. (Matrix type)	Number of switches: 1200 (40 horizontal × 30 vertical) 16 × 16 dots for each switch. (Matrix type)	Number of switches: 768 (32 horizontal × 24 vertical) 20 × 20 dots for each switch. (Matrix type)	Number of switches: 300 (20 horizontal × 15 vertical) 16 × 16 dots for each switch. (Matrix type)
	Input: Pressure-sensitive				
	Service life: 1,000,000 touch operations.				

### ● Data Capacity Specifications

Item	NS15-TX01□-V2 NS12-TS0□-V2 NS10-TV0□-V2 NS8-TV0□-V2	NS12-TS0□-V1 NS10-TV0□-V1	NS8-TV□□-V1	NS5-SQ0□-V1	NS5-SQ0□-V2 NS5-TQ0□-V2 NS5-MQ0□-V2
Standard screen data capacity	60 MB	20 MB	NS8-TV0□-V1: 6 MB NS8-TV1□-V1: 20 MB	6 MB	20 MB

### ● External Interface Specifications

Item	Specifications			
	NS15-TX01□-V2	NS12-TS0□-V1/-V2 NS10-TV0□-V1/-V2 NS8-TV□□-V1/-V2	NS5-SQ0□-V1/-V2 NS5-TQ0□-V2 NS5-MQ0□-V2	NS5-SQ1□-V2 NS5-TQ1□-V2 NS5-MQ1□-V2
USB HOST	1 port (for connecting printers)		None	
USB Slave	1 port (screen data transfer, connection to computer, connection to printer) (NS-V2 only)		1 port (screen data transfer, connection to computer)	1 port (screen data transfer, connection to computer, connection to printer)
Memory card interface	1 ATA-Compact Flash interface slot. Used to transfer and store screen data and to store history data.			
Expansion interface (See note.)	For Expansion Interface Units Used to install a Controller Link Interface Unit or Video Input Unit.		For Expansion Interface Units Used to install Expansion Units specially designed for the NS5.	
Analog RGB output	1 port (connects to an LCD monitor)	---		
External brightness adjustment	Used to adjust brightness externally	---		

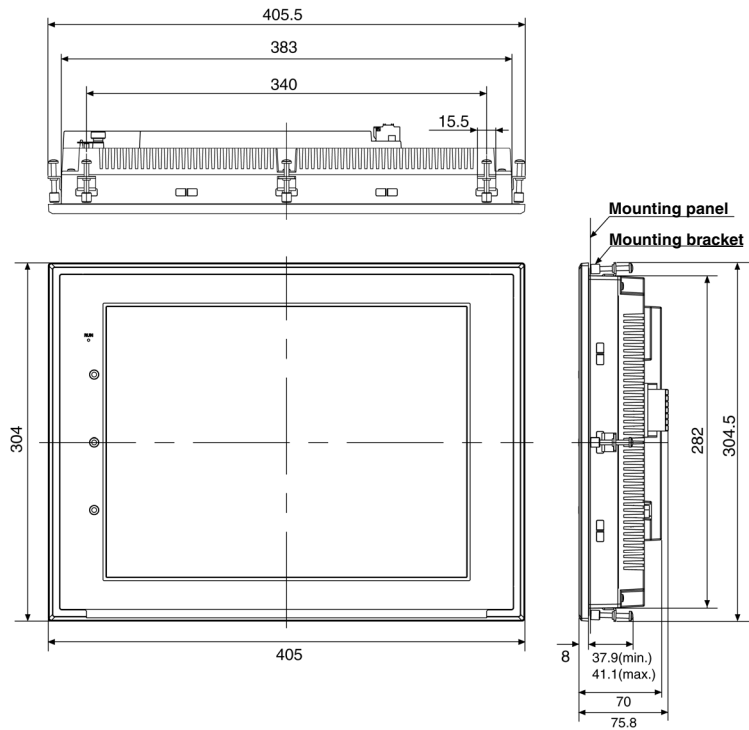
Note: This interface is for NS-series PTs only. Units not specified in this manual cannot be installed.

### ● Programming Device (Software for Creating Screen Data)

Item	Specifications
Name	CX-Designer
Model	NS-CXDC1-V□

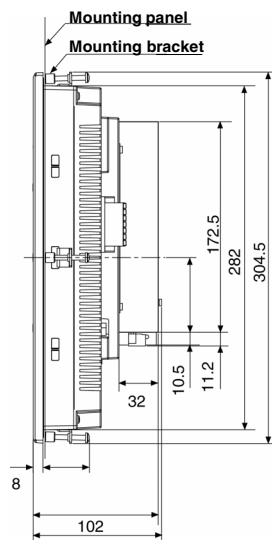
## Appendix 2    Dimensions

### ● NS15 (Includes Mounting Dimensions)

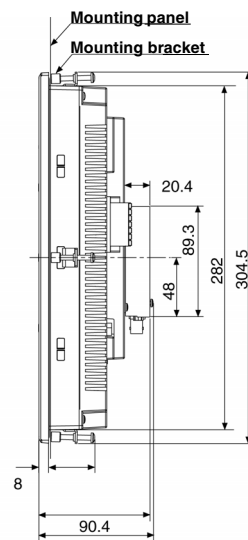


Note: The NS15 conforms to version-2 hardware standards.

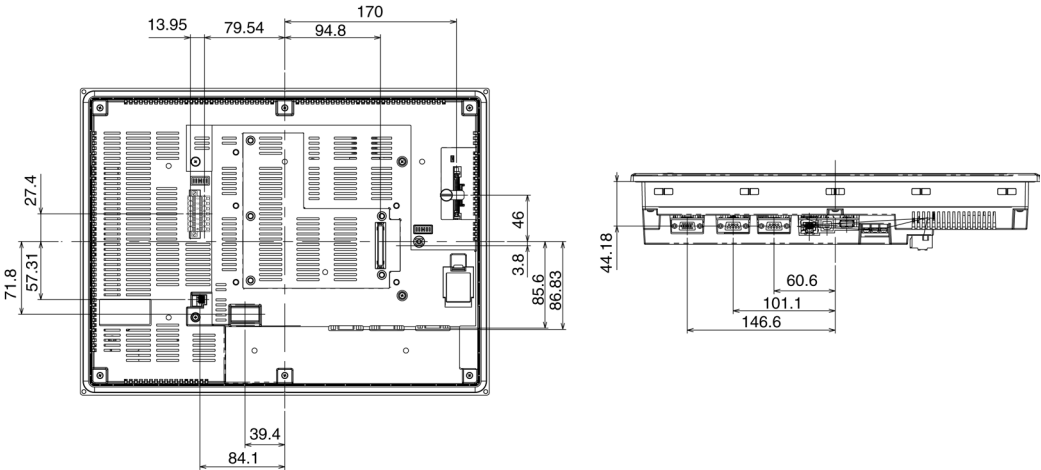
#### With Controller Link Interface Unit Mounted



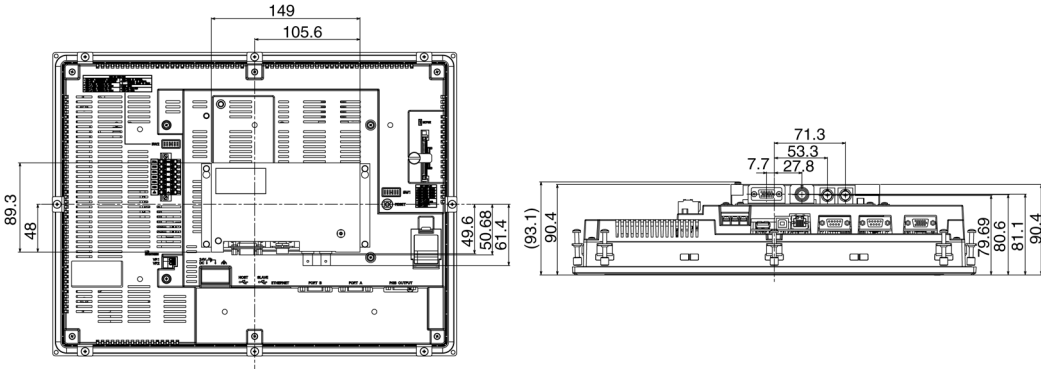
#### With Video Input Unit Mounted



● NS15 Cable Connection Dimensions



● NS15 Video Board (NS-CA001) Mounted Dimensions



● NS15 Controller Link Interface Unit Mounted Dimensions

