

# M-Series

Industrial Flat Panel Monitors, 12.1"-19" High Performance LCDs



## Overview

Offering unparalleled value and superb quality, the M-Series are high performance 12.1", 15", 17" and 19" color TFT flat panel monitors specifically designed for harsh industrial environments including Class I & II, Division 2 Hazardous Locations when mounted in a NEMA enclosure.

M-Series monitors accept standard analog VGA inputs and can display all VESA video modes up to 1280 x 1024 with 16 million colors. An optional 5-wire analog touchscreen is available that offers RS-232 or USB interface capability.

M-Series monitors are housed in heavy duty steel chassis with powder coated machined aluminum bezels. The monitors are certified to NEMA 4/4X/12 standards, are UL/CUL listed, meet CE requirements and are RoHS compliant.

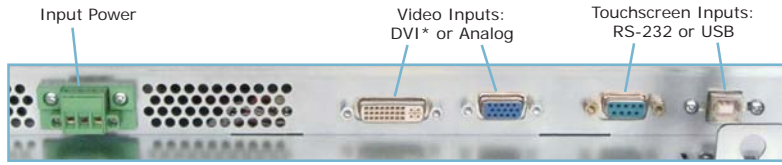
All M-Series monitors are shipped with a power input wiring receptacle, VGA cable, touchscreen cables, mounting hardware, manual and driver software.

## Standard Features

- 12.1" SVGA to 19" SXGA Color TFT LCD Display
- Optional 5-wire Analog Resistive Touchscreen
- Ultra-Thin panel mounting depth, less than 2.7" behind bezel
- UL 508 and UL 1604 listed for Hazardous Locations: Class I, Division 2, Groups A, B, C, D and Class II, Division 2, Groups F and G when mounted in a NEMA enclosure
- NEMA 4/4X/12 front bezel
- 2-Year warranty
- CE & RoHS Compliant
- Integral 100-240 VAC power supply
- Simplified installation with no studs
- Accepts analog 15-pin video input or DVI input
- VESA compliant - all modes up to SXGA, 16 million colors
- Optional 5-wire resistive touch screen with RS-232 or USB interface
- Optional 304 stainless steel front bezel
- Optional 24 VDC input power

# Features & Benefits

## Power & VGA Input Panel



\* DVI cable sold separately. Consult factory for details.



Ultra-thin,  
extremely  
compact  
design



Optional  
5-wire Analog  
Resistive  
Touchscreen

Made with  
Pride in  
the USA

UL, cUL 508,  
Class I, Div 2,  
CE, & RoHS  
Approvals

Integral  
100-240  
VAC or  
24 VDC  
Power  
Supply



Powder Coated  
Aluminum or  
Stainless Steel  
Front Panels



**VESA Mounting**

- M1200/M1500/1700:  
75x75mm
- M1900: 100x100mm  
(M4 Threads)



**NEMA Panel  
Mounting via  
Clips**



**USB Touchscreen  
Cable Retention**

- Required when installed  
in Hazardous Locations



Meet all RoHS Hazardous  
Safety Standards.



# Technical Specifications

## DISPLAY



	<b>M1200</b>	<b>M1500</b>	<b>M1700</b>	<b>M1900</b>
<b>Display Diagonal</b>	12.1" (307.34mm)	15.0" (381.0mm)	17.0" (431.8mm)	19.0" (482.6mm)
<b>Display Sizes</b> (Active Area H x V)	9.69" x 7.26" (246.0mm x 184.5mm)	11.97" x 8.98" (304.0mm x 228.1mm)	13.30" x 10.64" (337.8mm x 270.3mm)	14.82" x 11.85" (376.4mm x 301.0mm)
<b>Native Resolution</b>	SVGA, 800 x 600	XGA, 1024 x 768	SXGA, 1280 x 1024	SXGA, 1280 x 1024
<b>Displayable Colors</b>	262K	16M	16M	16M
<b>Brightness, Typical</b>	400 Nit	250 Nit	300 Nit	300 Nit
<b>Contrast Ratio, Typical</b>	500:1	800:1	800:1	1300:1
<b>Horizon/Vertical View Angle, CR&gt;5, Typical</b>	130°/110°	150°/145°	176°/170°	178°/178°
<b>Backlight Life, Typical</b>	50,000 hrs	50,000 hrs	50,000 hrs	50,000 hrs

## TOUCH SCREEN (all models)

<b>Touch Screen Technology</b>	ELO AccuTouch, 5-wire Analog Resistive
<b>Resolution</b>	4096 x 4096
<b>Positional Accuracy</b> (Maximum Error)	0.18" (0.19" M1900) 4.57mm (4.83mm M1900)
<b>Positional Accuracy</b> (Standard Deviation of Error)	< 0.08" (< 2.0 mm)
<b>Expected Life</b>	>35,000,000 Activations

## ELECTRICAL

<b>AC Input Voltage</b>	100-240 VAC, 50/60 Hz
<b>AC Input Current</b>	M1200/1500 - 0.5 A Max M1700 - 1.0 A Max M1900 - 1.0 A Max
<b>DC Input Voltage (optional)</b>	18-36 VDC
<b>DC Input Current (optional)</b>	M1200/1500 - 0.75 A Max M1700 - 1.15 A Max M1900 - 1.45 A Max
<b>Input Power</b>	M1200/1500 - 25 W Typical M1700 - 30 W Typical M1900 - 35 W Typical

## ENVIRONMENTAL

	<b>Operating</b>	<b>Non-operating</b>
<b>Temp.</b>	0°C to 50°C	-20°C to 60°C
<b>Humidity</b>	20% to 80% RH, noncondensing	
<b>Shock</b>	15g peak acceleration, 11msec	30g peak acceleration, 11msec
<b>Vibration</b>	.006" peak to peak displacement (5-2000 Hz) 1.0g maximum acceleration	.015" peak to peak displacement 2.5g maximum acceleration
<b>Altitude<sup>a</sup></b>	Sea level to 10,000 feet	Sea level to 40,000 feet

<sup>a</sup> Altitude specification is established by using all internal component specifications.

## AGENCY

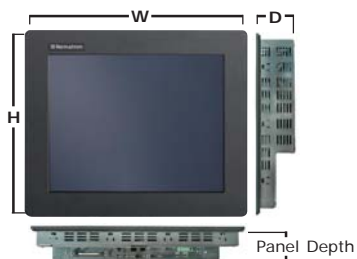
<b>Front Panel NEMA Rating</b>	NEMA 4/4X/12, IP65
<b>FCC</b>	47 CFR, Part 15, Class A
<b>EU CE Marking Compliance</b>	CE, EN 55022: Class A, EN 61000-3-3, EN 61000-6-2, IEC 60950-1, RoHS compliant
<b>Safety Agency Approvals</b>	UL508 Listed, UL 1604 Listed *, cUL Listed CSA C22.2, #142, cUL Listed CSA C22.2, #143 *

\* Class I Division 2, Groups A, B, C, D; Class II, Division 2, Groups F and G; Temp. Code: T5, when installed on a flat surface of a Type 1, 4, 4X, or 12 enclosure.

## PHYSICAL

	<b>M1200</b>	<b>M1500</b>	<b>M1700</b>	<b>M1900</b>
<b>Overall Dimensions</b> (H x W x D)	10.475" x 12.9" x 2.6" (266.1mm x 327.7mm x 66.0mm)	12.80" x 15.80" x 2.65" (325.1mm x 401.3mm x 67.3mm)	14.48" x 17.14" x 2.85" (367.8mm x 442.0mm x 72.4mm)	15.70" x 18.66" x 2.95" (398.8mm x 474.0mm x 75.0mm)
<b>Panel Mounting Depth</b>	2.35" (59.7mm)	2.4" (61.0mm)	2.6" (66.0mm)	2.7" (68.6mm)
<b>Cutout Dimensions</b> (H x W)	9.68" x 12.10" (245.9mm x 307.3mm)	12.00" x 15.00" (305.0mm x 381.0mm)	13.70" x 16.35" (348.0mm x 415.3mm)	14.90" x 17.75" (378.5mm x 450.9mm)
<b>VESA Mount Pattern</b> (M4 Threads)	75x75mm	75x75mm	75x75mm	100x100mm
<b>Weight</b>	9.5 lbs (4.31kg)	14.0 lbs (6.35kg)	18.5 lbs (8.39kg)	22.5 lbs (10.21kg)
<b>Shipping Weight</b>	13.0 lbs (5.89kg)	19.0 lbs (8.62kg)	23.5 lbs (10.66kg)	27.5 lbs (12.47kg)
<b>Option Weight (SS)*</b>	+2.5 lbs (1.13kg)*	+3.5 lbs (1.58kg)*	+3.75 lbs (1.70kg)*	+4.0 lbs (1.81kg)*

\* Additional weight for Stainless Steel option.

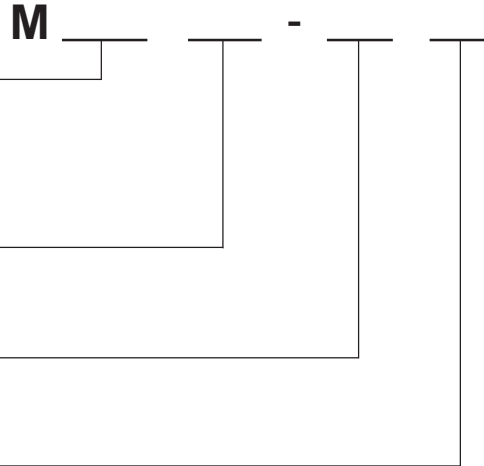


## Cutout Dimensions

<b>M1200</b>	<b>M1500</b>	<b>M1700</b>	<b>M1900</b>
12.10" (W) 307.3mm	15.00" (W) 381.0mm	16.35" (W) 415.3mm	17.75" (W) 450.9mm
9.68" (H) 245.9mm	12.00" (H) 305.0mm	13.70" (H) 348.0mm	14.90" (H) 378.5mm

## Order Number Generation

**Example unit configuration: Mx00T-24-SS**, where **x** = 12, 15, 17, or 19 (for display size) NEMA 4/4X/12 Panel mount, TFT flat panel monitor with 5-wire analog resistive touch screen, 24V DC power supply, and Machined 304 Stainless Steel Front Panel. Ships with AC wiring receptacle, 10' VGA cable, 10' RS-232 cable, 10' USB cable, driver software, mounting hardware and operator's guide (DVI cable sold separately).



### Display Size:

<b>1200</b>	12.1" SVGA LCD
<b>1500</b>	15.0" XGA LCD
<b>1700</b>	17.0" SXGA LCD
<b>1900</b>	19.0" SXGA LCD

### Input Options:

<b>T</b>	Touchscreen
<b>blank</b>	None

### Power Supply:

<b>blank</b>	120-240 VAC
<b>-24</b>	24 Volt DC

### Front Panel:

<b>blank</b>	Powder Coated Aluminum
<b>-NL</b>	Powder Coated Aluminum w/o Logo
<b>-SS</b>	Machined 304 Stainless Steel w/o Logo
<b>-RM</b>	Rackmount powder-coated aluminum (19.0" only) <sup>1</sup>

<sup>1</sup> Rackmount front panel is not NEMA 4/4X/12 and is required to be installed on a rack in a Type 1 enclosure.

## Accessories

<b>CBL-10-VGA</b>	15-Pin analog VGA cable, 10' length	<b>MTG-RM-1500</b>	Rackmount adapter plate for M1500/M1500T
<b>CBL-25-VGA</b>	15-Pin analog VGA cable, 25' length	<b>MTG-RM-1700</b>	Rackmount adapter plate for M1700/M1700T
<b>CBL-50-VGA</b>	15-Pin analog VGA cable, 50' length	<b>MTG-CAP-5015</b>	Cutout adapter plate for mounting an M1500 in a Xycom 5015T or 5015T/R2 cutout. Requires drilling 16 mounting holes around the present cutout.
<b>CBL-10-RS232</b>	Serial RS-232 touch screen cable, 10' length	<b>MTG-CAP-5017</b>	Cutout adapter plate for mounting an M1700 in a Xycom 5017 cutout. Requires drilling 16 mounting holes around the present cutout.
<b>CBL-25-RS232</b>	Serial RS-232 touch screen cable, 25' length	<b>PWR-AC</b>	Plug for field wiring AC power
<b>CBL-50-RS232</b>	Serial RS-232 touch screen cable, 50' length	<b>PWR-DC</b>	Plug for field wiring DC power
<b>CBL-10-USB</b>	USB touch screen cable, 10' length	<b>MISC-CLIP</b>	Mounting clip kit, includes 16 clips and screws
<b>CBL-15-USB</b>	USB touch screen cable, 15' length	<b>CBL-PWR-AC</b>	6' AC wiring cable with standard 3-prong US end on one side and Phoenix Power Wiring connector with cover on other end. <b>NOTE: NOT allowed for use in Hazardous Conditions.</b>
<b>CBL-2M-DVI</b>	DVI (type D) video cable, 2 m length		
<b>CBL-3M-DVI</b>	DVI (type D) video cable, 3 m length		

## Additional Models

Nematron offers additional models which are cut out compatible with units from other suppliers. These are for replacement installations only and are not recommended for new applications. Consult [info@nematron.com](mailto:info@nematron.com) for more details. Some examples are:

- Nematron M1900 replaces the Viewtronix SXT1811 and Xycom 5019
- Nematron M1502 replaces the Viewtronix/Xycom XT1502
- Nematron M1040 replaces the Viewtronix/Xycom VT1040



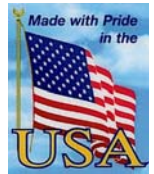
## Contact Information

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## ePC-Series

Embedded High Performance Ultra-Thin 12.1" to 19" TFT Industrial PCs



**12.1"  
Version Now  
Available!**

With the Nematron ePC-Series, “embedded” doesn’t have to mean low performance any longer. This series offers ultra-thin industrial PCs with Intel® Duo Core™ Technology to power the most demanding operator interface and SCADA applications. Now available with your choice of 12.1”, 15”, 17”, or 19” LCD displays, the ePC-Series are setting a new benchmark for “Industrial PCs”.

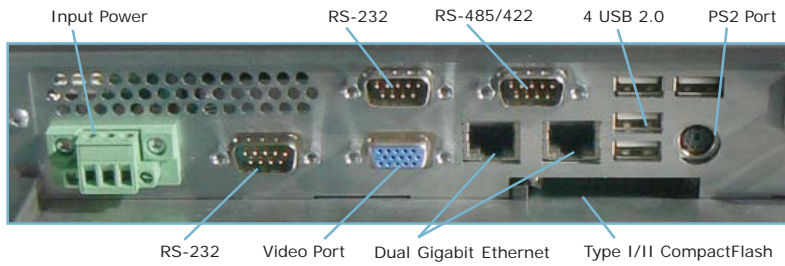
### Standard Features

- 12.1" SVGA to 19" SXGA Color TFT LCD Display
- Optional 5-wire Analog Resistive Touchscreen
- Ultra-Thin panel mounting depth, less than 3.2"
- High Performance / Low Power Processor options\* to choose from:
  - Intel® Celeron® M 440 (1.86 GHz, 1 M cache, 533 MHz bus)
  - Intel® Core Duo™ T2500 (2.0 GHz, 2 M cache, 667 MHz bus)
- DRAM up to 2 GB
- 160 GB easily removable SATA hard drive
  - Solid State options available
- Extensive I/O Connectivity
  - Dual Gigabit (10/100/1000) Ethernet ports
  - 4 USB 2.0 ports
  - 1 RS-485/422 serial port (jumper selectable)
  - 2 RS-232 serial ports
  - PS/2 port
  - Additional video port (supports dual video)
  - Rear accessible CompactFlash™ Type I/II socket
- Integral 100-240 VAC power supply
  - 24 VDC optional
- Powder Coated Aluminum Front Panel (optional Stainless Steel)
- NEMA 4/4x/12 front panel
- 2-year Warranty
- UL 508 and UL 1604 listed for Hazardous Locations: Class I, Division 2, Groups A, B, C, D and Class II, Division 2, Groups F and G when mounted in a NEMA enclosure
- FCC & European CE compliant
- RoHS compliant
- Windows® XP Professional (Windows 7 Professional optional)

\* Fanless Versions now available. See ePC Fanless Series datasheet.

# Features & Benefits

## Extensive I/O Connectivity



## Easily Removable SATA Hard Drive - Solid State options



## Ultra-thin, extremely compact design

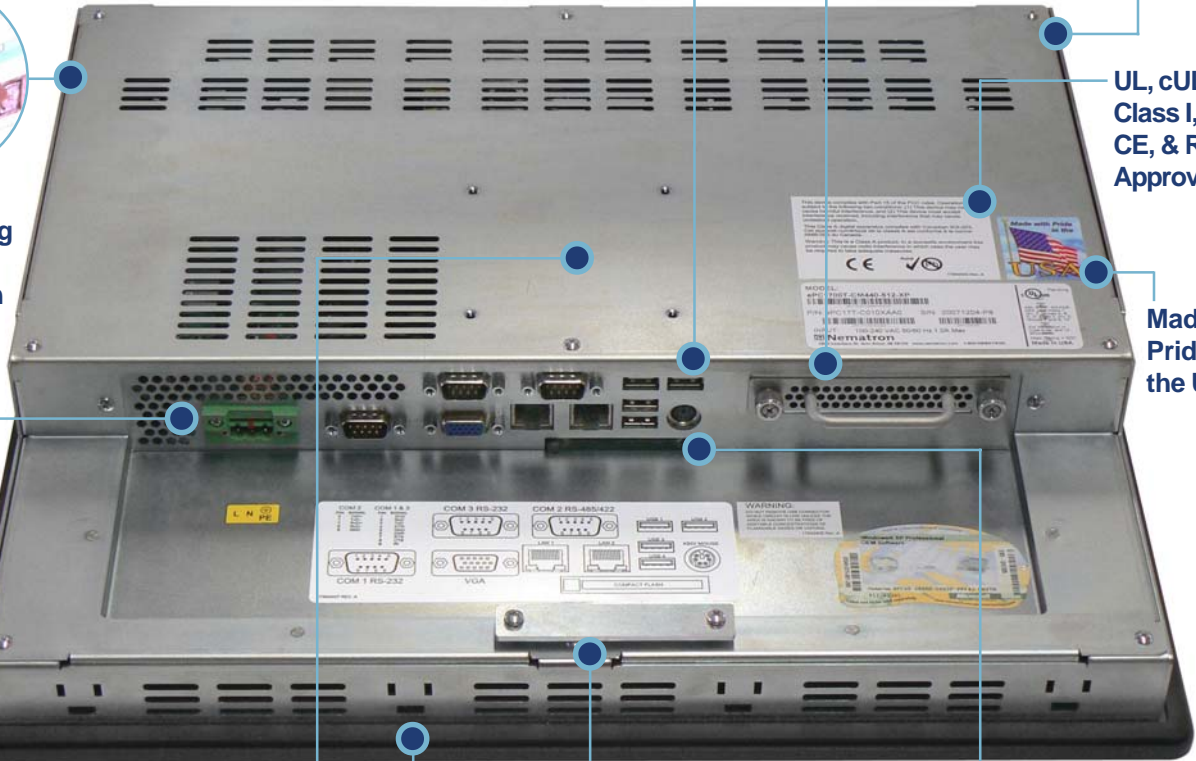


## Optional 5-wire Analog Resistive Touchscreen

## UL, cUL 508, Class I, Div 2, CE, & RoHS Approvals

## Made with Pride in the USA

## Integral 100-240 VAC or 24 VDC Power Supply



## Powder Coated Aluminum or Stainless Steel Front Panels



## USB, Ethernet, & PS/2 Hold Down



## CompactFlash to replace CD-ROM and floppy drives



## VESA Mounting

- ePC1200/1500/1700: 75mm
- ePC1900: 100mm



## NEMA Panel Mounting via Clips



## High Performance / Low Power Processor Options\*

- Intel® Celeron® M 440 (1.86 GHz, 1 M cache, 533 MHz bus)
- Intel® Core Duo™ T2500 (2.0 GHz, 2 M cache, 667 MHz bus)

\* Fan-less Versions now available. See ePC Fan-less Series datasheet.



Meet all RoHS Hazardous Safety Standards.



# Technical Specifications

## SYSTEM SPECS

Chipset	Intel 945GME + ICH7M	
Video	Integrated in system chipset	
Video RAM	8 MB - 128 MB (system RAM)	
Type & Processor	Intel Celeron M CM440	Intel Core Duo T2500
Core Speed	1.86 GHz	2.0 GHz
Front Side Bus	533 MHz	667 MHz
L2 Cache	1MB	2MB
Ethernet Controller	Broadcom	

## DISPLAY

	ePC1200	ePC1500	ePC1700	ePC1900
Display Diagonal	12.1" (307.34mm)	15.0" (381.0mm)	17.0" (431.8mm)	19.0" (482.6mm)
Display Sizes (Active Area H x V)	9.69" x 7.26" (246.0mm x 184.5mm)	11.97" x 8.98" (304.0mm x 228.1mm)	13.30" x 10.64" (337.8mm x 270.3mm)	14.82" x 11.85" (376.4mm x 301.0mm)
Native Resolution	SVGA, 800 x 600	XGA, 1024 x 768	SXGA, 1280 x 1024	SXGA, 1280 x 1024
Displayable Colors	262K	16M	16M	16M
Brightness, Typical	400 Nit	250 Nit	300 Nit	300 Nit
Contrast Ratio, Typical	500:1	800:1	800:1	1300:1
Horizon/Vertical View Angle, CR>5, Typical	130°/110°	150°/145°	176°/170°	178°/178°
Backlight Life, Typical	50,000 hrs	50,000 hrs	50,000 hrs	50,000 hrs

## TOUCH SCREEN (all models)

Touch Screen Technology	5-wire Analog Resistive
Resolution	4096 x 4096
Positional Accuracy (Maximum Error)	0.18" (0.19" ePC1900) 4.57mm (4.83mm ePC1900)
Positional Accuracy (Standard Deviation of Error)	< 0.08" (< 2.0 mm)
Expected Life	>35,000,000 Activations

## MEMORY

DRAM Type	200-pin DDR2 SO-DIMM, non-ECC, un-buffered
DRAM Bus Speed	667 MHz (CM440 - 533 MHz)
DRAM Maximum	Single Module, 2 GB
Hard Drive Type	2.5", SATA II
Hard Drive Size	160 GB Minimum
Solid State Hard Drive	40 GB or 80 GB (optional)

## ELECTRICAL

AC Input Voltage	100-240 VAC, 50/60 Hz
AC Input Current	1.0 A Maximum
DC Input Voltage (optional)	18-36 VDC
DC Input Current (optional)	4.5 A Max
Input Power	ePC1200/1500 - 50 W Typical* ePC1700 - 60 W Typical* ePC1900 - 70 W Typical*

\* Typical Power is measured without any additional I/O or expansion options. Any additional I/O installed during application can increase this value.

## ENVIRONMENTAL

Temp.	Operating 0°C to 50°C	Non-operating -20°C to 60°C
Humidity	20% to 80% RH, noncondensing	
Shock <sup>1</sup>	15g peak acceleration, 11msec	30g peak acceleration, 11msec
Vibration <sup>1</sup>	.006" peak to peak displacement 1.0g maximum acceleration	.015" peak to peak displacement 2.5g maximum acceleration
Altitude <sup>2</sup>	Sea level to 10,000 feet	Sea level to 40,000 feet

<sup>1</sup> Shock & Vibration specifications established with Solid State drives and no rotating media.

<sup>2</sup> Altitude specification is established by using all internal component specifications.

## AGENCY

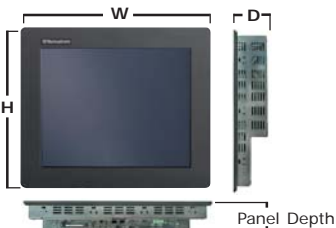
Front Panel NEMA Rating	NEMA 4/4X/12, IP65
FCC	47 CFR, Part 15, Class A
EU CE Marking Compliance	CE, EN 55022: Class A, EN 61000-3-3, EN 61000-6-2, IEC 60950-1, RoHS compliant
Safety Agency Approvals	UL508 Listed, UL 1604 Listed *, cUL Listed CSA C22.2, #142, cUL Listed CSA C22.2, #143 *

\* Class I Division 2, Groups A, B, C, D; Class II, Division 2, Groups F and G; Temp. Code: T4A, when installed on a flat surface of a Type 1, 4, 4X, or 12 enclosure.

## PHYSICAL

	ePC1200	ePC1500	ePC1700	ePC1900
Overall Dimensions (H x W x D)	10.475" x 12.9" x 3.42" (266.1mm x 327.7mm x 86.75mm)	12.80" x 15.80" x 2.95" (325.1mm x 401.3mm x 74.9mm)	14.48" x 17.14" x 3.10" (367.8mm x 442.0mm x 78.7mm)	15.70" x 18.66" x 3.25" (398.8mm x 474.0mm x 82.6mm)
Panel Mounting Depth	3.165" (80.4mm)	2.70" (68.6mm)	2.85" (72.4mm)	3.00" (76.2mm)
Cutout Dimensions (H x W)	9.68" x 12.10" (245.9mm x 307.3mm)	12.00" x 15.00" (305.0mm x 381.0mm)	13.70" x 16.35" (348.0mm x 415.3mm)	14.90" x 17.75" (378.5mm x 450.9mm)
VESA Mount Pattern (M4 Threads)	75x75mm	75x75mm	75x75mm	100x100mm
Weight	10.5 lbs (4.76kg)	15.0 lbs (6.80kg)	19.0 lbs (8.63kg)	22.5 lbs (10.22kg)
Shipping Weight	14.0 lbs (6.35kg)	19.5 lbs (8.84kg)	23.5 lbs (10.67kg)	27.5 lbs (12.49kg)
Option Weight (SS)*	+2.5 lbs (1.13kg)*	+3.5 lbs (1.58kg)*	+3.75 lbs (1.70kg)*	+4.0 lbs (1.81kg)*

\* Additional weight for Stainless Steel option.



## Cutout Dimensions

Model	Width (W)	Height (H)
ePC1200	12.10" (307.3mm)	9.68" (245.9mm)
ePC1500	15.00" (381.0mm)	12.00" (305.0mm)
ePC1700	16.35" (415.3mm)	13.70" (348.0mm)
ePC1900	17.75" (450.9mm)	14.90" (378.5mm)

## Order Number Generation

**Base unit configuration: ePCx00T-CM440-1GB-XP**, where **x** = 12, 15, 17, or 19 (for display size), includes a touchscreen, Celeron M 440, 1 GB DRAM, 160 GB SATA Hard Drive, and Windows XP Professional.

**ePC** \_\_\_\_\_ - \_\_\_\_\_

**Display Size:**

<b>1200</b>	12.1" SVGA LCD
<b>1500</b>	15.0" XGA LCD
<b>1700</b>	17.0" SXGA LCD
<b>1900</b>	19.0" SXGA LCD

**Input Options:**

<b>T</b>	Touchscreen
<b>blank</b>	None

**Processor:**

<b>CM440</b>	Celeron M 440
<b>T2500</b>	Core Duo T2500

**DRAM Options:**

<b>-1GB</b>	1 GB DRAM
<b>-2GB</b>	2 GB DRAM

**Hard Drive:**

<b>-blank</b>	160 GB (minimum) SATA hard drive
<b>-40SS</b>	40 GB Solid State SATA hard drive <sup>1</sup>
<b>-80SS</b>	80 GB Solid State SATA hard drive <sup>1</sup>

**Operating System:**

<b>-XP</b>	Windows XP Professional
<b>-W7</b>	Windows 7 Professional (32-bit)
<b>-NOS</b>	No OS installed

**Power Supply:**

<b>blank</b>	120-240 VAC
<b>-DC</b>	24 Volt DC

**Front Panel:**

<b>blank</b>	Powder Coated Aluminum
<b>-NL</b>	Powder Coated Aluminum w/o Logo
<b>-SS</b>	Machined 304 Stainless Steel
<b>-RM</b>	Rackmount Powder Coated Aluminum (ePC1900 only) <sup>2</sup>

<sup>1</sup> Solid State Drive options carry a 5-year (part only) warranty.

<sup>2</sup> Rackmount front panel is not NEMA 4/4x12 and the unit is required to be installed on a rack in a Type 1 enclosure.



### Contact Information

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# ePC Fanless Series

Embedded High Performance Ultra-Thin 12.1" to 19" TFT Industrial PCs without Fans or Rotating Media



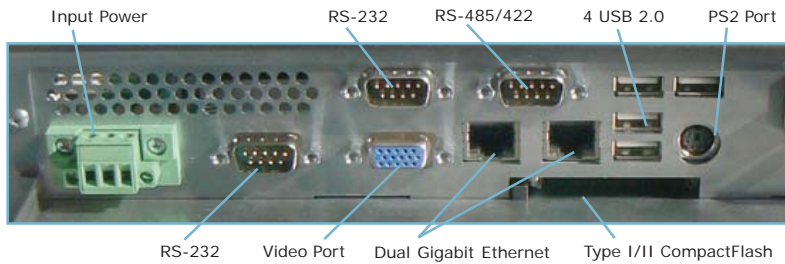
With the Nematron ePC Fanless Series, performance no longer needs to be sacrificed. With an Intel® Atom N270 processor (1.6 GHz) and a high performance SATA Solid State drive, this series provides the performance of most conventional industrial PCs. This Series is the perfect solution for most high-end operator interface or SCADA applications where proprietary solutions do not supply the "open" connectivity desired in most of today's automation applications. The ePC Fanless Series offers all the I/O and features of the standard ePC-Series without the use of fans or rotating media.

## Standard Features

- 12.1" SVGA to 19" SXGA Color TFT LCD Display
- Optional 5-wire Analog Resistive Touchscreen
- Ultra-Thin panel mounting depth, less than 3.2"
- High Performance/ Very Low Power Fanless Processor
  - Intel® ATOM N270 (1.6 GHz, 512 K Cache, 533 MHz bus)
- DRAM up to 2 GB
- 40 and 80 GB High Performance SATA Solid State Drives
  - Conventional Rotating SATA Hard Drive option available
- Extensive I/O Connectivity
  - Dual Gigabit (10/100/1000) Ethernet ports
  - 4 USB 2.0 ports
  - 1 RS-485/422 serial port (jumper selectable)
  - 2 RS-232 serial ports
  - PS/2 port
  - Additional video port (supports dual video)
  - Rear accessible CompactFlash™ Type I/II socket
- Integral 100-240 VAC power supply
  - 24 VDC optional
- Powder Coated Aluminum Front Panel (optional Stainless Steel)
- NEMA 4/4x/12 front panel
- 2-year Warranty
- UL 508 and UL 1604 listed for Hazardous Locations: Class I, Division 2, Groups A, B, C, D and Class II, Division 2, Groups F and G when mounted in a NEMA enclosure
- FCC & European CE compliant
- RoHS compliant
- Windows® XP Professional (Windows 7 Professional optional)

# Features & Benefits

## Extensive I/O Connectivity

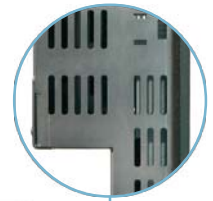


## Easily Removable SATA Solid State Drives

- Conventional Hard Drive Optional



Ultra-thin, extremely compact design

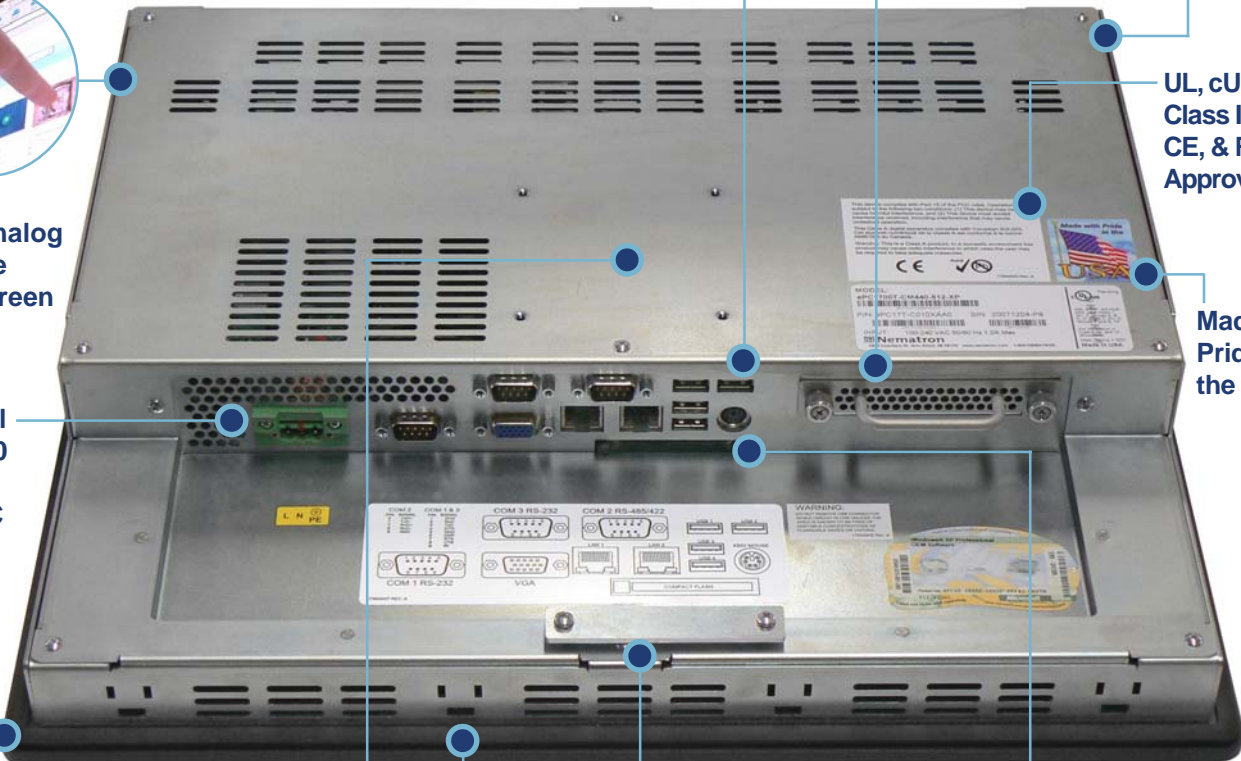


Optional 5-wire Analog Resistive Touchscreen

UL, cUL 508, Class I, Div 2, CE, & RoHS Approvals

Made with Pride in the USA

Integral 100-240 VAC or 24 VDC Power Supply



Powder Coated Aluminum or Stainless Steel Front Panels



USB, Ethernet, & PS/2 Hold Down



CompactFlash to replace CD-ROM and floppy drives



### VESA Mounting

- ePC1200/1500/1700: 75mm
- ePC1900: 100mm



NEMA Panel Mounting via Clips



## High Performance/ Very Low Power Fanless Processor

- Intel® ATOM N270  
(1.6 GHz, 512 K Cache, 533 MHz bus)



Meet all RoHS Hazardous Safety Standards.



# Technical Specifications

## SYSTEM SPECS

Chipset	Intel 945GSE + ICH7M
Video	Integrated in system chipset
Video RAM	8 MB - 128 MB (system RAM)
Type & Processor	Intel ATOM N270
Core Speed	1.6 GHz
Front Side Bus	533 MHz
L2 Cache	512 K
Ethernet Controller	Realtek

## DISPLAY

	ePC1200	ePC1500	ePC1700	ePC1900
Display Diagonal	12.1" (307.34mm)	15.0" (381.0mm)	17.0" (431.8mm)	19.0" (482.6mm)
Display Sizes (Active Area H x V)	9.69" x 7.26" (246.0mm x 184.5mm)	11.97" x 8.98" (304.0mm x 228.1mm)	13.30" x 10.64" (337.8mm x 270.3mm)	14.82" x 11.85" (376.4mm x 301.0mm)
Native Resolution	SVGA, 800 x 600	XGA, 1024 x 768	SXGA, 1280 x 1024	SXGA, 1280 x 1024
Displayable Colors	262K	16M	16M	16M
Brightness, Typical	400 Nit	250 Nit	300 Nit	300 Nit
Contrast Ratio, Typical	500:1	800:1	800:1	1300:1
Horizon/Vertical View Angle, CR>5, Typical	130°/110°	150°/145°	176°/170°	178°/178°
Backlight Life, Typical	50,000 hrs	50,000 hrs	50,000 hrs	50,000 hrs

## TOUCH SCREEN (all models)

Touch Screen Technology	5-wire Analog Resistive
Resolution	4096 x 4096
Positional Accuracy (Maximum Error)	0.18" (0.19" ePC1900) 4.57mm (4.83mm ePC1900)
Positional Accuracy (Standard Deviation of Error)	< 0.08" (< 2.0 mm)
Expected Life	>35,000,000 Activations

## MEMORY

DRAM Type	200-pin DDR2 SO-DIMM, non-ECC, un-buffered
DRAM Bus Speed	533 MHz
DRAM Maximum	Single Module, 2 GB
Solid State Hard Drive	40 GB or 80 GB
Hard Drive Interface	2.5", SATA II
Conventional Hard Drive	160 GB Minimum (optional)

## ELECTRICAL

AC Input Voltage	100-240 VAC, 50/60 Hz
AC Input Current	1.0 A Maximum
DC Input Voltage (optional)	18-36 VDC
DC Input Current (optional)	4.5 A Max
Input Power	ePC1200/1500 - 30 W Typical* ePC1700 - 40 W Typical* ePC1900 - 50 W Typical*

\* Typical Power is measured without any additional I/O or expansion options. Any additional I/O installed during application can increase this value.

## ENVIRONMENTAL

Temp.	Operating 0°C to 50°C	Non-operating -20°C to 60°C
Humidity	20% to 80% RH, noncondensing	
Shock <sup>1</sup>	15g peak acceleration, 11msec	30g peak acceleration, 11msec
Vibration <sup>1</sup>	.006" peak to peak displacement 1.0g maximum acceleration	.015" peak to peak displacement 2.5g maximum acceleration
Altitude <sup>2</sup>	Sea level to 10,000 feet	Sea level to 40,000 feet

<sup>1</sup> Shock & Vibration specifications established with Solid State drives and no rotating media.

<sup>2</sup> Altitude specification is established by using all internal component specifications.

## AGENCY

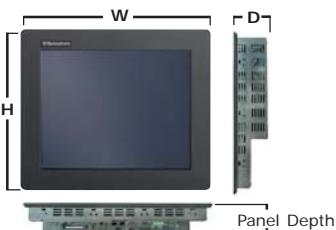
Front Panel NEMA Rating	NEMA 4/4X/12, IP65
FCC	47 CFR, Part 15, Class A
EU CE Marking Compliance	CE, EN 55022: Class A, EN 61000-3-3, EN 61000-6-2, IEC 60950-1, RoHS compliant
Safety Agency Approvals	UL508 Listed, UL 1604 Listed *, cUL Listed CSA C22.2, #142, cUL Listed CSA C22.2, #143 *

\* Class I Division 2, Groups A, B, C, D; Class II, Division 2, Groups F and G; Temp. Code: T4A, when installed on a flat surface of a Type 1, 4, 4X, or 12 enclosure.

## PHYSICAL

	ePC1200	ePC1500	ePC1700	ePC1900
Overall Dimensions (H x W x D)	10.475" x 12.9" x 3.42" (266.1mm x 327.7mm x 86.75mm)	12.80" x 15.80" x 2.95" (325.1mm x 401.3mm x 74.9mm)	14.48" x 17.14" x 3.10" (367.8mm x 442.0mm x 78.7mm)	15.70" x 18.66" x 3.25" (398.8mm x 474.0mm x 82.6mm)
Panel Mounting Depth	3.165" (80.4mm)	2.70" (68.6mm)	2.85" (72.4mm)	3.00" (76.2mm)
Cutout Dimensions (H x W)	9.68" x 12.10" (245.9mm x 307.3mm)	12.00" x 15.00" (305.0mm x 381.0mm)	13.70" x 16.35" (348.0mm x 415.3mm)	14.90" x 17.75" (378.5mm x 450.9mm)
VESA Mount Pattern (M4 Threads)	75x75mm	75x75mm	75x75mm	100x100mm
Weight	10.5 lbs (4.76kg)	15.0 lbs (6.80kg)	19.0 lbs (8.63kg)	22.5 lbs (10.22kg)
Shipping Weight	14.0 lbs (6.35kg)	19.5 lbs (8.84kg)	23.5 lbs (10.67kg)	27.5 lbs (12.49kg)
Option Weight (SS)*	+2.5 lbs (1.13kg)*	+3.5 lbs (1.58kg)*	+3.75 lbs (1.70kg)*	+4.0 lbs (1.81kg)*

\* Additional weight for Stainless Steel option.



## Cutout Dimensions

Model	Width (W)	Height (H)
ePC1200	12.10" (307.3mm)	9.68" (245.9mm)
ePC1500	15.00" (381.0mm)	12.00" (305.0mm)
ePC1700	16.35" (415.3mm)	13.70" (348.0mm)
ePC1900	17.75" (450.9mm)	14.90" (378.5mm)

## Order Number Generation

**Base unit configuration: ePCx00T-N270-1GB-40SS-XP**, where x = 12, 15, 17, or 19 (for display size), includes a touchscreen, Intel ATOM N270, 1 GB DRAM, 40 GB Solid State SATA Drive, and Windows XP Professional.

### ePC - N270

#### Display Size:

1200	12.1" SVGA LCD
1500	15.0" XGA LCD
1700	17.0" SXGA LCD
1900	19.0" SXGA LCD

#### Input Options:

T	Touchscreen
blank	None

#### DRAM Options:

-1GB	1 GB DRAM
-2GB	2 GB DRAM

#### Hard Drive:

-40SS	40 GB Solid State SATA hard drive <sup>1</sup>
-80SS	80 GB Solid State SATA hard drive <sup>1</sup>
-blank	Conventional 160 GB (minimum) SATA hard drive

#### Operating System:

-XP	Windows XP Professional
-W7	Windows Seven Professional (32-bit)
-NOS	No OS installed

#### Power Supply:

blank	120-240 VAC
-DC	24 Volt DC

#### Front Panel:

blank	Powder Coated Aluminum
-NL	Powder Coated Aluminum w/o Logo
-SS	Machined 304 Stainless Steel
-RM	Rackmount Powder Coated Aluminum (ePC1900 only) <sup>2</sup>

<sup>1</sup> Solid State Drive options carry a 5-year (part only) warranty.

<sup>2</sup> Rackmount front panel is not NEMA 4/4x/12 and the unit is required to be installed on a rack in a Type 1 enclosure.



### Contact Information

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# ePC15T "Lite"

## 15.0" Embedded Low-Cost & Fanless TFT Flat Panel Industrial PC



The Nematron ePC15T is a low cost version of the popular ePC-Series. It is intended for applications where low cost is important and some of the traditional ePC-Series features are not required. This "Lite" version is offered at a significantly lower cost than the popular ePC1500T, while still providing the reliability and 2-year warranty of the ePC-Series. The ePC15T comes standard with an Intel N270 fanless CPU board and an Intel solid state drive, eliminating many of the reliability issues associated with industrial PCs. In addition its' compact profile and high performance make this unit ideal for many space limited applications.

**NEW! 15.0"  
LOW-COST  
ePC Version  
Available in  
Q4 2010**

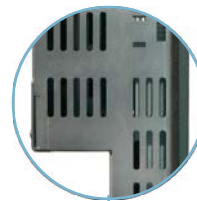
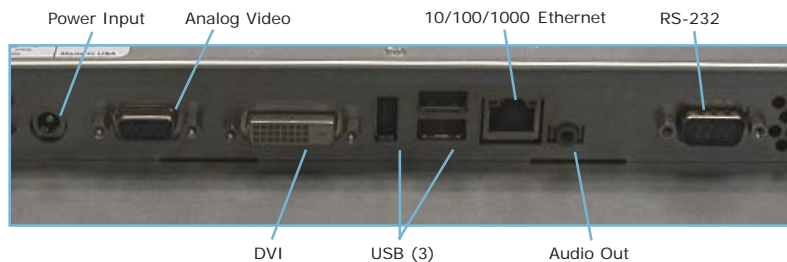


### Standard Features

- Intel Inside
  - CPU board and processor
  - Solid state drive
- 15.0" XGA Color TFT LCD Display, 1024 x 768
- High Performance/ Very Low Power Fanless Processor
  - Intel® ATOM N270 (1.6 GHz, 512 K Cache, 533 MHz bus)
- DRAM up to 2 GB
- Intel 40 GB SATA Solid State Drive (internal)
- 5-wire Analog Resistive Touchscreen
- I/O Connectivity
  - One 10/100/1000 Ethernet port
  - Three USB 2.0 ports
  - One RS-232 serial port
  - Audio out
  - Additional Analog and Digital Video ports (supports dual video modes with integrated LCD)
- NEMA 4/4x/12 powder coated aluminum front panel (optional no logo front panel)
- Optional NEMA1 powder coated rear enclosure (vented, not water or dust proof)
- Ultra-Thin panel mounting depth of 2.4"
- External 100-240 VAC power supply included
  - Regulated 12 VDC, 3.75 A Max output (can also be powered by other Listed ITE power supply or Class 2 power source)
- UL & cUL (pending)
- FCC, CE, & RoHS compliant
- Windows® XP Professional SP3
- 2-year Warranty

# Features & Benefits

## I/O Connectivity



**Ultra-thin, extremely compact design**

- 2.4" Mounting Depth



**5-wire Analog Resistive Touchscreen**

**Made with Pride in the USA**

**UL, cUL 508, CE, & RoHS Approvals**  
(UL/cUL Pending)

**Intel Inside**

- CPU board & processor
- Solid state drive

## Power Input

- 12 VDC input supplied by Listed ITE power supply or Class 2 source

## Powder Coated Aluminum Front Panel

- No logo front panel option



## VESA Mounting

- 75mm



## NEMA Panel Mounting via Clips



## Optional NEMA 1 Powder Coated Rear Enclosure

- Vented, Not Water or Dust Proof
- Shown with optional mounting arm (sold separately)



## High Performance/ Very Low Power Fanless Processor

- Intel® ATOM N270  
(1.6 GHz, 512 K Cache, 533 MHz bus)



## External 100-240 VAC Power Supply

- Regulated 12 VDC, 3.75 A Max output (ships with ePC15T)



## Standard 2-year warranty

- Covers parts and service



Meet all RoHS Hazardous Safety Standards.



# Technical Specifications

## PERFORMANCE

Chipset	Intel 9465GSE + ICH7M
Video	Integrated in system chipset
Video RAM	8 MB - 128 MB (system RAM)
Type/Processor	Intel ATOM N270
Core Speed	1.6 GHz
Front Side Bus	533 MHz
L2 Cache	512 K
Ethernet Controller	Realtek

## DISPLAY

	<b>ePC15T Lite</b> <span style="color: red;">NEW!</span>
Display Diagonal	15.0" (381.0mm)
Display Sizes (Active Area H x V)	11.97" x 8.98" (304.0mm x 228.1mm)
Native Resolution	XGA, 1024 x 768
Displayable Colors	16M
Brightness, Typical	250 Nit
Contrast Ratio, Typical	800:1
Horizon/Vertical View Angle, CR>5, Typical	150°/145°
Backlight Life, Typical	50,000 hrs

## TOUCH SCREEN (all models)

Touch Screen Technology	5-wire Analog Resistive
Resolution	4096 x 4096
Positional Accuracy (Maximum Error)	0.18" 4.57mm
Positional Accuracy (Standard Deviation of Error)	< 0.08" (< 2.0 mm)
Expected Life	>35,000,000 Activations

## ENVIRONMENTAL

	Operating 0°C to 50°C	Non-operating -20°C to 60°C
Temp.		
Humidity	20% to 80% RH, noncondensing	
Shock <sup>3</sup>	15g peak acceleration, 11msec	30g peak acceleration, 11msec
Vibration <sup>3</sup>	.006" peak to peak displacement 1.0g maximum acceleration	.015" peak to peak displacement 2.5g maximum acceleration
Altitude <sup>4</sup>	Sea level to 10,000 feet	Sea level to 40,000 feet

<sup>3</sup> Shock & Vibration specifications established with Solid State drives and no rotating media.

<sup>4</sup> Altitude specification is established by using all internal component specifications.

## PHYSICAL

	<b>ePC15T Lite</b> <span style="color: red;">NEW!</span>
Overall Dimensions (H x W x D)	12.80" x 15.80" x 2.65" (325.1mm x 401.3mm x 74.9mm)
Panel Mounting Depth <sup>5</sup> (D1)	2.4" (60.9mm)
Cutout Dimensions (Height x Width)	12.00" x 15.00" (305.0mm x 381.0mm)
VESA Mount Pattern (M4 Threads)	75x75mm (on rear)
Weight	14.0 lbs (6.35kg)
Shipping Weight	19.0 lbs (8.62kg)

<sup>5</sup> Does not apply to -EN option.

## CUTOUT DIMENSIONS <sup>5</sup>

ePC15T Lite	15.00" (Width) 381.0mm
	12.00" (Height) 305.0mm

## MEMORY & STORAGE

DRAM Type	200-pin DDR2 SO-DIMM, non-ECC, un-buffered
DRAM Bus Speed	533 MHz
DRAM Maximum	2 GB Single Module
Solid State Drive	Intel 40 GB (Internal)
Drive Interface	2.5", SATA II

## ELECTRICAL

DC Input Voltage	12 VDC
DC Input Current	3.75 A Max
AC Power Supply	100-240 VAC, 47-63 Hz <sup>1</sup>
AC Input Current	1.1 A Maximum
Input Power	30 W Typical <sup>2</sup>

<sup>1</sup> Output of included AC power supply. Can also be powered by other Listed ITE power supply or Class 2 Power sources.

<sup>2</sup> Typical Power is measured without any additional I/O or expansion options. Any additional I/O installed during application can increase this value.

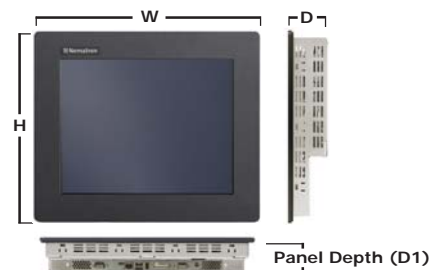
## AGENCY

Front Panel NEMA Rating	NEMA 4/4X/12
FCC	47 CFR, Part 15, Class A
EU CE Marking Compliance	CE, EN 55022: Class A, EN 61000-3-3, EN 61000-6-2, IEC 60950-1, RoHS compliant
Safety Agency	UL508 Listed,
Approvals (pending)	cUL Listed CSA C22.2, #142

## MISCELLANEOUS

Warranty	2 years
Available Option	No logo front panel
Ships With	External Power supply with standard US IEC Power Cord, Mounting Hardware, Drivers, & Manual

## DIMENSIONS



W	15.8" (401.3mm)
H	12.8" (325.1mm)
D	2.65" (74.9mm)
D1 <sup>5</sup>	2.4" (60.9mm)

## Order Number Generation

**Base unit configuration: ePC15T-N270-1GB-40SS-XP**, includes a touchscreen, Intel ATOM N270, 1 GB DRAM, 40 GB Solid State SATA Drive, Windows XP Professional, and External AC Power Supply.

**ePC15T-N270- \_\_\_\_\_ -40SS-XP- \_\_\_\_\_**

**DRAM Option:** \_\_\_\_\_

- 1GB**      1 GB DRAM
- 2GB**      2 GB DRAM

**Front Panel:** \_\_\_\_\_

- blank**      Powder Coated Aluminum
- NL**      Powder Coated Aluminum w/o Logo

**Enclosure:** <sup>1</sup> \_\_\_\_\_

- blank**      Panel Mount front panel w/o rear enclosure
- EN**      Vented rear enclosure for stand-alone VESA mounting

<sup>1</sup> NEMA 1 only, not recommended for environments with high levels of moisture and/or particulate matter.

**Product Availability** - The base unit configuration (ePC15T-N270-1GB-40SS-XP) units are stocked and available for immediate shipments. The other configurable options are built to order and may incur longer lead times. Check with factory for availability and lead time.



### Contact Information

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 Email: sales@nematron.net

# ePC-Plus Series

Embedded High Performance Ultra-Thin 15" to 19" TFT Industrial PCs with PCI/Serial Expansion and Easily Removable Storage Media



## Making A Great Series Even Better...

The Nematron ePC-Plus Series further enhances the ultra-thin, yet powerful, ePC-Series by now providing exciting features including PCI expansion (two 3/4-length cards), two easily removable hard drives and a hot swappable, easily removable DVD-R/W drive. All this is accomplished in a mere 1.0" deeper unit than the successful ePC-Series.

The ePC-Plus offers unparalleled value and superb quality at a competitive price while eliminating the "big, bulky, and expensive" stereotype usually associated with Industrial PCs. All ePC-Plus models are available with 5-wire Analog Resistive touchscreens and NEMA sealed panel mount front panels. Their compact size and thin panel mounted depth of 4.0" (101.6mm) make them ideal for installation in most industrial applications.



## Display Sizes Available...



There are currently three sizes in ePC-Plus series - 15", 17", and 19", with more additions to follow.

## Standard Features Available...



Two Easily Removable Hard Drive Bays



Hot-swappable, Easily Removable DVD-R/W drive



PCI Expansion:  
Two 3/4 Card Slots



## Standard Features

- 15" XGA to 19" SXGA Color TFT LCD Display
- Optional 5-wire Analog Resistive Touchscreen
- Ultra-Thin 4.0" panel mounting depth
- High Performance / Low Power Processor options
  - Intel® Mobile Celeron® 550 (2.0 GHz, 1 M cache, 533 MHz bus)
  - Intel® Core Duo™ T7500 (2.2 GHz, 4 M cache, 800 MHz bus)
- 160 GB easily removable SATA hard drives
  - Solid State options available
  - Second hard drive options
- Optional easily removable SATA DVD-R/W drive
- DRAM up to 4 GB
- Extensive I/O Connectivity
  - Dual Gigabit (10/100/1000) Ethernet ports
  - 4 USB 2.0 ports
  - 1 RS-485/422/232 serial port (jumper selectable)
  - 2 RS-232 serial ports
  - PS/2 mouse & keyboard ports
  - Additional video port (supports dual video)
- PCI expansion (8.75" max length)
- Integrated 100-240 VAC power supply (24 VDC optional)
- Powder Coated Aluminum Front Panel (optional Stainless Steel)
- NEMA 4/4x/12 front panel
- 2-year Warranty
- UL 508 and UL 1604 listed for Hazardous Locations: Class I, Division 2, Groups A, B, C, D and Class II, Division 2, Groups F and G when mounted in a NEMA enclosure
- FCC & European CE compliant
- RoHS compliant
- Windows® XP Professional (Windows 7 Professional optional)

# Features & Benefits



## High Performance / Low Power Processor Options

- Intel® Mobile Celeron® 550 (2.0 GHz, 1 M cache, 533 MHz bus)
- Intel® Core Duo™ T7500 (2.2 GHz, 4 M cache, 800 MHz bus)



## VESA Mounting M4 Threads

- All models: 100mm



## Powder Coated Aluminum or Stainless Steel Front Panels



## Optional 5-wire Analog Resistive Touchscreen



## Two PCI-card expansion slots now available

Made with Pride in the USA

UL, cUL 508, Class I, Div 2, CE, & RoHS Approvals

Integrated 100-240 VAC or 24 VDC Power Supply



Thin panel mounted depth of 4.0" (101.6mm)

(4.125" - ePC1950)



NEMA Panel Mounting via Clips



Two Easily Removable SATA Hard Drives  
- Solid State options

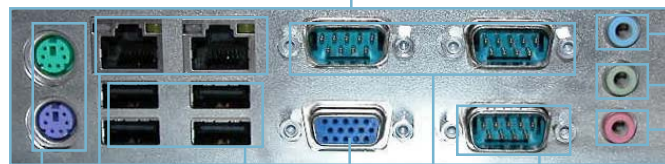


USB, Ethernet, & PS/2 Hold Down



Hot-Swappable, Easily Removable DVD-R/W Drive

## Extensive I/O Connectivity



Video & Keyboard Ports

Dual Gigabit Ethernet Ports

Four USB 2.0 Ports

Add'l Video Port

Two RS-232 Ports

RS-485/422 Port

Line In  
Audio Out  
Microphone



Meet all RoHS Hazardous Safety Standards.

# Technical Specifications

## SYSTEM SPECS

Chipset	Intel 965GME + ICH8M	
Video	Integrated in system chipset	
Video RAM	Up to 384MB (System RAM)	
Type & Processor	Intel Mobile Celeron 550	Intel Core Duo T7500
Core Speed	2.0 MHz	2.2 GHz
Front Side Bus	533 MHz	800 MHz
L2 Cache	1MB	4MB
Ethernet Controller	Intel	

## DISPLAY

	ePC1550	ePC1750	ePC1950
Display Diagonal	15.0" (381.0mm)	17.0" (431.8mm)	19.0" (482.6mm)
Display Sizes (Active Area H x V)	11.97" x 8.98" (304.0mm x 228.1mm)	13.30" x 10.64" (337.8mm x 270.3mm)	14.82" x 11.85" (376.4mm x 301.0mm)
Native Resolution	XGA, 1024 x 768	SXGA, 1280 x 1024	SXGA, 1280 x 1024
Displayable Colors	16M	16M	16M
Brightness, Typical	250 Nit	300 Nit	300 Nit
Contrast Ratio, Typical	800:1	800:1	1300:1
Horizon/Vertical View Angle, CR>5, Typical	150°/145°	176°/170°	178°/178°
Backlight Life, Typical	50,000 hrs	50,000 hrs	50,000 hrs

## TOUCH SCREEN (all models)

Touch Screen Technology	5-wire Analog Resistive
Resolution	4096 x 4096
Positional Accuracy (Maximum Error)	0.18" (0.19" ePC1950) 4.57mm (4.83mm ePC1950)
Positional Accuracy (Standard Deviation of Error)	< 0.08" (< 2.0 mm)
Expected Life	>35,000,000 Activations

## MEMORY

DRAM Type	200-pin DDR2 SO-DIMM, non-ECC, un-buffered
DRAM Bus Speed	667 MHz
DRAM Maximum	Two Modules (4 GB max)
Hard Drive Type	2.5", SATA II
Hard Drive Size	160 GB Minimum
Solid State Hard Drive	40 GB or 80 GB (optional)

## ELECTRICAL

AC Input Voltage	100-240 VAC, 47-63 Hz
AC Input Current	2.0 A Maximum
DC Input Voltage (optional)	18-36 VDC
DC Input Current (optional)	7.5 A Maximum
Input Power	ePC1550 - 70 W Typical* ePC1750 - 80 W Typical* ePC1950 - 90 W Typical*

\* Typical Power is measured without any additional I/O or expansion options. Any additional I/O installed during application can increase this value.

## ENVIRONMENTAL

	Operating 0°C to 50°C	Non-operating -20°C to 60°C
Temp.	20% to 80% RH, noncondensing	
Humidity	15g peak acceleration, 11msec	
Shock <sup>1</sup>	30g peak acceleration, 11msec	
Vibration <sup>1</sup>	.006" peak to peak displacement 1.0g maximum acceleration	.015" peak to peak displacement 2.5g maximum acceleration
Altitude <sup>2</sup>	Sea level to 10,000 feet	Sea level to 40,000 feet

<sup>1</sup> Shock & Vibration specifications established with Solid State drives and no rotating media.

<sup>2</sup> Altitude specification is established by using all internal component specifications.

## PHYSICAL

	ePC1550	ePC1750	ePC1950
Overall Dimensions (H x W x D)	12.80" x 15.80" x 4.25" (325.1mm x 401.3mm x 108.0mm)	14.48" x 17.14" x 4.25" (367.8mm x 442.0mm x 108.0mm)	15.70" x 18.66" x 4.375" (398.8mm x 474.0mm x 111.1mm)
Panel Mounting Depth	4.0" (101.6mm)	4.0" (101.6mm)	4.125" (104.8mm)
Cutout Dimensions (H x W)	12.00" x 15.00" (305.0mm x 381.0mm)	13.70" x 16.35" (348.0mm x 415.3mm)	14.90" x 17.75" (378.5mm x 450.9mm)
VESA Mount Pattern	100mm	100mm	100mm
Weight	20.0 lbs (9.07kg)	24.0 lbs (10.88kg)	28.0 lbs (12.70kg)
Shipping Weight	25.0 lbs (11.33kg)	29.0 lbs (13.15kg)	33.0 lbs (14.96kg)
Option Weight (SS)*	+3.5 lbs (1.58kg)*	+3.75 lbs (1.70kg)*	+4.0 lbs (1.81kg)*

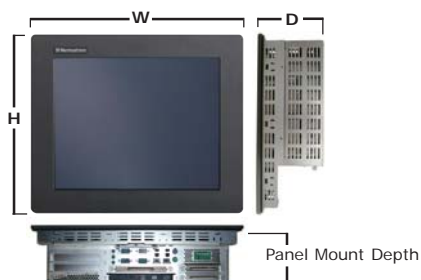
\* Additional weight for Stainless Steel option.

## AGENCY

Front Panel NEMA Rating	NEMA 4/4X/12, IP65
FCC	47 CFR, Part 15, Class A
EU CE Marking Compliance	CE, EN 55022: Class A, EN 61000-3-3, EN 61000-6-2, IEC 60950-1, RoHS compliant
Safety Agency Approvals	UL508 Listed, UL 1604 Listed *, cUL Listed CSA C22.2, #142, cUL Listed CSA C22.2, #143 *

\* Class I Division 2, Groups A, B, C, D; Class II, Division 2, Groups F and G; Temp. Code: T4A, when installed on a flat surface of a Type 1, 4, 4X, or 12 enclosure.

## Cutout Dimensions



Model	Width (W)	Height (H)
ePC1550	15.00" (381.0mm)	12.00" (305.0mm)
ePC1750	16.35" (415.3mm)	13.70" (348.0mm)
ePC1950	17.75" (450.9mm)	14.90" (378.5mm)

## Order Number Generation

**Base unit configuration: ePCx50T-MC550-1GB-HD-DVD-XP**, where **x** = 15, 17, or 19 (for display size), with touchscreen, Mobile Celeron 550, 1 GB DRAM, 160 GB (min) SATA Hard Drive, SATA DVD-R/W drive and Windows XP Professional.

**ePC** -

**Display Size:**

<b>1550</b>	15.0" XGA LCD
<b>1750</b>	17.0" SXGA LCD
<b>1950</b>	19.0" SXGA LCD

**Input Options:**

<b>T</b>	Touchscreen
<b>blank</b>	None

**Processor Options:**

<b>MC550</b>	Mobile Celeron 550
<b>T7500</b>	Core 2 Duo T7500

**DRAM Options:**

<b>-1GB</b>	1 GB DRAM
<b>-2GB</b>	2 GB DRAM
<b>-4GB</b>	4 GB DRAM

**Hard Drive 1:**

<b>-HD</b>	160 GB (minimum) SATA hard drive
<b>-40SS</b>	40 GB Solid State SATA hard drive <sup>1</sup>
<b>-80SS</b>	80 GB Solid State SATA hard drive <sup>1</sup>

**Hard Drive 2:**

<b>blank</b>	No second Hard Drive installed (cover plate only)
<b>-HD</b>	80 GB (minimum) SATA hard drive
<b>-40SS</b>	40 GB Solid State SATA hard drive <sup>1</sup>
<b>-80SS</b>	80 GB Solid State SATA hard drive <sup>1</sup>

**Optical Drive:**

<b>-DVD</b>	SATA DVD-R/W drive installed
<b>blank</b>	No optical drive installed (cover plate only)

**Operating System:**

<b>-XP</b>	Windows XP Professional
<b>-W7</b>	Windows 7 Professional (32-bit)
<b>-NOS</b>	No OS installed

**Power Supply Options:**

<b>blank</b>	100-240 VAC
<b>-DC</b>	24 Volt DC

**Front Panel:**

<b>blank</b>	Powder Coated Aluminum
<b>-NL</b>	Powder Coated Aluminum w/o Logo
<b>-SS</b>	Machined 304 Stainless Steel
<b>-RM</b>	Rackmount Powder Coated Aluminum (ePC1950 only) <sup>2</sup>

<sup>1</sup> Solid State Drive options carry a 5-year (part only) warranty.

<sup>2</sup> Rackmount front panel is not NEMA 4/4x/12 and the unit is required to be installed on a rack in a Type 1 enclosure.



### Contact Information

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# nPC Series

## Rugged High Performance "Node" Industrial PCs Without Displays



nPC100



nPC200

The Nematron nPC Series of high performance industrial computers are designed for applications where the computer must be separate or remote from the monitor. With extensive I/O and available PCI expansion, the nPC100 and nPC200 models are ideal for most industrial applications. Their compact profiles and high performance make these units ideal for many space limited applications.

### nPC100 Standard Features

- 3 High Performance/Low Power Processor Options to choose from:
  - Intel ATOM N270 Fanless (1.66 GHz, 512K cache, 533 MHz bus)
  - Intel Celeron M 440 (1.86 GHz, 1 M cache, 533 MHz bus)
  - Intel Core Duo T2500 (2.0 GHz, 2 M cache, 667 MHz bus)
- DRAM up to 2 GB
- On board Video with Analog VGA port
- Extensive Connectivity
  - Dual Gigabit (10/100/1000) Ethernet ports
  - One RS-422/485 serial port (jumper selectable)
  - Two RS-232 serial ports
  - 4 USB 2.0 ports
  - PS/2 port (mouse & keyboard splitter supplied)
  - Rear Accessible Type I/II CompactFlash socket
- 160 GB Easily Removable SATA hard drive (optional Solid State drives)
- Integrated 100-240 AC Power Supply (optional 24 VDC)
- UL, cUL, RoHS & CE
- Class I & II Division 2 Approved when installed in a NEMA enclosure
- Windows XP Professional pre-installed (Windows 7 Professional optional)
- 2-year Warranty

### nPC200 Standard Features

- Rugged industrial "Node" PC with PCI expansion
- 2 High Performance/Low Power Processor Options to choose from:
  - Intel Mobile Celeron 550 (2.0 GHz, 1 M cache, 533 MHz bus)
  - Intel Core 2 Duo T7500 (2.2 GHz, 4 M cache, 800 MHz bus)
- DRAM up to 4 GB
- 2 PCI expansion slots (8.75" max length)
- On board Video with Analog VGA port
- Extensive Connectivity
  - Dual Gigabit (10/100/1000) Ethernet ports
  - One RS-422/485 serial port (jumper selectable)
  - Two RS-232 serial ports
  - 4 USB 2.0 ports
  - PS/2 mouse & keyboard ports
- Up to 2 Easily Removable 160 GB SATA hard drive (optional Solid State drives)
- Easily Removable SATA DVD-R/W drive
- Integrated 100-240 AC Power Supply (optional 24 VDC)
- UL, cUL, RoHS & CE
- Class I & II Division 2 Approved when installed in a NEMA enclosure
- Windows XP Professional pre-installed (Windows 7 Professional optional)
- 2-year Warranty

# nPC100 - Features & Benefits



**nPC100**



## High Performance/ Very Low Power Fanless Processor

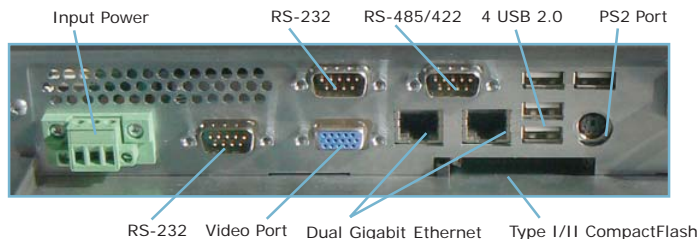
- Intel® ATOM N270 (1.6 GHz, 512 K Cache, 533 MHz bus)



## Easily Removable SATA Hard Drive

- Solid State options

## Extensive I/O Connectivity



## CompactFlash to replace CD-ROM and floppy drives



## USB Retention Bracket



## High Performance / Low Power Processor Options

- Intel® Celeron® M 440 (1.86 GHz, 1 M cache, 533 MHz bus)
- Intel® Core Duo™ T2500 (2.0 GHz, 2 M cache, 667 MHz bus)

# nPC200 - Features & Benefits



**nPC200**



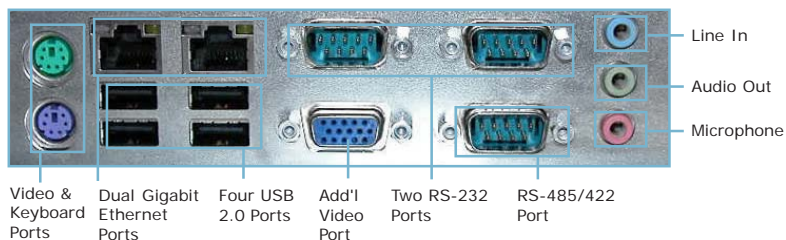
## High Performance / Low Power Processor Options

- Intel® Mobile Celeron® 550 (2.0 GHz, 1 M cache, 533 MHz bus)
- Intel® Core 2 Duo™ T7500 (2.2 GHz, 4 M cache, 800 MHz bus)



## PCI Expansion: Two Card Slots 8.75" max length

## Extensive I/O Connectivity



## USB Retention Bracket



## Two Easily Removable Hard Drive Bays



## Hot-swappable, Easily Removable DVD-RW drive

# Technical Specifications

## SYSTEM SPECS

	nPC100			nPC200	
<b>Video</b>	Integrated in system chipset			Integrated in system chipset	
<b>Video RAM</b>	8 MB - 128 MB (system RAM)			Up to 384MB (System RAM)	
<b>Processor Option</b>	N270	CM440	T2500	MC550	T7500
<b>Intel Type</b>	ATOM N270	Celeron M 440	Core Duo T2500	Mobile Celeron 550	Core 2 Duo T7500
<b>Core Speed</b>	1.6 GHz	1.86 GHz	2.0 GHz	2.0 GHz	2.2 GHz
<b>Front Side Bus</b>	533 MHz	533 MHz	667 MHz	533 MHz	800 MHz
<b>L2 Cache</b>	512K	1MB	2MB	1MB	4MB
<b>Chipset</b>	Intel 945GSE+ICH7M	Intel 945GME+ICH7M	Intel 945GME+ICH7M	Intel 965GME+ICH8M	Intel 965GME+ICH8M
<b>Ethernet Controller</b>	Realtek	Broadcom	Broadcom	Intel	Intel

## MEMORY

<b>DRAM Type</b>	200-pin DDR2 SO-DIMM, non-ECC, un-buffered			200-pin DDR2 SO-DIMM, non-ECC, un-buffered	
<b>DRAM Bus Speed</b>	667 MHz (CM440 - 533 MHz)			667 MHz	
<b>DRAM Maximum</b>	Single Module, 2 GB			Two Modules (4 GB max)	
<b>Hard Drive Type</b>	2.5", SATA II			2.5", SATA II	
<b>Hard Drive Size</b>	160 GB Minimum			160 GB Minimum	
<b>Solid State Hard Drive</b>	40 GB or 80 GB (optional)			40 GB or 80 GB (optional)	

## ELECTRICAL

<b>Input Power</b>	w/ N270: 20 Watts Typical	w/ CM440: 40 Watts Typical	w/ T2500: 40 Watts Typical	w/ MC550: 60 Watts Typical	w/ T7500: 60 Watts Typical
<b>AC Input Voltage</b>	100-240 VAC, 50/60 Hz			100-240 VAC, 50/60 Hz	
<b>AC Input Current</b>	1.0A Max			2.0A Max	
<b>DC Input Voltage (optional)</b>	18-36 VDC, 4.5A Max			18-36 VDC, 7.5A Max	

\* Typical Power is measured without any additional I/O or expansion options. Any additional I/O installed during application can increase this value.

## ENVIRONMENTAL

	Operating	Non-operating
<b>Temp.</b>	0°C to 50°C	-20°C to 60°C
<b>Humidity</b>	20% to 80% RH, noncondensing	
<b>Shock</b> <sup>1</sup>	15g peak acceleration, 11msec	30g peak acceleration, 11msec
<b>Vibration</b> <sup>1</sup>	.006" peak to peak displacement (5-2000 Hz) 1.0g maximum acceleration	.015" peak to peak displacement 2.5g maximum acceleration
<b>Altitude</b> <sup>2</sup>	Sea level to 10,000 feet	Sea level to 40,000 feet

<sup>1</sup> Shock & Vibration specifications established with Solid State drives and no rotating media.

<sup>2</sup> Altitude specification is established by using all internal component specifications.

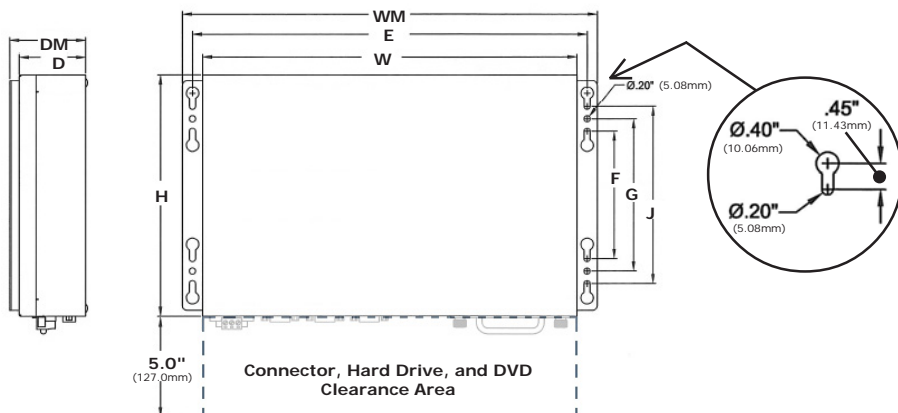
## AGENCY

<b>FCC</b>	47 CFR, Part 15, Class A
<b>EU CE Marking Compliance</b>	CE, EN 55022: Class A, EN 61000-3-3, EN 61000-6-2, IEC 60950-1, RoHS compliant
<b>Safety Agency Approvals</b>	UL508 Listed, UL 1604 Listed *, cUL Listed CSA C22.2, #142, cUL Listed CSA C22.2, #143 *

\* Class I Division 2, Groups A, B, C, D; Class II, Division 2, Groups F and G; Temp. Code: T4A, when installed on a flat surface of a Type 1, 4, 4X, or 12 enclosure.

## PHYSICAL

<b>Overall Dimensions</b> (H x W x D)	7.750" x 12.00" x 2.15" (196.8mm x 304.8mm x 54.61mm)	9.00" x 15.00" x 3.34" (228.6mm x 381.0mm x 84.8mm)
<b>Overall Dimensions</b> (with mounting brackets) (H x WM x DM)	7.750" x 13.30" x 2.45" (196.8mm x 337.82mm x 62.23mm)	9.00" x 16.30" x 3.65" (228.6mm x 414.0mm x 92.71mm)
<b>Weight</b>	6.5 lbs (2.9 kg)	12.0 lbs (5.4 kg)
<b>Shipping Weight</b>	8.0 lbs (3.6 kg)	14.0 lbs (6.4kg)



## MOUNTING BRACKET DIMENSIONS

	nPC100	nPC200
<b>E</b>	12.65" (321.31mm)	15.65" (397.51mm)
<b>F</b>	4.075" (103.5mm)	5.20" (132.08mm)
<b>G</b>	4.875" (123.82mm)	6.00" (152.39mm)
<b>J</b>	5.675" (144.14mm)	6.80" (172.72mm)

## Order Number Generation

Base unit configuration: nPC100-CM440-1GB-XP, Celeron M 440, 1 GB DRAM, 160 GB SATA Hard Drive, and Windows XP Professional.

### nPC100-

<b>Processor Option:</b>	_____
CM440	Celeron M 440
N270	ATOM N270 (fanless)
T2500	Core Duo T2500
<b>DRAM Options:</b>	_____
-1GB	1 GB DRAM
-2GB	2 GB DRAM
<b>Hard Drive:</b>	_____
blank	160 GB (minimum) SATA hard drive
-40SS	40 GB Solid State SATA hard drive <sup>1</sup>
-80SS	80 GB Solid State SATA hard drive <sup>1</sup>
<b>Operating System:</b>	_____
-XP	Windows XP Professional
-W7	Windows 7 Professional (32-bit)
-NOS	No OS installed
<b>Power Supply Option:</b>	_____
blank	120-240 VAC
-DC	24 Volt DC



<sup>1</sup> Solid State Drive options carry a 5-year (part only) warranty.

Base unit configuration: nPC200-MC550-1GB-HD-DVD-XP, Mobile Celeron 550, 1 GB DRAM, 160 GB (min) SATA DVD-RW, and Windows XP Professional.

### nPC200-

<b>Processor Option:</b>	_____
MC550	Intel Mobile Celeron 550
T7500	Intel Core 2 Duo T7500
<b>DRAM Options:</b>	_____
-1GB	1 GB DRAM
-2GB	2 GB DRAM
-4GB	4 GB DRAM
<b>Hard Drive 1:</b>	_____
-HD	160 GB (minimum) SATA hard drive
-40SS	40 GB Solid State SATA hard drive <sup>1</sup>
-80SS	80 GB Solid State SATA hard drive <sup>1</sup>
<b>Hard Drive 2:</b>	_____
blank	No Second Hard Drive installed (Cover plate only)
-HD	160 GB (minimum) SATA hard drive
-40SS	40 GB Solid State SATA hard drive <sup>1</sup>
-80SS	80 GB Solid State SATA hard drive <sup>1</sup>
<b>Optical Drive:</b>	_____
-DVD	SATA DVD-R/W Drive installed
blank	None installed (easily removable cover only)
<b>Operating System:</b>	_____
-XP	Windows XP Professional
-W7	Windows 7 Professional (32-bit)
-NOS	No OS installed
<b>Power Supply Option:</b>	_____
blank	120-240 VAC
-DC	24 Volt DC

<sup>1</sup> Solid State Drive options carry a 5-year (part only) warranty.



### Contact Information

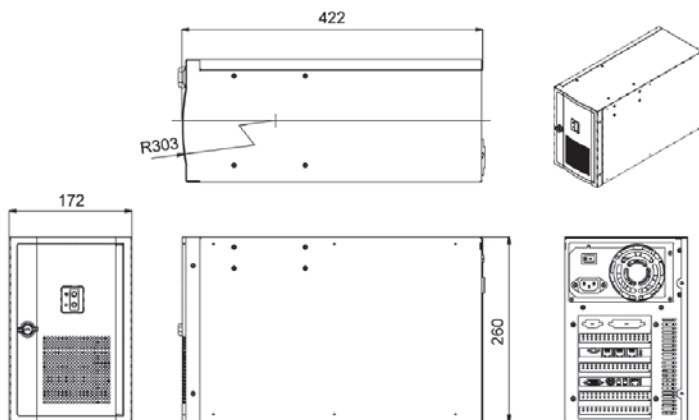
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# SB600

## 6-Slot High Performance Industrial PC without Display

The Nematron SB600 is a high performance Core 2 Duo Industrial Computer without integrated display. Its' compact profile and high performance make this unit ideal for many space limited applications.



Horizontal or Vertical Mounting Options

### Standard Features:

- Intel Core 2 Duo E8400
  - 3.0 GHz, 1333 MHz bus, 6 MB CACHE
- Compact size with stylish lockable front door
- Mounting brackets for Horizontal or Vertical mounting to a shelf or panel
- DRAM up to 4 GB
- Up to two internal 250 GB SATA hard drives
  - Optional 40 GB Solid State SATA hard drives
- Extensive Connectivity
  - Dual 10/100/1000 Ethernet ports
  - 4 USB 2.0 ports (2 on rear, 2 behind front door)
  - 2 RS-232 serial ports (one selectable 485/422/232)
  - Parallel port
  - PS/2 port (KB/Mouse splitter cable included)
- Available Expansion
  - Two PCI
 or
  - One PCI and one ISA (full-length)
- Additional Connectivity (ships with unit but utilizes open expansion slots)
  - Audio (in/out)
  - DVI monitor connection
  - 2 USB 2.0 ports
- DVD-R/W drive (behind lockable front door)
- 400 Watt Power Supply
- UL, cUL, CE, & RoHS (pending)
- Windows XP Professional (Windows 7 & Vista Business optional)

## Specifications:

**AC Input** 100-240 VAC, 47-63 Hz, 8.0A Max  
**Input Power** 400 W

**Operating Temperature** 0°C to 50°C  
**Operating Humidity** 20% to 80% RH, noncondensing

**Operating Shock** 15g peak acceleration  
 11 msecond

**Operating Vibration** 0.006" peak to peak,  
 1g max 5-2000 Hz

**Operating Altitude** Sea level to 10,000 feet

**Warranty** 2 years

**Ships With** Power Cord, Mounting Hardware  
 KB/Mouse Splitter Cable, Mounting Brackets, Drivers,  
 & Manual.

Also ships with customer installable Audio, USB and  
 DVI connections (displaces open available expansion  
 slots)

**Options** DRAM, Solid State Hard Drives,  
 Operating System

## Order Number Generation:

### SB600 – E8400 - DVD

<b>Processor Option</b>		
-E8400	Intel Core 2 Duo E8400 (3 GHZ, 1333 MHz bus, 6 MB CACHE)	
<b>DRAM Option</b>		
-1GB	1 GB DRAM	
-2GB	2 GB DRAM	
-4GB	4 GB DRAM	
<b>First Internal Hard Drive</b>		
-HD	250 GB (minimum) SATA hard drive	
-40SS	40 GB Solid State SATA hard drive	
<b>Second Internal Hard Drive <sup>1</sup></b>		
blank	None installed	
-HD	250 GB (minimum) SATA hard drive	
-40SS	40 GB Solid State SATA hard drive	
<b>Removable Media</b>		
-DVD	DVD-R/W SATA Drive installed	
<b>Operating System</b>		
-XP	Windows XP Professional (must choose a Hard Drive option)	
-W7	Windows 7 (must choose a Hard Drive option)	
-VS	Windows Vista Business (must choose a Hard Drive option)	
-NOS	No OS installed	



<sup>1</sup> Second Internal hard drive cannot be installed if First Internal Hard Drive is not installed

### Contact Information

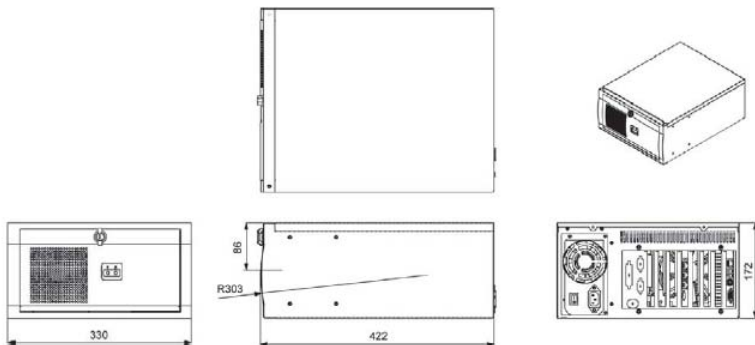
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# SB800

## 8-Slot High Performance Industrial PC without Display

The Nematron SB800 is a high performance Core 2 Duo Industrial Computer without integrated display. Its' compact profile and high performance make this unit ideal for many space limited applications.



Horizontal or Vertical Mounting Options

### Standard Features:

- Intel Core 2 Duo E8400
  - 3.0 GHz, 1333 MHz bus, 6 MB CACHE
- Compact size with stylish lockable front door
- Mounting brackets for Horizontal or Vertical mounting to a shelf or panel
- DRAM up to 4 GB
- Up to two internal 250 GB SATA hard drives
  - Optional 40 GB Solid State SATA hard drives
- Optional front access Removable hard drive
- Extensive Connectivity
  - Dual 10/100/1000 Ethernet ports
  - 4 USB 2.0 ports (2 on rear, 2 behind front door)
  - 2 RS-232 serial ports (one selectable 485/422/232)
  - Parallel port
  - PS/2 port (KB/Mouse splitter cable included)
- 8-slot passive backplane with choice of 4 available expansion slots
  - Two ½-length PCI
  - One full-length PCI
  - Three ISA (full-length)
- Additional Connectivity (ships with unit but utilizes open expansion slots)
  - Audio (in/out)
  - DVI monitor connection
  - 2 USB 2.0 ports
- DVD-R/W drive (behind lockable front door)
- 400 Watt Power Supply
- UL, cUL, CE, & RoHS (pending)
- Windows XP Professional (Windows 7 & Vista Business optional)

## Specifications:

**AC Input** 100-240 VAC, 47-63 Hz, 8.0A Max  
**Input Power** 400 W

**Operating Temperature** 0°C to 50°C  
**Operating Humidity** 20% to 80% RH, noncondensing

**Operating Shock** 15g peak acceleration  
 11 msecond

**Operating Vibration** 0.006" peak to peak,  
 1g max 5-2000 Hz

**Operating Altitude** Sea level to 10,000 feet

**Warranty** 2 years

**Ships With** Power Cord, Mounting Hardware  
 KB/Mouse Splitter Cable, Mounting Brackets, Drivers,  
 & Manual.

Also ships with customer installable Audio, USB and  
 DVI connections (displaces open available expansion  
 slots)

**Options** DRAM, Solid State Hard Drive,  
 Removable Hard Drive,  
 Operating System

## Order Number Generation:

### SB800 – E8400 - DVD

<b>Processor Option</b> -E8400	Intel Core 2 Duo E8400 (3 GHZ, 1333 MHz bus, 6 MB CACHE)
<b>DRAM Option</b> -1GB -2GB -4GB	1 GB DRAM 2 GB DRAM 4 GB DRAM
<b>First Internal Hard Drive</b> -HD -40SS blank	250 GB (minimum) SATA hard drive 40 GB Solid State SATA hard drive none installed <sup>1</sup>
<b>Second Internal Hard Drive <sup>2</sup></b> blank -HD -40SS	None installed 250 GB (minimum) SATA hard drive 40 GB Solid State SATA hard drive
<b>Removable Media</b> -DVD	DVD-R/W SATA Drive installed
<b>Second Front Access Bay</b> Blank -RHD	Nothing installed Removable 250 GB (min) SATA hard drive and carrier
<b>Operating System</b> -XP -W7 -VS -NOS	Windows XP Professional (must choose a Hard Drive option) Windows 7 (must choose a Hard Drive option) Windows Vista Business (must choose a Hard Drive option) No OS installed



- 1 When ordering the no internal drive hard drive option a removable hard drive option must be ordered
- 2 Second Internal hard drive cannot be installed if First Internal Hard Drive is not installed

## Contact Information

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For more information or to request a quote, visit us online at [www.nematron.com](http://www.nematron.com)

# RM1400

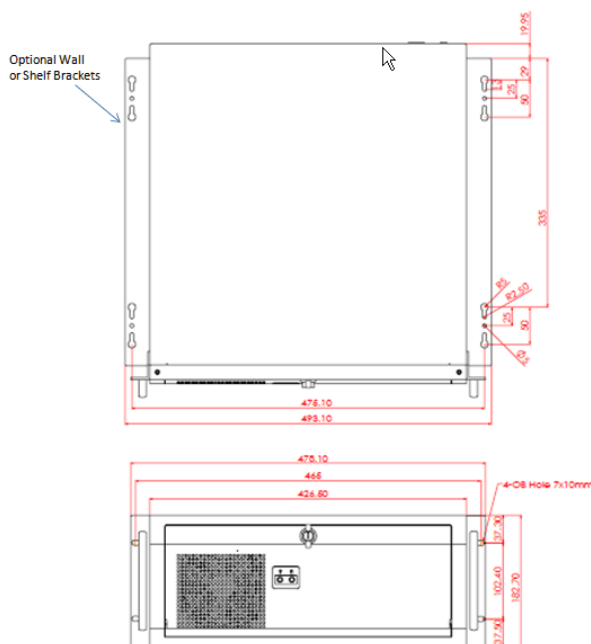
## 14-Slot High Performance 4U Rack Mount Industrial PC

The Nematron RM1400 is a high performance Core 2 Duo 4U Rack Mount Industrial Computer without integrated display. Its' high performance and standard rack mount form factor make this unit ideal for many industrial test stands and server applications.



### Front Accessible Features & Options:

- Lockable Stylish Front Door
- Power Switch w/ Protective Cover
- Power and HDD LEDS
- Recessed Reset Switch
- Two USB 2.0 ports
- DVD-R/W
- Up to Two Removable hard Drives
- Floppy Drive



### Standard Features:

- Intel Core 2 Duo E8400
  - 3.0 GHz, 1333 MHz bus, 6 MB CACHE
- 4U 19" rack mount size with stylish lockable front door (optional wall mount brackets)
- DRAM up to 4 GB
- Internal 250 GB SATA hard drive
  - Optional 40 GB Solid State SATA hard drive
- Optional front access Removable hard drives
- Optional floppy drive
- Extensive Connectivity
  - Dual 10/100/1000 Ethernet ports
  - 4 USB 2.0 ports (2 on rear, 2 behind front door)
  - 2 RS-232 serial ports (one selectable 485/422/232)
  - Parallel port
  - PS/2 port (KB/Mouse splitter cable included)
- 14-slot passive backplane with choice of 10 available expansion slots (may require repositioning of I/O brackets)
  - Three ½-length PCI
  - Two ¾-length PCI
  - Two full-length PCI
  - Three ISA (full-length)
- Additional Connectivity (ships with unit but utilizes open expansion slots)
  - Audio (in/out)
  - DVI monitor connection
  - 2 USB 2.0 ports
- DVD-R/W drive (behind lockable front door)
- 400 Watt Power Supply
- UL, cUL, CE, & RoHS (pending)
- Windows XP Professional (Windows 7 & Vista Business optional)

## Specifications:

**AC Input** 100-240 VAC, 47-63 Hz, 8.0A Max  
**Input Power** 400 W

**Operating Temperature** 0°C to 50°C  
**Operating Humidity** 20% to 80% RH, noncondensing  
**Operating Shock** 15g peak acceleration  
 11 msecond

**Operating Vibration** 0.006" peak to peak,  
 1g max 5-2000 Hz

**Operating Altitude** Sea level to 10,000 feet

**Warranty** 2 years

**Ships With** Power Cord, Mounting Hardware  
 KB/Mouse Splitter Cable, Drivers, & Manual.  
 Also ships with customer installable Audio, USB and  
 DVI connections (displaces open available expansion  
 slots)

**Options** DRAM, Solid State Hard Drive, Floppy  
 Drive, Removable Hard Drives,  
 Operating System

## Order Number Generation:

### RM1400 – E8400 - DVD

Processor Option	Intel Core 2 Duo E8400 (3 GHZ, 1333 MHz bus, 6 MB CACHE)
DRAM Option	1 GB DRAM 2 GB DRAM 4 GB DRAM
Internal Hard Drive	250 GB (minimum) SATA hard drive 40 GB Solid State SATA hard drive none installed <sup>1</sup>
Floppy Drive	None installed 1.44 MB Floppy installed
Removable Media ( Drive Bay 1)	DVD-R/W SATA Drive installed
Second Front Access Bay (Drive Bay 2)	Nothing installed Removable 250 GB (min) SATA hard drive and carrier
Third Front Access Bay (Drive Bay 3)	Nothing installed Removable 250 GB (min) SATA hard drive and carrier
Operating System	Windows XP Professional (must choose a Hard Drive option) Windows 7 Professional Windows Vista Business (must choose a Hard Drive option) No OS installed



- 1 When ordering the no internal drive hard drive option a removable hard drive must be ordered
- 2 Drive Bay 2 must be utilized before Drive Bay 3 can be chosen.

## Contact Information

**US and Canadian Office -** Nematron Corporation  
 5840 Interface Drive  
 Ann Arbor, MI 48103 USA  
 Tel: 1.734.214.2000  
 Fax: 1.734.994.8074  
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 17A Somerset House, Hussar Court  
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 Fax: +44 (0) 23 9226 8081  
 Email: [sales@nematron.net](mailto:sales@nematron.net)

## PowerView 6000 & 8000 Series

### 4.3" to 15.0" Industrial Operator Interface Terminals with Extensive PC-like Expansion



The PowerView 6000 & 8000 series provide a new level of performance and hardware expansion to operator Interface applications. The extensive communication support for a wide range of popular PLCs and Servo Controllers will allow simultaneous connection of up to 16 different controllers, along with Peer-to-Peer and Global variables functions. A comprehensive range of hardware interfaces are offered as standard and extend application support for USB, CompactFlash, Hard Disk, Bar Code Scanner, Wireless and many other devices. Free downloadable EasyBuilder 8000 configuration software supports all standard HMI functions, and includes macro, math and logic capability for advanced operations. Included with EasyBuilder is a subset of the popular Symbol Factory 2.0 graphics library, containing over 2,000 graphical objects.

### Hardware Features & Benefits

The Powerview 6000 & 8000 Series are embedded HMIs with the peripheral support of a PC. Extensive Serial, USB, and Ethernet device support extend the PV-6000/8000 Series application scope by making the integration of devices such as Barcode, Wireless and Audio Devices as natural as PC expansion. PV-6000 & 8000 offers multiple storage memory media options including Hard Drive Interface and peripheral support for Printer, Keyboard and Mouse (see Feature Matrix for full list of features).

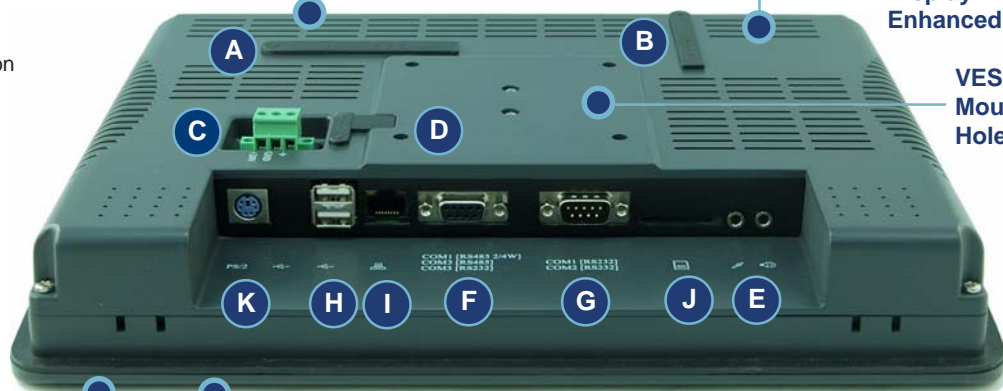
#### Enhanced PC-like Hardware Expansion

- A. IDE Interface (DOM slot)
- B. CompactFlash slot
- C. Power connector
- D. DIP SW and Reset Button
- E. Mic In/LineOut
- F. Com1 RS-485
- Com3 RS-485
- Com3 RS-232
- G. Com1 RS-232
- Com2 RS-232
- H. USB Host x 3
- I. Ethernet Port 10/100 BaseT
- J. SD Card
- K. PS/2

High Resolution Display with Enhanced Brightness

VESA 75mm Mounting Screw Holes

(PV-8121XV2 back shown)



4-wire Analog Resistive Touchscreen



Nominal 2" Mounting Depth

Note: Typical view - Models vary. See PowerView Features Matrix for details.



# EasyBuilder 8000 Development Software



For performance and functionality typically found in larger scale SCADA Systems, look no further than the PowerView 8000 Operator Interface Terminal Series. EasyBuilder 8000 Development Environment takes full advantage of the PV-8000's high resolution display with a wealth of application development tools. The complete EasyBuilder 8000 Development Software ships with every unit and is also available for free download at [www.nematron.com](http://www.nematron.com).

The advanced object libraries containing bar graphs, trend displays, list & dropdown menus, user configurable shapes and engineering icons facilitate fast mimic and screen development reducing project implementation time. Alarm management, historical and real time event & trend functions are functions not typically seen on graphical OIT platforms.

A suite of efficient application test tools allows the developer to simulate off-line and online for both single and multiple device applications from the PC. Additionally, a full control function allows the developer to run multiple simulation screens on a single PC to monitor data from many PV-8000s simultaneously.

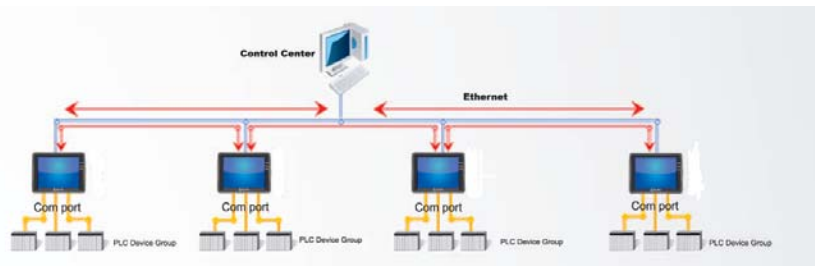
## Enhanced Application Development Suite

EasyBuilder 8000 comes with a set of enhanced tools for reducing the time to develop projects.

- Pop-up Windows
- Alarm & Event Management
- Recipe Management
- Data Logging/Data Sampling
- Object Libraries
  - Bar Graphs
  - Numerical Input
- Text Display
  - Multi-language
  - Windows® True Font
- Object Protection
- Support for BMP, JPG and GIF
- Multi-level Password Security
- Online & Offline Simulator
- Macro Language Programming

## Global Data Access and Exchange

Through Ethernet, each PV-8000 can communicate with one another and exchange data with other PV-8000s. In addition, each PV-8000 can operate the devices connected to other PV-8000s. Global Data Access also facilitates remote monitoring and fault diagnosis.



## Importing/Converting Projects from PV-500 Series

EasyBuilder 8000 provides the ability to import and/or convert projects created for the older PowerView 500 Series models into fully-functional projects that can be edited in EasyBuilder 8000 and utilized on the PV-8000 Series.

## Offline Simulation

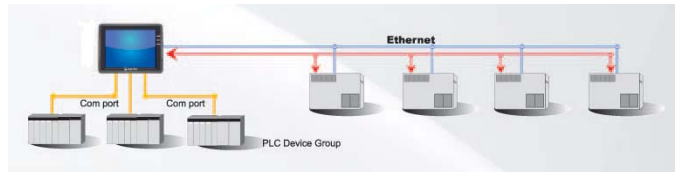
Simulate the operation of a PV-8000 directly on the PC without actually having a PV-8000 and a PLC.



## Serial and Ethernet Communication

Ethernet and Serial are included in the extensive Communication options. The PV-8000 also has its own Peer-to-Peer capability to share data across Ethernet.

**EasyBuilder 8000 Development Software ships free with every unit, also available for download at [www.nematron.com](http://www.nematron.com).**



## COMMUNICATION DRIVER SUPPORT

EasyBuilder 8000 comes equipped with support for many protocols. Highlights of more popular drivers are shown here. For a more complete list, consult the PLC Connect Guide included in software.

- AB Micrologix (DF1 Protocol)
- AB SLC500 (DF1, DH485\*)
- AB PLC5 (DF1 Protocol)
- AB CompactLogix, FlexLogix (AB Logix DF1)
- GE Fanuc Micro, 90-30 Series (GE SNP-X Protocol)
- Mitsubishi FX Series, Q00/Q01 CPU
- QJ71, Communication Module (QJ71), 232/485 BD
- Modicon PLC (Modbus RTU), TSX Micro, Nano, Naza Series (UnitelWay)
- Omron CPM, CQM Series (Host Link)
- Omron C200H/HS/ALPHA
- OMRON CP1H, CJ1, CS1 Series
- OMRON E5CN Series
- Siemens S7/200, S7/300, S7/MRI (requires V2 Hardware)
- Telemecanique Twido (Modbus RTU)
- Yokogawa FA-M3 Series

\* AB DH485 only available with use of Extreme Performance Units.

# PowerView Features Matrix



HARDWARE SPECS	PV-6050WHV2 PV-8050WHV2	PV-8056V1	PV-6070WHV2 & PV-8070WHV2	PV-6100WHV2 & PV-8100WHV2
Display Size	4.3" TFT LCD	5.6" TFT LCD	7.0" TFT LCD Widescreen	10.0" TFT LCD Widescreen
Resolution	480 x 272	320 x 234	800 x 480	800 x 480
Touchscreen	Yes	Yes	Yes	Yes
COM1 (See Note 1)	RS-232/RS-485 (2W/4W)	RS-232/RS-485 (2W/4W)	RS-232/RS-485 (2W/4W)	RS-232/RS-485 (2W/4W)
COM2	N/A	RS232	RS232	RS232
COM3 (See Note 1)	N/A	RS-232/RS-485 (2W)	RS-232/RS-485 (2W)	RS-232/RS-485 (2W)
Ethernet port	One (10/100) <i>PV-8050WHV1 only</i>	One (10/100)	One (10/100) <i>PV-8070WHV2 only</i>	One (10/100) <i>PV-8100WHV2 only</i>
USB	1 USB Client port	2 USB Client ports	1 USB Host port & 1 Client port	1 USB Host port & 1 Client port
Audio	N/A	N/A	N/A	N/A
Processor	32bit RISC CPU 400 MHz	32bit RISC CPU 200 MHz	32bit RISC CPU 400 MHz	32bit RISC CPU 400 MHz
Program Storage	128MB	32MB	128MB	128MB
DRAM	128MB	64MB	64MB	64MB
SD Card Slot	N/A	N/A	PV-8070WHV2 only	PV-8100WHV2 only
CompactFlash Slot	N/A	Yes	N/A	N/A
Real Time Clock	N/A	Built-in	Built-in	Built-in

## GENERAL SPECS

Input Power/Fuse Rating	24±20% VDC / 1.25 A	12–24 VDC / 1 A	24±20% VDC / 1.25 A	24±20% VDC / 1.25 A
Agency Approvals & Compliance	UL/cUL/CE ( <i>PV-8050 pending</i> )	UL/cUL/CE	UL/cUL ( <i>8070 only</i> ) CE ( <i>Both</i> )	UL/cUL ( <i>8100 only</i> ) CE ( <i>Both</i> )
Operating Temperature	0–45°C	-10–45°C	0–45°C	0–45°C
Operating Humidity	10-90% RH (non-condensing)	10-90% RH (non-condensing)	10-90% RH (non-condensing)	10-90% RH (non-condensing)
Dimensions	5.03" x 4.02" x 1.5"	8.03" x 5.9" x 1.89"	7.87" x 5.74" x 1.67"	10.67" x 8.35" x 1.97"
WxHxD	(128 x 102 x 38mm)	(204 x 150 x 48mm)	(200 x 146 x 42.5mm)	(271 x 212 x 50mm)
Panel Cutout	4.685" x 3.661" (119 x 93mm)	7.5" x 5.4" (192 x 138mm)	7.5" x 5.4" (192 x 138mm)	10.2" x 7.91" (259 x 201mm)
Depth	1.42" (36mm)	1.88" (48mm)	1.67" (42.5mm)	1.97" (50mm)
Weight	0.7 lbs ( 0.3 kg)	1.87 lbs (0.85 kg)	1.87 lbs (0.85 kg)	3.1 lbs (1.4 kg)



HARDWARE SPECS	PV-8104XHV2	PV-8121XV2	PV-8150XV2
Display Size	10.4" TFT LCD	12.1" TFT LCD	15.0" TFT LCD
Resolution	800 x 600	800 x 600	1024 x 768
Touchscreen	Yes	Yes	Yes
COM1 (See Note 1)	RS-232/RS-485 (2W/4W)	RS-232/RS-485 (2W/4W)	RS-232/RS-485 (2W/4W)
COM2	RS232	RS232	RS232
COM3 (See Note 1)	RS-232/RS-485 (2W)	RS-232/RS-485 (2W)	RS-232/RS-485 (2W)
Ethernet port	One (10/100)	One (10/100)	One (10/100)
USB	2 USB Host Ports	2 USB Host Ports	2 USB Host Ports
Audio	One Audio (Out, Mic)	One Audio (Out, Mic)	One Audio (Out, Mic)
Processor	32bit RISC CPU 500 MHz	32bit RISC CPU 500 MHz	32bit RISC CPU 500 MHz
Program Storage	256MB	256MB	256MB
DRAM	256MB	256MB	256MB
SD Card Slot	Yes	Yes	Yes
CompactFlash Slot	N/A	N/A	N/A
Real Time Clock	Built-in	Built-in	Built-in

## GENERAL SPECS

Input Power/Fuse Rating	24±10% VDC / 1.25 A	24±10% VDC / 1.25 A	24±10% VDC / 1.6 A
Agency Approvals & Compliance	UL/cUL/CE	UL/cUL/CE	UL/cUL/CE
Operating Temperature	0–45°C	0–45°C	0–45°C
Operating Humidity	10-90% RH (non-condensing)	10-90% RH (non-condensing)	10-90% RH (non-condensing)
Dimensions	11.26" x 8.35" x 1.97"	12.68" x 9.57" x 2.00"	14.41" x 11.54" x 2.17"
WxHxD	(286 x 212 x 50mm)	(322 x 243 x 51mm)	(366 x 293 x 55mm)
Panel Cutout	10.2" x 7.91" (259 x 201 mm)	12.0" x 9.09" (305 x 231 mm)	13.86" x 10.98" (352 x 279 mm)
Depth	1.97" (50mm)	2.00" (51mm)	2.17" (55mm)
Weight	3.5 lbs (1.6 kg)	1.6 lbs (2.1 kg)	1.6 lbs (2.9 kg)

**Note 1:** The use of either CBL-PV8COM1 or CBL-PV8COM3 adapter cable is required to connect to both ports simultaneously or to use the pre-built Nematron HMI Interconnect Cables. Direct connection to a single port using customer created cables is possible (consult the PLC connect guide in the documentation included with the software). The use of CBL-PV505-PLC232 is required to connect via RS-232 to COM1 on the PV6050WHV1.

## Ordering Information

Nematron products are available worldwide through our network of factory-authorized distributors. For distributor contact information in your area, please visit our website at [www.nematron.com](http://www.nematron.com) and submit a Request for Quote or call Nematron's Customer Care Center at your nearest regional sales office. ViewBuilder software can be downloaded free of charge from the Nematron website (registration required).

Part #	Description
PV-6050WV2	4.3" Widescreen TFT color display, Touch, <b>NO Ethernet (See Note 1 &amp; 2)</b>
PV-8050WV2	4.3" Widescreen TFT color display, Touch, Ethernet ( <b>Available Q4 2010</b> )
PV-8056V1	5.6" TFT color display, 64K colors, Touch, Ethernet
PV-6070WHV2	7.0" Widescreen TFT color display, 64K colors, Touch, High Resolution, <b>NO Ethernet (See Note 1)</b>
PV-8070WHV2	7.0" Widescreen TFT color display, 64K colors, Touch, Ethernet, High Resolution
PV-6100WV2	10.0" Widescreen TFT color display, 64K colors, Touch, <b>NO Ethernet (See Note 1)</b>
PV-8100WV2	10.0" Widescreen TFT color display, 64K colors, Touch, Ethernet
PV-8104XHV2	10.4" TFT color display, 64K colors, Touch, Ethernet, High Resolution and Extreme Performance
PV-8121XV2	12.1" TFT color display, 64K colors, Touch, Ethernet, Extreme Performance
PV-8150XV2	15.0" TFT color display, 64K colors, Touch, Ethernet, Extreme Performance
NS-VIEWBLDR8K	ViewBuilder Screen Editor Software on CD (Note: Software only - Free download at <a href="http://www.nematron.com">www.nematron.com</a> , also ships with each unit)
CBL-PV8COM1	Adapter cable to break out ports for COM1-232 and COM2-232. Allows Nematron HMI cables to be connected to PV8000 units
CBL-PV8COM1-8	Adapter cable to break out ports for COM1-232 and COM2-232. Allows Nematron HMI cables to be connected to PV8000 units. NOTE: Only for use when replacing a PV-500 series unit with a PV6000/8000 series unit and a previously installed Nematron HMI Interconnect Cable is present
CBL-PV8COM3	Adapter cable to breakout COM1-485, COM3-485, and COM3-232. Allows Nematron HMI cables to be connected to PV8000 units
CBL-PV8COM3-8	Adapter cable to break out ports for COM1-485, COM3-485, and COM3-232. Allows Nematron HMI cables to be connected to PV8000 units. NOTE: Only for use when replacing a PV-500 series unit with a PV8000 series unit and a previously installed Nematron HMI Interconnect Cable is present
CBL-PV505-PLC232	Adapter Cable to connect Nematron HMI Interconnect cables to PV-6050WV1 only.
COS-8056PS	Screen Protectors for 5.6" units - 5 pack
COS-8080PS	Screen Protectors for 8.0" units - 5 pack
COS-8104PS	Screen Protectors for 10.4" units - 3 pack
COS-8121PS	Screen Protectors for 12.1" units - 3 pack

**Note 1:** Non-Ethernet models (PV-6\_\_\_\_) are not stocked items and may incur longer lead times than Ethernet models (PV-8\_\_\_\_).

**Note 2:** This model can only connect to One RS-232 device or One RS-485 device.

### HMI Interconnect Cables

Nematron HMI Cable Cross-Reference by Controller. Cables are 6-foot length unless otherwise noted. The use of either CBL-PV8COM1 or CBL-PV8COM3 adapter cable is required to connect to the PV-6000/8000 Series units (except PV-6050WV1 unit) with the cables below. Use of CBL-PV505-PLC232 to connect to the PV-6050WV1 unit is required. Direct connection with customer created cables is possible, reference the PLC connect guide in documentation included with software.

Mfg	Model	Type/Controller Connector	PV-6000/8000 Series (See Note 3 & 4)
A-B/Rockwell	MicroLogix 1000/1200/1500	RS-232 (DIN 8-pin)	CBL-PV3-8
A-B/Rockwell	MicroLogix 1500	RS-232 (DE9S)	CBL-PV4-8
A-B/Rockwell	SLC 5/01, 5/02, 5/03, 5/04, 5/05, A-B Communications Interface Module (DF1)	RS-232 (DB9)	CBL-PV4-8
A-B/Rockwell	SLC500 (DH485)	RJ45	CBL-PV12
A-B/Rockwell	A-B PLC5 (DF1)	RS-232 (DB25)	CBL-PV13-8
GE	Series 90	RS-485 (DA15P)	CBL-PV5
GE	VersaMax	RS-485 (DA15P)	CBL-PV5
Koyo	DL05/DL105/DL205/DL305/DL350/DL405 Port 2	RS-232 (RJ12)	CBL-PV10-8
Koyo	DL205/DL250 CPU Port 2 (cannot be used with PV-570L)	RS-232 (15P SVGA)	CBL-PV6-8
Koyo	DL305/ DL340 (cannot be used with PV-570L)	RS-232 (DB25P)	CBL-PV7-8
Koyo	DL405 port 0	RS-232 (DA15P)	CBL-PV8-8
Koyo	DL405 port 1	RS-232 (DB25P)	CBL-PV9-8
Koyo	DL405 Port 2	RS-232 (RJ12)	CBL-PV10-8
Mitsubishi	A Series	RS-232 (DE9P)	CBL-PV2-8
Modicon	Micro, Momentum	RS-232 (RJ-45)	CBL-PV11-8
Siemens	Simatic TI505	RS-232 (DE9S)	CBL-PV14-8
Siemens S7	Siemens S7-200	RS-485 (DB9)	CBL-PV15

**Note 3:** When installing a PV-6000 or 8000 series unit in place of a PV-500 series with a previous version of a Nematron RS-232 HMI Interconnect Cable (not -8 suffix) the use of CBL-PV8COM1-8 or CBL-PV8COM3-8 is required.

**Note 4:** The use of either CBL-PV8COM1 or CBL-PV8COM3 adapter cable is required to connect these cables to the PV8000 Series units, except for the PV-6050WV1. For the PV-6050WV1 use CBL-PV505-PLC232 and do not include the "-8" suffix at the end of the controller specific cable, i.e. CBL-PV4 instead of CBL-PV4-8. Same price applies whether using "-8" in the part number or not.

### ADDITIONAL POWERVIEW ACCESSORIES

MTG-DEMOSTAND

Stand for demo and development purposes only. Includes mounts for 75mm or 100mm VESA patterns. **NOTE: Not intended for use in production applications.**



### Contact Information

**Headquarters - Nematron Corporation**  
 5840 Interface Drive  
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 Fax: 1.734.994.8074  
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**European Branch Office - Nematron Europe Ltd**  
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 Farnborough, Hampshire GU14 6UU UK  
 Tel: +44 (0)1252 370030  
 Fax: +44 (0) 1252 373767  
 Email: [sales@nematron.net](mailto:sales@nematron.net)

# OptiMate® Series

Intelligent Operator Interface Peripherals for Control & I/O



OptiMate 1000 Series



OptiMate 600 Series



OptiMate 400 Series

## Overview

Nematron has sixteen operator interface terminals in the OptiMate Series. All of the terminals are compatible with the major brands of PLC's. The OptiMate Series is also compatible with computer or microprocessor based applications using the OptiMate Hex protocol.

All of the operator terminals are low cost, high performance, man/machine interface modules with a broad range of input and display capabilities. The OptiMate product line is the most cost-effective solution in control & I/O on the market today.

OptiMate modules are compatible with any computer that has either an RS232 or RS422 port. They are also compatible with many major PLC's (see *PLC Compatibility Chart on page 2*).

## Broad Compatibility

OptiMate operator panels are compatible with most major brands of PLCs, as well as PC or microprocessor-based applications using the OptiMate Hex protocol.

Compatible PLC brands include:

- Allen Bradley
- AutomationDirect
- Entertron
- GE Fanuc
- IDEC
- Keyence
- Koyo
- Mitsubishi
- Modbus
- Modicon
- Omron
- Siemens
- Toshiba

See *PLC Accessory Cables on page 3*.

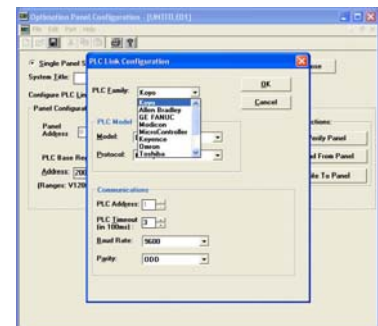
## Easy-to-Use Software for OptiMate Panel Configuration

OM-WINEDIT is a graphical, user-friendly software program that runs on any Windows®-compatible computer. It is available to configure any OptiMate panel system, or define all system parameters.



**OM-WINEDIT can be downloaded from the Nematron.com web site at**

**no charge.** It can also be purchased on CD-ROM and comes with OM-ACBL-1 and OM-CCBL cables to connect the PC and operator panels.



Our Configuration Editor, OM-WINEDIT is designed specifically for custom configuration of our modules, allowing you maximum flexibility in customizing the way your panels will operate.

# OptiMate Product Guide

## 1000 Series



**OM1124 Annunciator Panel**  
A high-intensity LED panel with 24 LED light bars



**OM1212 Button/Lamp Panel**  
12 LED light bars and 12 pushbutton pads



**OM1224 Pushbutton Panel**  
24 pushbutton pads ready for custom labels



**OM1312 Setpoint Panel**  
Three 4-digit numeric displays and 12 mapped data fields



**OM1500 Operator Terminal**  
2x20 char. LCD with 160-msg capacity three LED light bars, five pushbuttons, and full keypad



**OM1510 Operator Terminal**  
All the features of the OM1500, plus a configurable menu tree

## 600 Series



**OM609 Combo Panel**  
Six LED light bars and nine pushbutton pads



**OM613 Operator Panel**  
4-digit numeric display, four mapped fields, two LED light bars, four pushbutton pads



**OM620 Operator Panel**  
2x20 char. LCD with 160-message capacity, configurable menu tree, five pushbutton pads



**OM640 Operator Panel**  
4x20 char. LCD with 160-message capacity, three LED light bars, five pushbutton pads

## 400 Series



**OM406 Indicator/Pushbutton Panel**  
Six LED light bars and four pushbutton pads



**OM413 Setpoint/Display Panel**  
One 4-digit numeric display and six mapped data fields



**OM414 Setpoint/Display Panel**  
One 8-digit numeric display and six mapped data fields



**OM420 2-line Operator Panel**  
2x20 char. LCD with 160-msg capacity and four pushbuttons



**OM440 4-line Operator Panel**  
4x20 char. LCD with 160-message capacity

## OM9001 Communications Master



The OM9001 Communications Master provides an intelligent interface between your PLC and up to 31 connected OptiMate panels (1000 Series or 600 Series). The OM9001 communicates serially to the PLC, transferring register data in both directions, and transparently manages operations amongst the OptiMate panels. The Communications Master can be configured via the OptiMate Configuration Editor to use any of several industry-standard PLC protocols. Baud rate, parity and other protocol specifics are interactively selectable to enable communications. Once configured, the OM9001 will continuously transfer data between all modules and the PLC to read and write the appropriate data registers. The OM9001 and the OptiMate panels take care of the rest.

## PLC Compatibility Chart

**How to Order:** Use the PLC Compatibility Chart below to determine the letter to append to the model number that you are ordering. Examples: To purchase an OM640 for use with an AB PLC, then the model number to order would be OM640G. For use with a Modbus PLC then it would be OM640H. A "--" indicates that the model is incompatible with the corresponding PLC.

PLC Brand	400 Series	600 Series	1000 Series	OM9001
Allen Bradley	G	G	A	A
AutomationDirect	G	G	A	A
Entertron	J	J	B	--
GE Fanuc	--	--	A	A
IDEC	--	--	B	--
Keyence	H	H	--	--
Mitsubishi	L	L	B	--
Modbus	H	H	A	A
Omron	--	--	A	A
Toshiba	--	--	A	A
OptiMate Hex	G,J,H,L	G,J,H,L	A,B	--

# OptiMate Accessories

## Configuration Cables - All Cables are 6 ft. long unless stated otherwise.

<b>OM-ACBL-1</b>	Connects between 600 or 1000 series panels and a PC. (Also used with A/B PLCs)
<b>OM-CCBL</b>	Connects between 400 series panels and PC

## PLC Communication Cables - All Cables are 6 ft. long unless stated otherwise.

### ▪ Allen Bradley PLCs

<b>OM-ACBL-1</b>	Connects any 600 or 1000 series OptiMate panel to an Allen Bradley SLC 5/03 or 5/04 PLC
<b>OM-ACBL-2</b>	Connects any 600 or 1000 series OptiMate panel to an Allen Bradley Micrologix PLC
<b>OM-ACBL-3</b>	Connects any 400 series OptiMate panel to an Allen Bradley SLC 5/03 or 5/04
<b>OM-ACBL-4</b>	Connects any 400 series OptiMate panel to an Allen Bradley Micrologix PLC

### ▪ GE Fanuc PLCs

<b>OM-GCBL-1</b>	Connects any 1000 series OptiMate panel to GE Series 90 Micro or 90/30 PLC
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### ▪ Keyence PLCs

<b>OM-KCBL-1</b>	OptiMate 400 series panel to Keyence CPU
<b>OM-KCBL</b>	OptiMate 600 series panel to Keyence CPU

### ▪ Koyo (Automationdirect.com) PLCs

<b>OM-2CBL</b>	OptiMate 600 or 1000 series to DL105, DL205, D3-350 or D4-450 CPU. 15 pin 'D' shell to RJ12 jack.
<b>OM-2CBL-1</b>	OptiMate 600 or 1000 series to DL250 bottom port. 15 pin 'D' shell to 15 pin SVGA.
<b>OM-2CBL-2</b>	OptiMate 400 series to DL05, DL105, DL205, DL350 or DL450 CPU. RJ12 to RJ12.
<b>OM-3CBL</b>	OptiMate 600 or 1000 series to DL340 CPU. 15 pin 'D' shell to RJ11
<b>OM-3CBL-1</b>	OptiMate 400 series to D3-340 CPU. RJ12 to RJ11
<b>OM-4CBL-1</b>	Connects 600 or 1000 series panel to DL405 CPU. 15 pin 'D' shell to 15 pin 'D' shell
<b>OM-4CBL-2</b>	Connects 600 or 1000 series panel to DL405 or DL350 CPU. 15 pin 'D' shell to 25 pin 'D' shell
<b>OM-4CBL-3</b>	Connects 400 series panel to DL405 CPU. RJ12 to 15 pin 'D' shell

### ▪ Modicon PLCs

<b>OM-MCBL-1</b>	OptiMate 600 or 1000 series to Modicon RJ45
<b>OM-MCBL-2</b>	OptiMate 400 series to Modicon RJ45

## Power Supplies

<b>OL-PS1</b>	Wall plug power supply for 600 series, 1000 series panels. 24VDC (unregulated) @ 1A output.
<b>OM-PS400</b>	Wall plug power supply for 400 series panels. 5V @250mA with center negative. Required for configuration and for connection to PLCs that do not have a 5VDC connection on their communication port.

## Light Bar Kits

<b>OM-GREEN</b>	4-Pack of Green Light Bars
<b>OM-RED</b>	4-Pack of Red Light Bars
<b>OM-YELLOW</b>	4-Pack of Yellow Light Bars

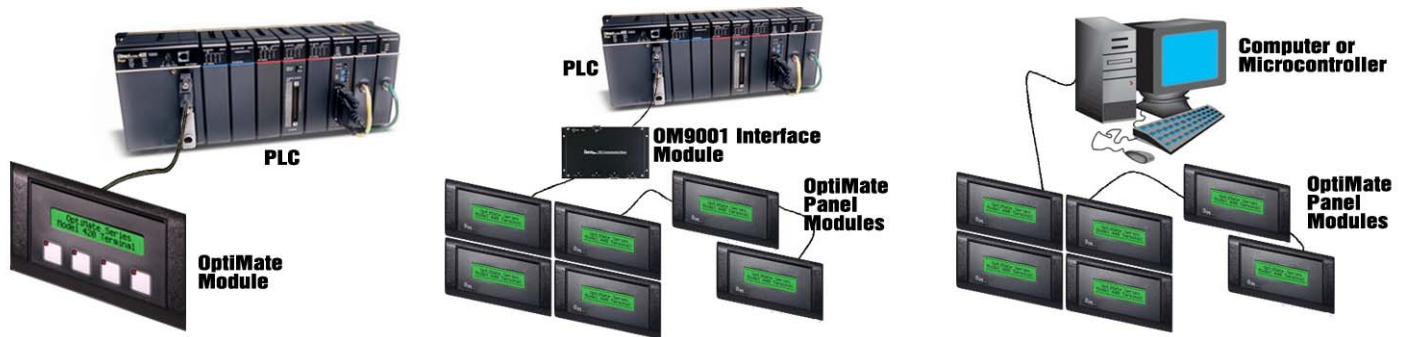
## Connector Kits

<b>OM-CMCON-1</b>	Package of 4 ribbon cable connectors OM9001 to OptiMate connection.
<b>OM-CMCON-2</b>	Package of 4 solder type 15 pin (male) 'D' shell connectors for OM9001 to OptiMate connection.
<b>OM-CMCON-3</b>	Package of 2, 15 pin 'D' shell to 4 pin terminal block converters for 600 or 1000 series RS422 connection.
<b>OM-PSCON</b>	Package of 4 terminal plugs for power connection to 600 or 1000 series panels.

## Configuration Software

<b>OM-WINEDIT</b>	OptiMate panel configuration software on CD-ROM. Comes with OM-ACBL-1 and OM-CCBL cables to connect the PC and operator panels. Software can be downloaded separately at no charge from Nematron.com.
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## Configuration Options



### PLC Stand Alone

OptiMate modules plug directly into most PLCs. A simple RS232 cable connection allows you to interface and control the OptiMate module via PLC data registers and ladder logic. To do this the operator terminal uses a bank of mapped PLC registers. Complete operator interface is performed using the PLC registers for display message selection, data entry, function key interface and indicator light control. The OptiMate module continuously accesses these PLC registers and performs operations under ladder logic control on a real-time basis.

PLCs are slave devices on their standard communications ports. This means that a panel attached to the standard port must control the transfer of information by reading and writing the PLC registers. OptiMate modules will perform this communications for most major PLC protocols.

### PLC Multi Modules

Larger systems involving operator panels can be configured using an OM9001 Communications Master and multiple 600 and 1000 series panels. This configuration uses an RS422 link with up to 31 modules installed on the communications cable. The OM9001 Communication transfers data between the PLC and the individual OptiMate modules. Modules can be located together to form custom modules or they can be distributed anywhere within 4000 feet.

The OM9001 Communications Master provides a transparent interface between the PLC and a group of OptiMate modules. The communication interface between modules requires only four wires. The OM-WinEdit software program is used to configure both the OM9001 and the connected panels

This modular approach to custom applications provides a nearly limitless number of possibilities.

### Microprocessor Based Systems

OptiMate modules can also interface directly to most computers or microcontrollers using the OptiMate Hex protocol. In a microprocessor-based system, the host microprocessor is the system master. The OptiMate modules are slave devices that respond to commands from the host. The OptiMate Hex protocol is used to develop a program that allows the user to directly control OptiMate module operation and retrieve operator inputs. A serial port is required and the modules communicate over either RS232 for a single panel configuration or RS422 for multiple panel configurations.

With RS422 communications modules can be located together to form custom modules or they can be distributed anywhere within 4000 feet.

## Ordering Information

Nematron and OptiMate brand products are available worldwide through our network of factory-authorized distributors. For distributor contact information in your area, please visit our website at [www.nematron.com](http://www.nematron.com) and submit a Request for Quote or call Nematron's Customer Care Center at your nearest regional sales office. OM-WINEDIT software can be downloaded free of charge from the Nematron website.

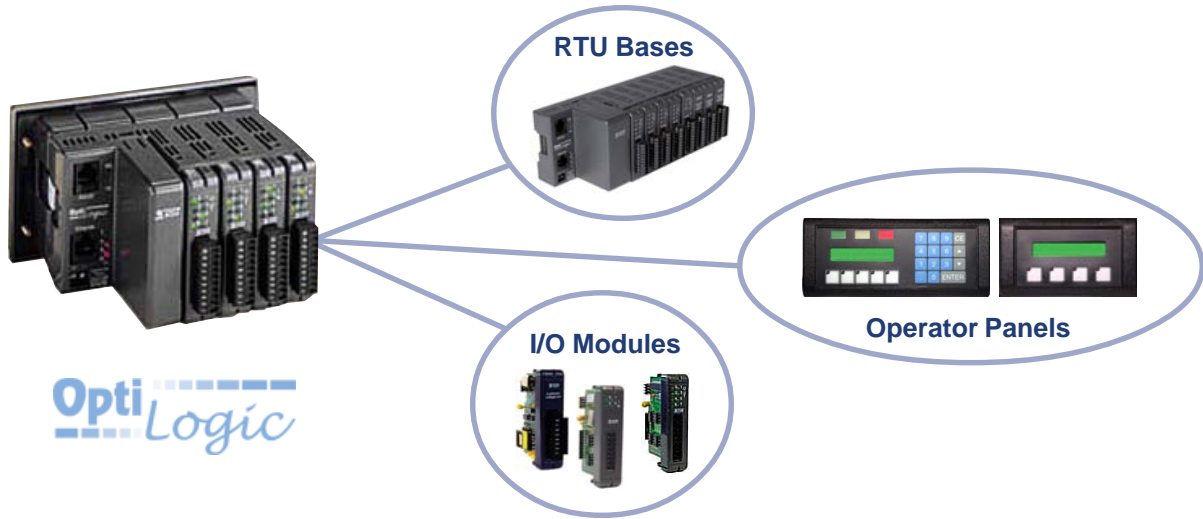
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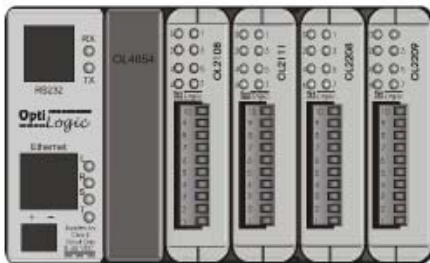
# OptiLogic® Series

Flexible Modular System for Cost-Effective Ethernet I/O



## Overview

Nematron's OptiLogic series is a flexible, modular system, designed to allow the ability to configure an optimal solution for specific application needs. To accomplish this goal, Optimization has developed a series of I/O modules, communications modules, specialty modules and operator panels that can be plugged together in nearly any combination. This datasheet covers the currently available modules that plug into the card cage (RTU base module).



Most OptiLogic modules can be installed in any card cage slot and used in any appropriate combination and quantity\* that will fit in the card cage. This applies to all general purpose digital and analog I/O. If an application requires all digital inputs - plug in digital input modules only. If an application requires a mixture of analog and digital input and output - select the mixture that fits the need. Snap together modularity gives the ability to optimize any system for any need.

\*Certain power limitations and requirements apply. Please refer to user manuals for details.

## System Features Overview

- Flexible, modular system
- 4-slot and 8-slot card cage options (RTUs)
- Easy snap-together design
- Mountable on standard DIN rails
- Optional operator panel interfaces
- Wide selection of I/O modules available
- 10BaseT (10 Mbit/s) Ethernet-ready
- Modbus TCP/IP-capable (OL4228 RTU base only)
- OLQuickStart software for testing and exercising RTUs
- OL System Builder software provides an interface between program and RTU
- Manuals and product guides are available online

# OptiLogic Product Guide

## RTU Bases

OptiLogic Remote Terminal Units (RTU) deliver superior point-of-use 10-BaseT (10 Mbit/s) Ethernet I/O and operator panel capabilities for PC-based data acquisition and control systems. OptiLogic RTUs allow any appropriate combination of OptiLogic I/O modules to be easily plugged into the available slots. OptiLogic RTUs are available with four or eight slots.

- OL4054 4-slot I/O base or OL4058 8-slot I/O base, both with IPX or OptiLogic/UPD communications.
- Also, the OL4228 8-slot I/O base extends the OptiLogic family to include TCP/IP communications. Now, any Modbus TCP-capable, PC-based application can interface with OptiLogic Ethernet I/O.



**OL 4054**  
4 slot RTU Base  
with OptiLogic/UDP and IPX

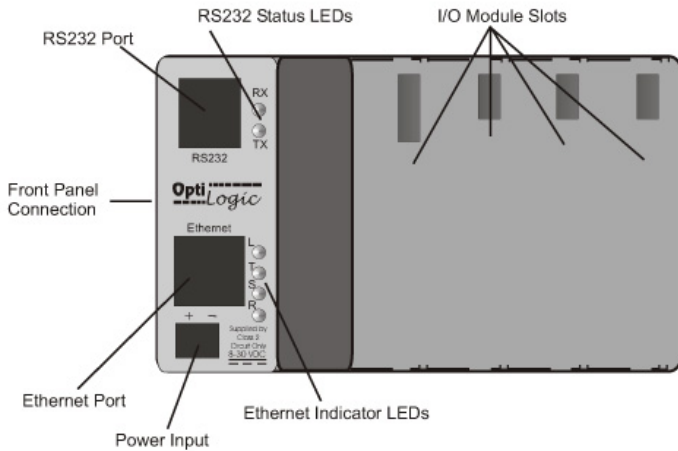


**OL 4058**  
8 slot RTU Base  
with OptiLogic/UDP and IPX

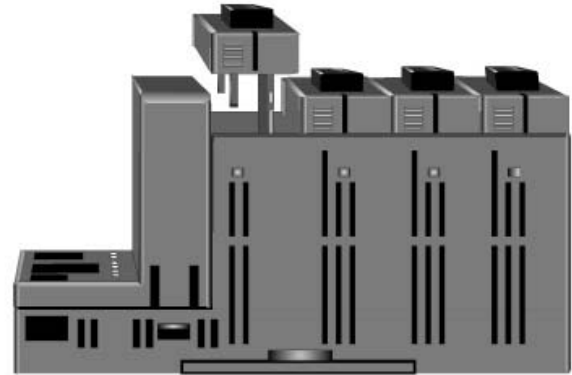


**OL 4228**  
8 slot RTU Base with OptiLogic/UDP  
and Modbus TCP/IP

### RTU Base Assembly Diagram



### RTU Base Snap-Together Design



The figures above show OptiLogic Ethernet RTU base examples. The particular bases shown are 4-slot bases. (Bases with 4 or 8 slots are available and have the same basic features.) An OptiLogic Ethernet RTU base consists of a card cage containing an OptiLogic motherboard. The base unit has a built-in Ethernet port, as well as an RS232 port. The OptiLogic base mounts by snapping onto a standard DIN rail, or by snapping onto the DIN rail built into OptiLogic operator panels (see right). When attached to an OptiLogic operator panel, the complete assembly can then be panel mounted. I/O and specialty modules plug into the available slots in the OptiLogic base.



## OptiLogic Operator Panels

All OptiLogic RTUs can be mounted on a standard DIN rail, but if an operator panel is required, these units can be quickly snapped onto the back of any OptiLogic panel. The combined module can then be easily mounted in a panel. A single cable links the two units, providing both signal and power.



**OL3406**  
Pushbutton / Indicator Panel



**OL3420**  
Operator Terminal



**OL3440**  
Display Panel



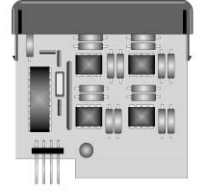
**OL3850**  
Operator Terminal

# OptiLogic Product Guide

## Cost Effective Network Solution

OptiLogic I/O modules are designed to meet the needs in real world applications. The modules are small circuit boards with a few available points to minimize system cost. Most module connectors are pluggable terminal strips for easy connection, and easy maintainability.

The snap-together design means low labor costs. Visual status indicators on digital I/O and communications modules provide a convenient means for monitoring operation. All together, the result is a cost effective, easy to use and maintain set of industrial control hardware.



### OptiLogic Input Devices



**OL2201**  
8 Point Digital Input Simulator



**OL2205**  
4 point Input, 10-30V AC/DC



**OL2208**  
8 Point Input, 10-30 VDC  
(sourcing or sinking)



**OL2211**  
8 Point AC Input,  
80-132 VAC

### OptiLogic Output Devices



**OL2104**  
4 Relay Output



**OL2108**  
8 Relay Output



**OL2109**  
8 Point, 5-40 VDC sinking output



**OL2211**  
8 Point Solid State Relay Output

### OptiLogic Analog Input/Output Devices



**OL2304**  
4 Channel Voltage Output  
0-5V, 0-10V, +/-5V, +/-10V  
(individual channel configurable)



**OL2408**  
8 Channel, 14 bit,  
0-5 VDC or 0-10 VDC  
analog input



**OL2418**  
8 Channel, 14 bit,  
4-20mA analog input

### OptiLogic Pulse Counters



**OL2252**  
2 Channel 0 - 15 KHz



**OL2258**  
High Speed Pulse Counter &  
Direction, Up/Down Count or Quadrature

### Communication Devices



**OL2602**  
2 Channel RS232C

## Accessories

**Cables** - All Cables are 6 ft. long unless stated otherwise.

<b>OL-CBL-X01</b>	Ethernet category 5 crossover cable, 6 foot, red
<b>OL-CBL-P01</b>	Ethernet category 5 patch cable, 6 foot, black
<b>OL-CBL-DNL</b>	Base software update download cable. Connects between base RS-232 port and PC's RS232 port. 9 pin D-shell female to RJ12 connector
<b>OL-CBL-RIB1</b>	Interconnect cable, base to operator panel, 1 inch (approximate)
<b>OL-CBL-RIB12</b>	Interconnect cable, base to operator panel, one foot long
<b>OL-CBL-RIB36</b>	Interconnect cable, base to operator panel, three feet long

### Power Supplies

**OL-PS1** Wall plug power supply for OL4054 and OL4058 panels. 24VDC (unregulated) @ 1A output.

### Network Interface Cards

**OL-NIC01** Network Interface Card. PCI ethernet adapter (3Com)

## OptiLogic Software Options

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*OptiLogic Software is available for download at no charge from the Nematron.com web site.*

### OptiLogic QuickStart



OLQuickStart Software tests and exercises OptiLogic RTUs over an Ethernet link. QuickStart is easy to use software to test your system hardware and communications links. Not a software development package.

### OptiLogic System Builder

For Windows applications development in C/C++, Visual Basic, or Visual Basic.NET, our System Builder Software provides an easy to use interface between your program and the OptiLogic RTUs. Supporting operating systems include Windows® NT4/ Windows 2000®/Windows XP®/ Windows Vista®\*.

The OptiLogic System Builder includes the OptiLogicProtocol.dll, header files, and manuals for use with either Visual Basic or C/C++. By using System Builder, you can quickly develop your application code, or adapt OptiLogic to your existing software. System calls to the DLL are simple and straightforward. The OptiLogic DLL handles all of the Ethernet details for you, making operation transparent. You are left to concentrate on what's really important – the functional aspects of your application.

\* Windows Vista does not support IPX. The IPX protocol is not available when running on Vista OS.

### OptiLogic Update Tool

This software is used to configure an IP address on the 4054/4058/4228 RTU bases and to download firmware updates.

## Ordering Information

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Nematron products are available worldwide through our network of factory-authorized distributors. For distributor contact information in your area, please visit our website at [www.nematron.com](http://www.nematron.com) and submit a Request for Quote or call Nematron's Customer Care Center at your nearest regional sales office. Product manuals can be downloaded free of charge from the Nematron website.

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