

## WOP-2000 Series Selection Guide



Model Name	WOP-2035V		WOP-2057V		WOP-2070V	WOP-2080V	WOP-2104V	WOP-2121V
<b>Ordering Information</b>	WOP-2035V-S1AE	WOP-2035V-N1AE	WOP-2057V-S1AE	WOP-2057V-N1AE	WOP-2070V-N4AE	WOP-2080V-N4AE	WOP-2104V-N4AE	WOP-2121V-N4AE
<b>CPU</b>	RISC 32bits, 70MHz		RISC 32bits, 70MHz		RISC 32 bits, 200 MHz	RISC 32bits, 200MHz	RISC 32bits, 200MHz	RISC 32bits, 200MHz
<b>Battery Backup Memory</b>	128KB		128KB		128KB	128KB	128KB	128KB
<b>Flash Memory</b>	4MB	4MB	4MB	4MB	16MB	16MB	16MB	16MB
<b>Operating System</b>	HMI RTOS, PM Designer 2.0		HMI RTOS, PM Designer 2.0		HMI RTOS, PM Designer 2.0	HMI RTOS, PM Designer 2.0	HMI RTOS, PM Designer 2.0	HMI RTOS, PM Designer 2.0
<b>Display</b>	<b>Type</b>	QVGA TFT LCD	QVGA TFT LCD	WVGA TFT LCD	SVGA TFT LCD	SVGA TFT LCD	SVGA TFT LCD	SVGA TFT LCD
	<b>Size</b>	3.5"	5.7"	7"	8"	10.4"	12.1"	
	<b>Max. Resolution</b>	320 x 240	320 x 240	800 x 480	800 x 600	800 x 600	800 x 600	800 x 600
	<b>Max. Colors</b>	256 colors	256 colors	65,536 colors	65,536 colors	65,536 colors	65,536 colors	65,536 colors
	<b>Luminance (cd/m2)</b>	350	400	300	350	300	350	350
	<b>Viewing Angle (H/V°)</b>	120/120	100/95	140/130	140/130	140/120	130/110	
	<b>Backlight Life (hur)</b>	LED, 20,000	LED, 20,000	LED, 20,000	LED, 50,000	LED, 30,000	CCFL, 30,000	
<b>Dimming</b>	Adjustable	Adjustable	Adjustable	Adjustable	Adjustable	Adjustable	Adjustable	
<b>Touchscreen</b>	4 wires Analog resistive		4 wires Analog resistive		4 wires Analog resistive	4 wires Analog resistive	4 wires Analog resistive	8 wires Analog resistive
<b>Power-On LED</b>	Yes		Yes		Yes	Yes	Yes	Yes
<b>Communication LED</b>	No		COM1 and COM2		No	COM1, COM2 and COM3	COM1, COM2 and COM3	COM1, COM2 and COM3
<b>Front USB Access</b>	No		No		No	No	Yes	No
<b>Communication Interfaces</b>	<b>COM1</b>	RS-232/422/485 (DB9 Female)	RS-232/422/485 (DB9 Female)	RS-232/422/485 (DB9 Female)	RS-232/422/485 (DB9 Female)	RS-232/422/485 (DB9 Female)	RS-232/422/485 (DB9 Female)	RS-232/422/485 (DB9 Female)
	<b>COM2</b>	RS-422/485 (5-Pins Plug Connector)	RS-232/422/485 (DB9 Male & 5-Pins Plug Connector)	RS-232/422/485 (DB9 Male & 5-Pins Plug Connector)	RS-232/422/485 (DB9 Male & 5-Pins Plug Connector)	RS-232/422/485 (DB9 Male & 5-Pins Plug Connector)	RS-232/422/485 (DB9 Male & 5-Pins Plug Connector)	RS-232/422/485 (DB9 Male & 5-Pins Plug Connector)
	<b>COM3</b>	-	-	-	-	RS-232 (6-Pins Plug Connector)	RS-232 (6-Pins Plug Connector)	RS-232 (6-Pins Plug Connector)
	<b>Ethernet (RJ45)</b>	-	10/100-BaseT	-	10/100-BaseT	10/100-BaseT	10/100-BaseT	10/100-BaseT
<b>I/Os</b>	<b>USB Client</b>	-	-	-	Yes	Yes	Yes	Yes
	<b>USB Host</b>	-	-	Yes	-	-	-	-
	<b>Micro-SD Slot</b>	-	-	-	-	-	-	-
<b>Power Supply Voltage</b>	24VDC ±10%		24VDC ±10%		24 VDC ±10%	24VDC ±10%	24VDC ±10%	24VDC ±10%
<b>Power Consumption</b>	10W		15W		25 W	25W	25W	25W
<b>Dimension W x H x D (mm)</b>	130 x 106.2 x 45mm (5.11" x 4.18" x 1.77")	187 x 145.7 x 45mm (7.36" x 5.73" x 1.77")	188 x 143.3 x 40 mm (7.4" x 5.64" x 1.57")	232.5 x 175.8 x 42.9mm (9.15" x 6.92" x 1.69")	297 x 224 x 52mm (11.6" x 8.8" x 2.04")	297 x 224 x 52mm (11.6" x 8.8" x 2.04")	315 x 241 x 54.5mm (12.4" x 9.48" x 2.14")	
<b>Cut-out Dimensions W x H (mm)</b>	118.5 x 92.5mm (4.66" x 3.64")	174.5 x 132.5mm (6.87" x 5.21")	174.5 x 132.5 mm (6.87" x 5.21")	221.5 x 164mm (8.72" x 6.45")	285.5 x 210.5mm (11.24" x 8.28")	285.5 x 210.5mm (11.24" x 8.28")	301.5 x 228mm (11.87" x 8.97")	
<b>Front Panel Thickness</b>	6 mm		6 mm		6 mm	6 mm	6 mm	6 mm
<b>Net Weight</b>	0.27 kg		0.65 kg		1.0 kg	1.0 kg	1.55 kg	1.55 kg
<b>Operating Temperature</b>	0 ~ 50°C (32 ~ 122° F)		0 ~ 50°C (32 ~ 122° F)		0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)
<b>Storage Temperature</b>	-20 ~ 60°C (-4 ~ 140° F)		-20 ~ 60°C (-4 ~ 140° F)		-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)
<b>Humidity</b>	10 ~ 95% RH @ 40° C, non-condensing		10 ~ 95% RH @ 40° C, non-condensing		10 ~ 95% RH @ 40° C, non-condensing	10 ~ 95% RH @ 40° C, non-condensing	10 ~ 95% RH @ 40° C, non-condensing	10 ~ 95% RH @ 40° C, non-condensing
<b>Ingress Protection</b>	Front panel: NEMA4, IP65		Front panel: NEMA4, IP65		Front panel: NEMA4, IP65	Front panel: NEMA4, IP65	Front panel: NEMA4, IP65	Front panel: NEMA4, IP65
<b>Certification Approval</b>	CE / FCC / BSMI / CCC / UL		CE / FCC / BSMI / CCC / UL		CE / FCC / BSMI / CCC / UL	CE / FCC / BSMI / CCC / UL	CE / FCC / BSMI / CCC / UL	CE / FCC / BSMI / CCC / UL

## Regional Service & Customization Centers

<b>China</b> Kunshan 86-512-5777-5666	<b>Taiwan</b> Taipei 886-2-2692-6076	<b>Netherlands</b> Eindhoven 31-40-267-7000	<b>Poland</b> Warsaw 48-22-33-23-730	<b>USA/ Canada</b> Milpitas, CA 1-408-519-3800
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## Worldwide Office

### Greater China

<b>China</b>	Toll Free 800-810-0345
Beijing	86-10-6298-4346
Shanghai	86-21-3632-1616
Shenzhen	86-755-8212-4222
Changsha	86-28-8545-0198
Hong Kong	852-2720-5118

### Taiwan

Toll Free	0800-777-111
Rueiguang	886-2-2792-7818
Yang Guang	886-2-2792-7818
Shing-Tien	886-2-2218-4567
Taichung	886-4-2378-6250
Kaohsiung	886-7-229-3600
Hsinchu	886-3-543-0569

### Asia Pacific

<b>Japan</b>	Toll Free 0800-500-1055
Tokyo	81-3-6802-1021
Osaka	81-6-6267-1887
<b>Korea</b>	Toll Free 080-363-9494
Seoul	82-2-3663-9494
<b>Singapore</b>	Singapore 65-6442-1000
<b>Malaysia</b>	Toll Free 1800-88-1809
Kuala Lumpur	60-3-7724-3555
Penang	60-4-397-3788

### Thailand

Bangkok	66-2-248-3140
<b>India</b>	Toll Free 1800-425-5070
Bangalore	91-80-2337-4567

### Australia

Melbourne	1300-308-531
Sydney	1300-308-531

### Europe

<b>Toll Free</b>	00800-2426-8080
<b>Germany</b>	Munich 49-89-12599-0
Dusseldorf	49-211-97477-0
<b>France</b>	Paris 33-1-4119-4666
Grenoble	33-4-7670-4700
<b>Italy</b>	Milano 39-02-9544-961
<b>Benelux &amp; Nordics</b>	Breda 31-76-5233-100
Roosendaal	31-165-550-505
<b>UK</b>	Berkshire 44-1344-381210
<b>Poland</b>	Warsaw 48-22-33-23-740/41
<b>Russia</b>	Toll Free 8-800-555-01-50
Moscow	7-495-232-1692

### Americas

<b>North America</b>	Toll Free 1-800-800-6889
Cincinnati	1-513-742-8895
Milpitas	1-408-519-1788
Irvine	1-949-789-7178
<b>Brazil</b>	Toll Free 0800-770-5355
Saude-São Paulo	55-11-5592-5355

# Industrial Operator Panels

Enabling Flexible Connectivity Through Powerful Solution-oriented Software

- WOP-2000 Introduction
- WOP-2000 Product Portfolio
- WOP-2000 Features
- PM Designer Features
- Successful Applications



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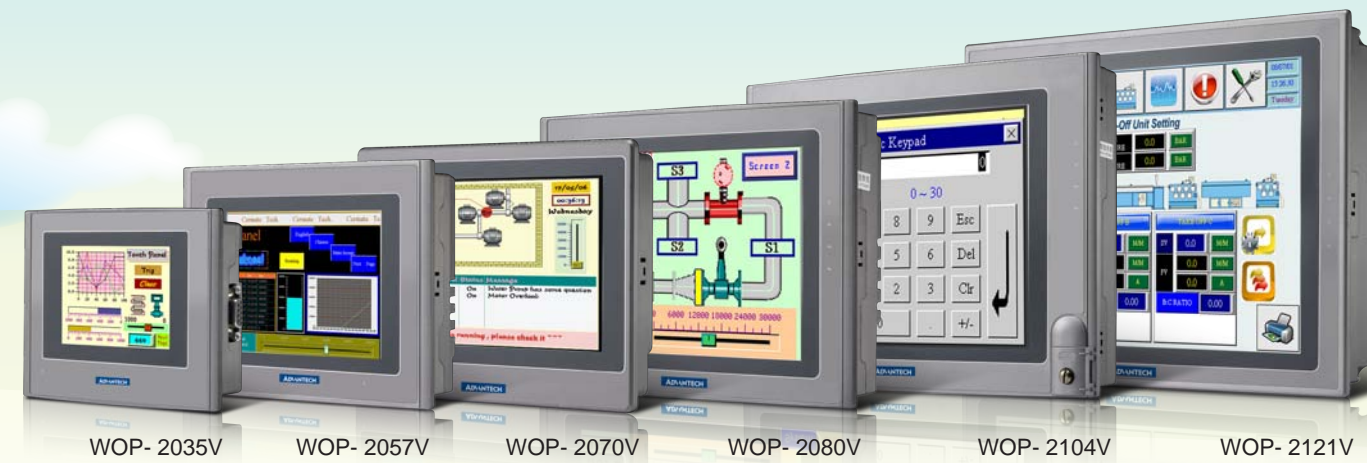
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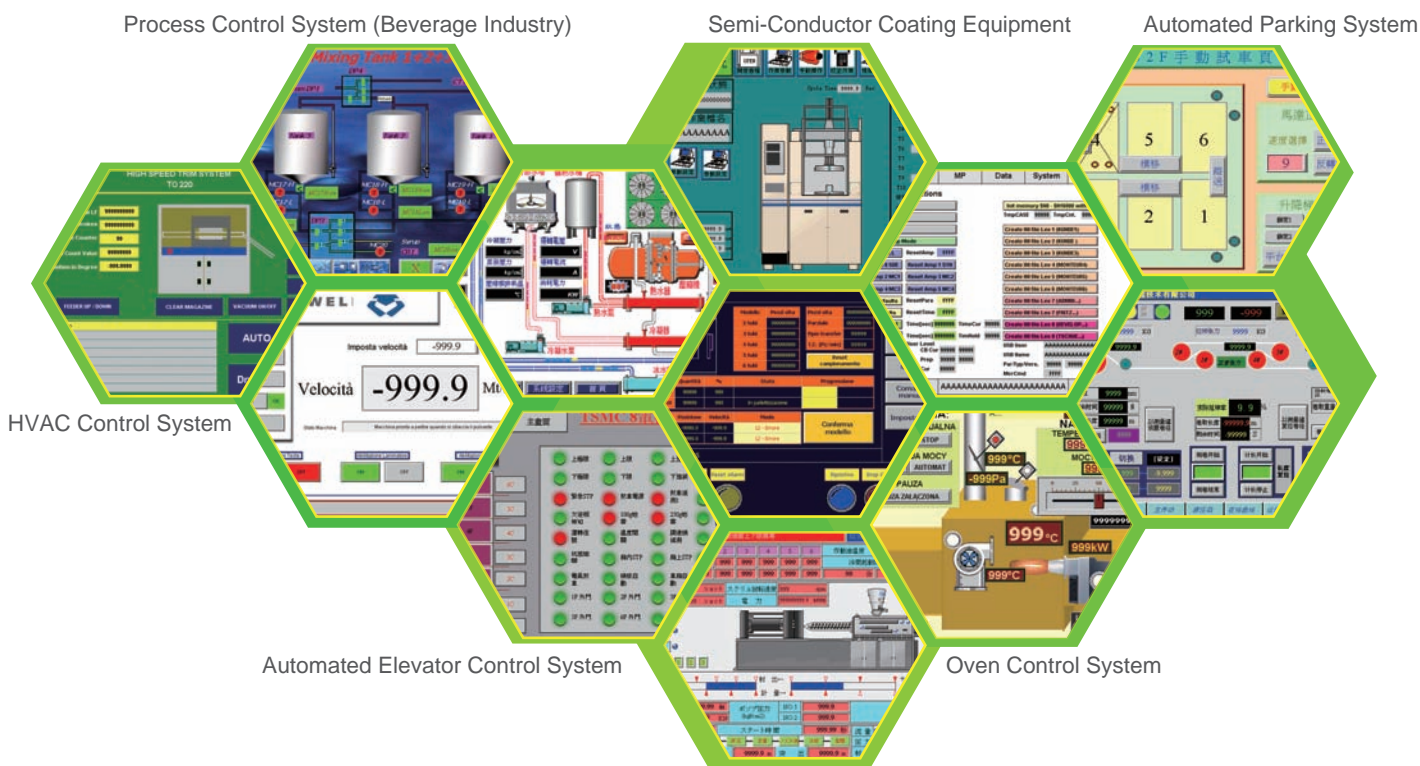
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# WOP 2000 Series

To satisfy the stringent standards required in the automation market, Advantech offers the WOP-2000 series for different applications involving the use of PLCs, motion/thermal controllers, inverters and sensors. PM Designer 2.0 is a software development kit helps create application solutions for labor-saving, improved efficiency of manufacturing and easy control of every machine in the factory. WOP-2000 series is bundled with PM Designer 2.0 offering an outstanding price performance ratio for various markets such as conventional operator panels, HMI + Low mini SCADA systems, and HMI + communication gateways.



## Successful Application Screens



## HMI Development Software - PM Designer

PM Designer is proven in many application fields and is an easy to use integrated development tool featuring solution-oriented screen objects, high-end vector graphics, Windows fonts for multi-language applications, recipes, alarms, data loggers and operation logging. PM Designer also includes online/offline simulation and other utility programs such as Data Transfer Helper (DTH); recipes editors and text editors. WOP runtime, a part of PM Designer, guarantees reliability and performance because of the minimum system overhead, high communication data rates, sub-second screen switching, and 24/7 operation.

### Shortcut & Execution Toolbar Icon Display Improves Work Efficiency

- Shortcut icons designed to show objects, figure type, and operations improving work efficiency.
- Frequently used objects and figures can be registered as Favorites.

### Project Workspace An Intuitive Tree Display Makes Runtime Development Easy

Easy to create, develop, and manage project property efficiency by project-based management worksheets.

### Screen Design Worksheet Smart Screen Design

Easy to view screens during runtime development, adjustable based on user-oriented application.

### Message Build List Compile & Simulate Results

By double clicking on the error message after compilation it will automatically jump to the place where the problem is.

### Draw Toolbar A variety of drawing tools empower developers to create expansive applications.

## Software Features

- Allows users to switch multi-language UI dynamically, with Unicode and multilingual screen text supported
- Provides password protection of designs, macros and upload/download operations
- Provides index registers for modifying device addresses at runtime
- Operation log helps the review and investigation of important events

- Allows downloads of runtime data using serial port, Ethernet port, USB client port at HMI and Micro-SD.
- Allows the use of USB memory sticks for trouble-free application updates

- Supports over 250 industrial communication protocols such as: SIMATIC S7-1200, BACnet MSTP/BACnet IP etc. and the driver list is growing

## More Features

**Complete Range of LCD Sizes From 3.5" to 12.1"**  
Supports a variety of LCD sizes from 3.5" to 12.1" and are highly suited for applications involving the use of PLCs

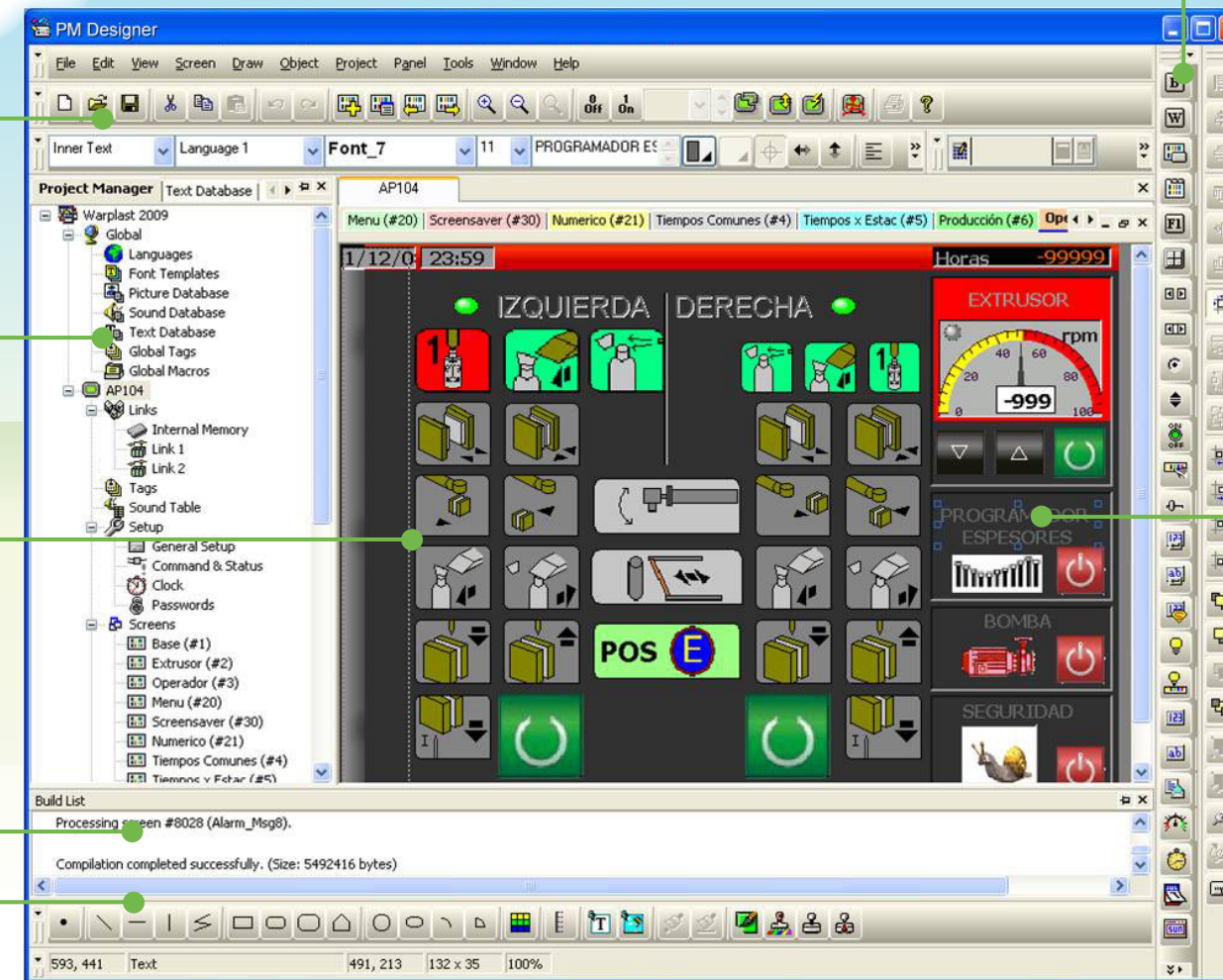
**RTC Battery Backup**  
Backup sequence programs on WOP such as history, alarm, and receipt to keep systems safe in case PLC failure

**Horizontal & Vertical Screen Orientation**  
Portrait mode selection to allow a wide variety of display modes

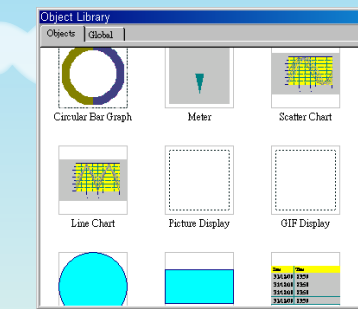
**Waterproof / IP65 Protection**  
All models support NEMA 4/ IP65 protection and 0 ~ 50°C operating temperatures

**Panel Mounting**  
Easy to install into machines with special panel mounting design

**PLC Connectivity**  
Compatible with over 250 of the most popular PLCs on the market for a variety of factory automation needs



### Object Toolbar Image Display of Registered Components

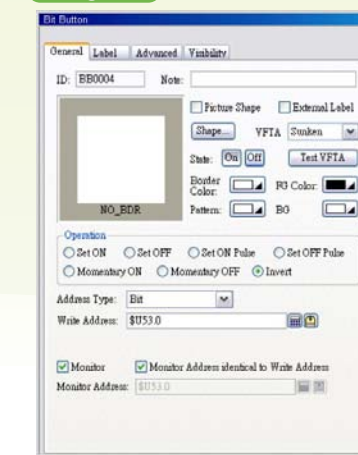


Designing screens is made easy by selecting components from the image list and putting them on the drawing screen.

### Edit Toolbar Dedicated Component Editing Screen

- A component editing screen appears by double-clicking a registered component within the library workspace.
- Editing registered components is quick and easy.

### Dialog Box



- The attribute screen is displayed by double-clicking the object or figure.
- Figure changes are immediately reflected onscreen, thereby simplifying the process and reducing setting errors.
- Easy to set the properties thru pop-up dialog box.