

Pro-face®

Industrial Personal Computer

Industrial Personal Computer and Flat Panel Monitor

PL3000 SERIES
Industrial Computers with Ultimate Expandability

PS3000 SERIES
Industrial Computers Selected for High Usability

FP3000 SERIES
DVI I/F Flat Panel monitors

WinGP
Multi-platform Runtime Engine for HMI Software "GP-Pro EX"



"Security" and "Reliability" are designed into Pro-face's high-quality products.

As a leading company in human-machine interface (HMI), Pro-face has produced industrial-use computers that integrate a touch panel monitor in a PC unit, which was offered first in the industry. Since its release, we have maintained the top market share* in Japan as a manufacturer of panel-mounted computers and programmable operator interfaces, also achieving high reputations in many production fields throughout the world. The HMI products that Pro-face advanced is further enhancing its importance as a key technology in production fields.

* Excerpt from "2009 Fuji Economic Mechatronics Parts"

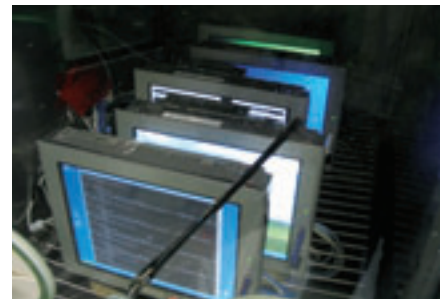


Reliable components have been carefully selected to ensure quality.

We conduct strict quality checks in our component selection, evaluation, and verification (e.g. selection of high-temperature resistant components.)

Great emphasis is placed on the quality checking of important components that are of particular concern to customers, such as power supplies and capacitors.

Storage media such as hard disks and CF cards also use only those components that have passed strict evaluation tests. We provide products ensuring quality that cannot be seen simply by comparing catalog specifications.



Immunity test for temperature change



Storage temperature/humidity cycling test



Vibration resistance test

Long-term stable supply - Windows® XP Professional EOL (License Availability) -

The provision of the Windows® XP Professional (hereinafter referred to as XP Professional) Retail Box (package for retail sales) license is discontinued in the end of June 2008. The provision of the DSP version (PC pre-installed package for direct OEMs) license is also discontinued in the end of February 2009. They are currently obtained from retailers and OEMs, yet, they are limited to stock and it is difficult to obtain XP Professional.

However, under Microsofts OEM Customer License Agreement for Embedded Systems, Pro-face can still keep obtaining the DSP version license to embed XP Professional in our products. Therefore, Pro-face guarantees continued supply of products with XP Professional embedded.

Consistent in-house design

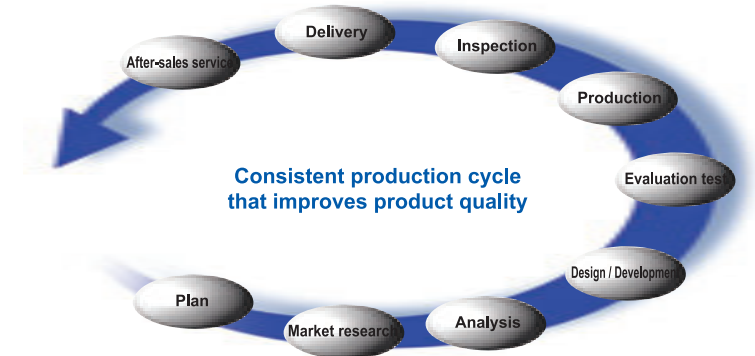
We conduct entire in-house product design, from circuit design to BIOS customization.

Since all stages from development to customer support are made internally, we can take action to identify and analyze causes of any trouble and take countermeasures by ourselves, even if trouble occurs.

This allows customers to use our products securely.



Development / production sites: Izumi Plant (Osaka, Japan)



Pro-face is always seeking out new solutions to meet our customers' future needs.

In the development of industrial computers, Pro-face is always pursuing "Reliability", "Availability" and "Serviceability".

Pro-face always offers leading-edge products, and pursues solutions that allow customers to use our products securely.



Wide range of product series for your best choice

Industrial Computer with the Ultimate in Expandability and Serviceability

PL3000 SERIES

For customers who need a high-performance IPC that enables advanced control with high reliability

High-performance industrial computers that adopt the Intel dual core CPU and 945GME chipset and incorporate a maximum of 4GB RAM in order to enhance the high speed processing capability. All models support reliable functions for 24-hour operation, such as 2 HDD with software mirroring backup.



▶ P. 7 to 10

19"

PL-3900T



15"

PL-3700T
PL-3700K



12.1"

PL-3600T
PL-3600K



Box Computer



▶ P. 9 to 10

PL-3000B



Industrial Computer Designed for Value and High Usability

PS3000 SERIES

For customers who need a slim and compact, but high-performance IPC

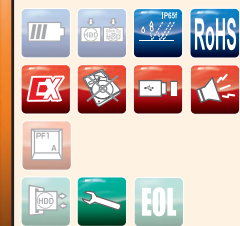
Full-fledged industrial panel computer providing cost efficient performance. This series has an abundance of features to choose from including fan-less operation model and expansion slots model.



▶ P. 11 to 16

15"

PS-3710A
PS-3711A



12.1"

PS-3650A
PS-3651A



8.4"

PS-3450A
PS-3451A



Box Computer



▶ P. 15 to 16

PS-3000B PS-3001B



DVI I/F Supported Flat Panel Monitors

FP3000 SERIES

For customers who need an industrial touch operable PC monitor with a built-in DVI interface

Industrial flat panel monitors for universal PC units. Equipped with DVI video interface for clear and secure monitoring in industrial environments and USB interface for direct connecting with peripheral devices.



▶ P. 17 to 18

19"

FP-3900T



15"

FP-3710T
FP-3710K



12.1"

FP-3650T
FP-3600T



10.4"

FP-3500T



Multi-platform HMI Software Minimize Development Time

GP-Pro EX + WinGP

"GP-Pro EX" is the software for intuitive screen development. The "WinGP" runtime engine allows GP-Pro EX for the same operation in the industrial computers PL3000 and PS3000 Series as in the GP3000 Series. It helps you dramatically reduce time for screen development for the use in different system architecture. In addition, the "WinGP" can link to a wide range of applications; therefore, it allows users to expand their own applications.



▶ P.23

Reliability No worries about trouble caused by sudden power failure, or voltage drop. ▶ P.26 Mirroring(RAID 1) function guarantees safe and secure operation. ▶ P.26 IP65f rated excellent environmental resistance against water, dust, and chemical. ▶ P.28 Environment friendly RoHS directives compliant. ▶ P.28	Availability Supports screen data of GP-Pro EX. ▶ P.23 Touch panel with keypad Easy operation available. ▶ P.9 HDD-less solution with CF card or SSD reduce disk trouble. ▶ P.25 Built-in USB I/F on the front panel of the unit. Easy maintenance to connect peripheral devices. ▶ P.27 Detects error status of PC system and alert before system broken. ▶ P.27
Serviceability Easy exchange HDD cartridges for maintenance time reduction. ▶ P.27 No worries about sudden trouble or repair. Efficient support via worldwide offices and dedicated support web. ▶ P.29 End-of-life products. ▶ P.28	

Product Lineup

Industrial Computer with the Ultimate in Expandability and Serviceability						Industrial Computer Designed for Value and High Usability	
PL3000 SERIES						PS3000 SERIES	
PL-3900T	PL-3700T	PL-3600T	PL-3700K	PL-3600K	PL-3000B	PS-3710A	PS-3711A
		Front keypad		Front keypad	Box PC		
▶P.7		▶P.9		▶P.11			
Screen Size	19"	15"	12.1"	15"	12.1"	15"	
Display Resolution	SXGA (1280 x 1024 pixels)	XGA (1024 x 768 pixels)	SVGA (800 x 600 pixels)	XGA (1024 x 768 pixels)	SVGA (800 x 600 pixels)	VGA (640 x 480 pixels) to UXGA (1600 x 1200 pixels)	
OS	Windows® 2000 Windows® XP Windows® XP Embedded					Windows® 2000 Windows® XP Windows® XP Embedded	
CPU	Core™ Duo 2.0GHz / Celeron® M440 1.86GHz					Pentium® M 1.6GHz	ULV Celeron® M 1.0GHz
Main Memory	DDR2 512MB to 4GB* <small>*Accessible memory capacity is approx. 3.5GB.</small>					DDR 256MB to 2GB	DDR 256MB to 1GB
Chip Set	Intel® 945GME + ICH7M					Intel® 855GME + ICH4	
HDD / SSD	HDD (250GB) / SSD (16GB) <S-ATA>					HDD (60GB) / SSD (16GB) <IDE>	
CF Card	1 Slot					1 Slot	
Serial(COM)	4 Ports					4 Ports	2 Ports
RAS	1 Port					1 Port	
Ethernet (LAN)	1 Port <1000BASE-T> 1 Port <100BASE-TX>					1 Port <1000BASE-T> 1 Port <100BASE-TX>	
USB	5 Ports (Front 1, Side 4)				4 Ports	5 Ports (Front 1, Bottom 4)	
PS/2	—					1 Port	
Optical Drive	DVD-ROM drive / DVD multi drive					DVD-ROM	—
FDD	—					1 drive	—
PCMCIA	—					2 Slots	
Power Supply	AC100 to 240V DC24V					AC100 to 240V DC24V	
Fanless	—					—	●
Expansion Slots	2 Slots <PCI> 4 Slots <PCI>					1 Slot <PCI>	—


Industrial Computer Designed for Value and High Usability					
PS3000 SERIES					
PS-3650A	PS-3651A	PS-3450A	PS-3451A	PS-3000B	PS-3001B
				Box PC	Box PC
▶P.13		▶P.15		▶P.15	
12.1"		8.4"		—	
XGA (1024 x 768 pixels)		SVGA (800 x 600 pixels)		VGA (640 x 480 pixels) to FULLHD (1920 x 1080 pixels)	
Windows® XP Windows® XP Embedded		Windows® 2000 Windows® XP Windows® XP Embedded		Windows® XP Windows® XP Embedded	
Celeron® M 1.5GHz	ULV Celeron® M 1.0GHz	ULV Celeron® M 1.0GHz / 600MHz	ULV Celeron® M 600MHz	ULV Celeron® M 1.0GHz	ULV Celeron® M 600MHz
DDR 256MB to 1GB					
Intel® 855GME + ICH4					
HDD(250GB) <S-ATA>		HDD(40GB) <IDE>		HDD(40GB) <IDE>	
1 Slot		2 Slots		2 Slots	
1 Port or 2 Ports		2 Ports		2 Ports	
1 Port* <small>*Excluded for the serial 2 model</small>		—		—	
1 Port <1000BASE-T> 1 Port <100BASE-TX>					
5 Ports (Front 1, Side 4)		4 Ports (Bottom 4)		4 Ports	
—		—		—	
—		—		—	
—		—		—	
1 Slot		—		—	
AC100 to 240V		—		AC100 to 240V	
DC24V		—		DC24V	
—		●		—	
—		●		—	
1 Slot <PCI>		1 Slot <PCI>		1 Slot <PCI>	

DVI I/F Supported Flat Panel Monitors					
FP3000 SERIES					
FP-3900T	FP-3710T	FP-3650T	FP-3600T	FP-3500T	FP-3710K
					Front keypad
▶P.17					
19"	15"	12.1"	10.4"	15"	
SXGA (1280 x 1024 pixels)	XGA (1024 x 768 pixels)	SVGA (800 x 600 pixels)	VGA (640 x 480 pixels)	XGA (1024 x 768 pixels)	
AC 100V to 240V			AC 100V to 240V DC24V	AC 100V to 240V DC24V	AC 100V to 240V
USB (Front) x 1 or Without USB (Front)		USB (Bottom) x 1			USB (Front) x1

Special Hardware Solutions


Open Frame Type Flat Panel Monitors

Perfectly suited for device integration



UF7811 (15" XGA)
● Model: UF7811-2-DV1-24V
TFT Color LCD

● Model: UF7811-2-DV2M-24V
UF7811-2-DV2S-24V
TFT Color LCD
(Exclusively controllable, Multi-connection)



UF5511 (10.4" VGA)
● Model: UF5511-2-1-DV1-5/12V
TFT Color LCD

Other Product Lines

Panel computer with the maximum 4 slots expansion available and is ISA bus supported

PL-7930T / 7931T
6930T / 6931T

▶ P.19

Last Order Date:
Scheduled for November 2010 *1

Panel computer with maximum 3 slots expansion available using fanless slots

PL-5910T / 5911T

▶ P.19

Last Order Date:
Scheduled for November 2010 *1

Windows® CE5.0 built-in panel computer

PS-3600G

▶ P.20

Last Order Date:
Scheduled for November 2010 *1

Built-in computer to achieve both expandability and space-saving

PS-2000B

▶ P.20

Last Order Date:
Scheduled for November 2010 *1

*1 For recommended replacement models, please visit our website.

Industrial Computer with the Ultimate in Expandability and Serviceability Heavy-duty IPC Standard Models

PL-3600T

Model: APL3600-TA (AC) / APL3600-TD (DC)

PL-3700T

Model: APL3700-TA (AC) / APL3700-TD (DC)

PL-3900T

Model: APL3900-TA (AC) / APL3900-TD (DC)

	CPU	Supported OS	Main Memory	PC/AT Standard Interfaces	Expansion Slots
<p>PL-3900T</p> <p>PL-3700T</p> <p>PL-3600T</p> <p>PL-3700K</p> <p>PL-3600K ▶ P.9</p> <p>PL-3000B</p>	<ul style="list-style-type: none"> •Core™ Duo 2.0GHz •Celeron™ M440 1.86GHz 	<ul style="list-style-type: none"> •Windows® 2000 •Windows® XP •Windows® XP ML* •Windows® XP Embedded •Windows® XP Embedded ML* 	<ul style="list-style-type: none"> •DDR2 SDRAM •4GB •2GB •1GB •512MB 	<p>Standard equipment</p> <ul style="list-style-type: none"> •CF Card x 1 •COM x 4 •Ethernet x 2 •USB x 5 <p>Options</p> <ul style="list-style-type: none"> •DVD-ROM drive x 1 •DVD multi drive x 1 	<ul style="list-style-type: none"> •4 slots •2 slots

*For languages available with the ML(Multi-language) version, see the option list on page 22.

● DVI-I ● SSD supported

Features of "PL3000 series" ▶ p.9.

High Performance Industrial Computer

For system architecture through high-speed processing of images or large capacity data.

- High performance CPU**
High performance and low energy-consuming built-in Intel® Core™ Duo processor. High-speed processing is possible thanks to the dual core CPU.
- A maximum RAM capacity of 4GB**
Up to 4GB memory capacity is available. Pursues higher performance with DDR2 standard complying memory.
- Serial ATA incorporated**
A serial ATA HDD with Max. 1.5Gbps. SSD is also available.

24-hour Continuous Operation

With our data protection function and quick maintenance features, recovery time is kept to a minimum. Regain important data lost due to device breakage or momentary stops.

- Software Mirror Utility**
The software mirror function is available for writing the data to 2 HDDs simultaneously, without any load to the CPU, and providing perfect data backup.
- HDD / SSD Cartridge**
Can reduce maintenance time with easy and quick replacement
- HotSwap**
Can replace the HDD unit without stopping the device even with the power turned ON with support for HotSwap function.

External Dimensions/Interfaces

PL-3900T	PL-3700T	PL-3600T	Parts Name
<p>*The figure shows a 2 slots model.</p> <p>2 slots : 182 [7.17] 4 slots : 234 [9.21]</p>	<p>*The figure shows a 2 slots model.</p> <p>2 slots : 166 [6.54] 4 slots : 218 [8.58]</p>	<p>*The figure shows a 2 slots model.</p> <p>2 slots : 166 [6.54] 4 slots : 218 [8.58]</p>	<ol style="list-style-type: none"> DVI-I Interface (Only the analog RGB output is supported.) Ethernet Interface (10 Base-T/100 Base-TX Auto change) Ethernet Interface (10BASE-T/100BASE-TX/1000BASE-T Auto change) Expansion Slot HDD Slot / SSD Slot (Serial ATA) USB Interface Speaker Output Interface COM Interface RAS Interface CF Card Slot (IDE Interface) Power Connector (European Terminal) Power Switch Cooling Fan Front USB Interface
<p>Panel Cut-Out Dimensions</p> <p>419.5 [16.52] 352.5 [13.88] r ≤ 3 [0.12]</p> <p>Allowable Panel Thickness: 1.6 to 10.0</p>	<p>Panel Cut-Out Dimensions</p> <p>383.5 [15.10] 282.5 [11.12] r ≤ 3 [0.12]</p> <p>Allowable Panel Thickness: 1.6 to 10.0</p>	<p>Panel Cut-Out Dimensions</p> <p>295.5 [11.63] 243.5 [9.61] r ≤ 3 [0.12]</p> <p>Allowable Panel Thickness: 1.6 to 10.0</p>	

Performance Specifications

Model	APL3900-TA	APL3900-TD	APL3700-TA	APL3700-TD	APL3600-TA	APL3600-TD	
Display Type	19"		15"		12.1"		
Display Size	SXGA (1280 x 1024 pixels)		XGA (1024 x 768 pixels)		SVGA (800 x 600 pixels)		
Display Colors	262,144 colors		262,144 colors		262,144 colors		
Graphics	SXGA (1280 x 1024 pixels)		XGA (1024 x 768 pixels)		SVGA (800 x 600 pixels)		
Backlight	CCFL (User non-replaceable parts, return system to distributor)		CCFL (Replaceable)				
Effective Display Area	W376.32 x H301.056mm [W14.82 x H11.85in.]		W306.2 x H230.1mm [W12.06 x H9.06in.]		W248.0 x H186.5mm [W9.76 x H7.34in.]		
Brightness Control	4 levels (adjusted with the software)						
Supported OS	Windows® 2000 / Windows® XP / Windows® XP Embedded						
CPU	Intel® Core™ Duo 2.0GHz / Celeron® M440 1.86GHz						
L2 Cache Memory	Intel® Core™ Duo 2.0GHz 2MB / Intel® Celeron® M440 1.86GHz 1MB(built in the CPU)						
Main Memory	DDR2 SDRAM (PC4200) 512MB / 1GB / 2GB / 4G ^{*1} (SO-DIMM x 2 slots)						
Chipset	Intel® 945GME + ICH7M						
Graphic Accelerator	Built in Intel® 945GME						
Video Memory	64MB max.(when using windows®)UMA type						
BIOS	Phoenix® TrustedCore™ BIOS						
Touch Panel Type	Resistive Film (Analog)						
Touch Panel Resolution	1024 x 1024						
Interface	Serial ATA	Serial ATA Rev.1.0a x 2		HDD or SSD			
	IDE	CF Card Slot (Type I / II) x 1(Master)		DVD Drive x 1(Slave)			
	Serial (COM1)	RS-232C (RS-232C / 422 / 485 , RI / + 5V switchable)		Connector: D-Sub 9-pin Plug			
	Serial (COM2)	RS-232C (RI / +5V switchable)		Connector: D-Sub 9-pin Plug ^{*2}			
	Serial (COM3)	RS-232C		Connector: D-Sub 9-pin Plug			
	Serial (COM4)	RS-232C		Connector: D-Sub 9-pin Plug			
	Ethernet (LAN1)	10BASE-T / 100BASE-TX / 1000BASE-T Auto change		Connector: Modular Jack (RJ-45) x 1			
	Ethernet (LAN2)	10BASE-T / 100BASE-TX Auto change		Connector: Modular Jack (RJ-45) x 1			
	USB	USB2.0		Connector: Type A x 5 (Front x 1, Side x 4)		Power Voltage: DC5V±5%, Output Current: 500mA (max.), Maximum Communication Distance: 5m	
	RAS	Input (usable as an external reset input): 2 points, Output: 2 points		Rated Voltage: DC12V Maximum Rated Current: 100mA		Input Voltage: DC12 to 24V Connector: D-Sub 9-pin Socket x 1	
	Sound	SPEAKER OUTPUT Connector: MINI-JACKφ3.5 x 1					
	Video	DVH Output ^{*3} Connector: DVI-I 29-pin Socket x 1					
	DVD Drive	DVD-ROM Drive / DVD multi drive (Optional)					

*1 Available memory capacity is approx. 3.5GB. *2 Cannot be used when a battery unit is installed. *3 Only the analog RGB output is supported.

General Specifications

Model	APL3900-TA	APL3900-TD	APL3700-TA	APL3700-TD	APL3600-TA	APL3600-TD
International Safety Standards	UL, CE, RoHS, etc.					
Comforming to Standards ^{*8}	UL508, CSA-C22.2 No.142-M1987, ANSI/ISA-12.12.01-2007 ^{*9} , CSA-C22.2 No.213-M1987 (c-UL Approval) ^{*9} , EN55011 Class A, EN61000-6-2, EN60950-1 (AC models only), 47 CFR Part 15 Class A, KCC ^{*10}					
Power Supply	Input Voltage	AC100 to 240V	DC24V	AC100 to 240V	DC24V	AC100 to 240V
	Rated Voltage Range	AC85 to 264V	DC19.2 to 28.8V	AC85 to 264V	DC19.2 to 28.8V	AC85 to 264V
	Rated Frequency	50 / 60Hz		50 / 60Hz		50 / 60Hz
	Allowable Voltage Drop	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)	5ms (max.)	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)	5ms (max.)	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)
Power Consumption	145VA (max.)	145W (max.)	145VA (max.)	145W (max.)	145VA (max.)	145W (max.)
Voltage Endurance	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC1000V 20mA for 1 minute (between charging and FG terminals)	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC1000V 20mA for 1 minute (between charging and FG terminals)	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC1000V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance	DC 500V 10MΩ (min.) (between charging and FG terminals)					
Ambient Operating Temperature	<During DVD writing, when a battery unit ^{*5} is installed> 5°C to 45°C <During DVD reading, when HDD is installed> 5 to 50°C <Without HDD> 0 to 50°C					
Storage Temperature	-20 to +60°C					
Ambient Humidity	10 to 90%RH (not Condensing, Wet bulb temperature: <With HDD / DVD> 29°C max., <Without HDD / DVD> 39°C max.)					
Storage Humidity	10 to 90%RH (not Condensing, Wet bulb temperature : 39°C max.)					
Pollution Degree	For use in Pollution Degree 2 environment max.					
Atmosphere	Free of corrosive gases					
Air Pressure Vibration Resistance (Altitude Range)	800 to 1114hPa (2000m max.)					
Vibration Resistance ^{*6}	<With HDD> 10 to 57Hz Single amplitude: 0.075mm[0.003in] 57 to 150Hz Fixed acceleration: 9.8m/s ² , X, Y, Z directions 10 cycles (for 80 minutes) <Without HDD (SSD or CF card)> IEC 61131-2 compliant 5 to 9Hz Single amplitude: 3.5mm, [0.14in] 9 to 150Hz Fixed acceleration: 9.8m/s ² , X, Y, Z directions 10 cycles (for 100 minutes)					
Noise Immunity	Noise Voltage: 1500Vp-p, Pulse width: 50ns, 500ns, 1μs, Rise Time: 1ns (via noise simulator)					
Electrostatic Discharge Immunity	Contact Discharge Method: 6kV (IEC 61000-4-2 Level 3)					
Grounding	<AC model> Protective grounding: D type (Same for FG and SG terminals) <DC model> Functional grounding: D type (Same for FG and SG terminals)					
Structure	Equivalent IP65f NEMA#250 TYPE4X / 12 (When embedding the panel and not using the front panel USB port) ^{*7}					
External Dimensions	2 slots: W460 x H390 x D182mm [W18.11 x H15.35 x D7.17in.] 4 slots: W460 x H390 x D234mm [W18.11 x H15.35 x D9.21in.]	2 slots: W425 x H325 x D168mm [W16.73 x H12.80 x D6.61in.] 4 slots: W425 x H325 x D218mm [W16.73 x H12.80 x D8.58in.]	2 slots: W338 x H286 x D168mm [W13.31 x H11.26 x D6.61in.] 4 slots: W338 x H286 x D218mm [W13.31 x H11.26 x D8.58in.]			
Weight	2 slots: 14.0kg [30.8lb] max. (Main unit only) 4 slots: 15.0kg [33.0lb] max. (Main unit only)	2 slots: 12.0kg [26.4lb] max. (Main unit only) 4 slots: 13.0kg [28.6lb] max. (Main unit only)	2 slots: 8.0kg [17.6lb] max. (Main unit only) 4 slots: 9.0kg [19.8lb] max. (Main unit only)			
Cooling Method	Forced Air Cooling by the CPU fan					

*4 A UL approval number is different from a normal approval number when a battery unit is installed, or a battery unit and a DVD drive unit are installed. For details, see the manual.

*5 A battery unit can be installed only in the AC power supply 4-slot model.

*6 The maximum vibration characteristic value during DVD drive operation is 1.96m/s². When using panel cutout conversion installation fasteners, the half amplitude is 0.0375mm with HDD and the constant acceleration is 4.9m/s².

*7 Meets applicable testing requirements. Operation is not, however, guaranteed in every environment. *8 Note that the built-in battery unit type has different compliance standards.

*9 Suitable for use in Class I, Division 2, Groups A, B, C, and D Hazardous Locations only. *10 AC models only.

Expansion Slots

Item	2 slot	4 slot	Board size
1st slot	PCI Rev.2.3 (5V)	PCI Rev.2.3 (5V)	180 x 106.68mm [7.09 x 4.20in.]
2nd slot	PCI Rev.2.3 (5V)	PCI Rev.2.3 (5V)	180 x 106.68mm [7.09 x 4.20in.]
3rd slot	PCI Rev.2.3 (5V)	PCI Rev.2.3 (5V)	255 x 106.68mm [10.04 x 4.20in.]
4th slot	PCI Rev.2.3 (5V)	PCI Rev.2.3 (5V)	255 x 106.68mm [10.04 x 4.20in.]
Power Supply ^{*8}	DC5V: 2.0A, DC12V: 1.0A, DC-12V: 0.1A, DC3.3V: 1.0A	DC5V: 4.0A, DC12V: 1.0A, DC-12V: 0.1A, DC3.3V: 2.0A	

*8 Maximum power supply is 35W for PL-3900T, and 40W for other models.

Certificate Download Service

International Safety Standards and the guarantee of the compatibility for EU RoHS directives

Easily find individual product certifications and quickly obtain the necessary documentation for customers, safety inspections, and insurance.

<http://www.pro-face.com/otasuke/certificate/>



Industrial Computer with the Ultimate in Expandability and Serviceability Heavy-duty IPC with Front Keypads & Box Models

PL-3700K
Model: APL3700-KA (AC) / APL3700-KD (DC)

15" XGA



PL-3600K
Model: APL3600-KA (AC) / APL3600-KD (DC)

12.1" SVGA



PL-3000B
Model: APL3000-BA (AC) / APL3000-BD (DC)



	CPU	Supported OS	Main Memory	PC/AT Standard Interfaces	Expansion Slots
<ul style="list-style-type: none"> PL-3700K PL-3600K PL-3000B PL-3900T PL-3700T ▶ p.7 PL-3600T 	<ul style="list-style-type: none"> •Core™ Duo 2.0GHz •Celeron® M440 1.86GHz 	<ul style="list-style-type: none"> •Windows® 2000 •Windows® 2000 ML* (for PL3000-B with Celeron® with M440 only) •Windows® XP •Windows® XP ML* •Windows® XP Embedded •Windows® XP Embedded ML* 	<ul style="list-style-type: none"> DDR2 SDRAM •4GB •2GB •1GB •512MB 	<p>Standard equipment</p> <ul style="list-style-type: none"> CF Card x 1 COM x 4 Ethernet x 2 USB x 5 (4 for PL-3000B) <p>Options</p> <ul style="list-style-type: none"> •DVD-ROM drive x 1 •DVD multi drive x 1 	<ul style="list-style-type: none"> •4 slots •2 slots

*For languages available with the ML(Multi-language) version, see the option list on page 22.

Battery
 Mirroring
 IP65F
 RoHS
 WinGP
 Diskless
 Front USB
 RAS Function
 Keypad
 HDD Cartridge

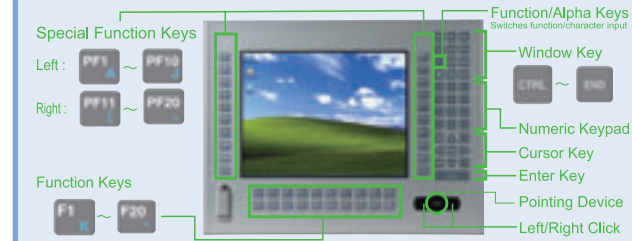
● DVH ● SSD supported

Features of "PL3000 series" ▶ p.7

Single unit integrating front keypads, mouse, and display with an industrial PC.

Membrane keypad on the front panel secures data input in harsh industrial environments.

- Customizable special function keys.
- Built-in Front USB port.



Optional battery unit ▶ p.26

Enables secure operations, even with a sudden power failure. The battery unit can prevent trouble that may arise during a power failure or an unstable voltage situation. The attachable unit is built into the body of PC. No additional space is needed.

Designed on a common platform

When a customer needs different models, the common hardware platform can minimize evaluation work.

External Dimensions/Interfaces

Model	PL-3700K	PL-3600K	PL-3000B	PL-3000B
Dimensions	488 [19.21] x 367 [14.45] x 10 [0.39] (depth)	425 [16.73] x 325 [12.80] x 10 [0.39] (depth)	289 [11.38] x 277 [10.91] x 12 [0.47] (depth)	289 [11.38] x 277 [10.91] x 12 [0.47] (depth)
Weight	2 slots: 166 [6.54] max. (Main unit only) 4 slots: 218 [8.58] max. (Main unit only)	2 slots: 166 [6.54] max. (Main unit only) 4 slots: 218 [8.58] max. (Main unit only)	2 slots: 11.0kg [24.2lb] max. (Main unit only) 4 slots: 12.0kg [26.4lb] max. (Main unit only)	2 slots: 11.0kg [24.2lb] max. (Main unit only) 4 slots: 12.0kg [26.4lb] max. (Main unit only)
Panel Cut-Out Dimensions	441.5 ± 0.1 [17.38 ± 0.04] x 313.5 ± 0.1 [12.34 ± 0.04] x 10 [0.39] (depth)	383.5 ± 0.1 [15.10 ± 0.04] x 282.5 ± 0.1 [11.12 ± 0.04] x 10 [0.39] (depth)	243 [9.57] x 176 [6.93] x 12 [0.47] (depth)	243 [9.57] x 176 [6.93] x 12 [0.47] (depth)
Parts Names	<ul style="list-style-type: none"> ① DVH Interface (Only the analog RGB output is supported for models other than PL3000B.) ② Ethernet Interface (10 Base-T/100 Base-TX Auto change) ③ Ethernet Interface (10BASE-T/100BASE-TX/1000BASE-T Auto change) ④ Expansion Slot ⑤ HDD / SSD Slot (Serial ATA) ⑥ USB Interface ⑦ Speaker Output Interface ⑧ COM Interface ⑨ RAS Interface ⑩ CF Card Slot (IDE Interface) ⑪ Power Connector (European Terminal) ⑫ Power Switch ⑬ Cooling Fan ⑭ Front USB Interface ⑮ Battery Unit (Optional) 			

Performance Specifications

Model	APL3700-KA	APL3700-KD	APL3600-KA	APL3600-KD	APL3000-BA	APL3000-BD
Display Type	TFT Color LCD		12.1"		15"	
Display Size	15"		12.1"		15"	
Display Colors	262,144 colors		12.1"		15"	
Graphics	XGA (1024 x 768 pixels)		SVGA (800 x 600 pixels)		VGA (640 x 480 pixels) to UXGA (1600 x 1200 pixels)	
Backlight	CCFL (Replaceable)					
Effective Display Area	W306.2 x H230.1mm [W12.06 x H9.06in.]		W248.0 x H186.5mm [W9.76 x H7.34in.]			
Brightness Control	4 levels (adjusted with the software)					
Supported OS	Windows® 2000 / Windows® XP / Windows® XP Embedded					
CPU	Intel® Core™ Duo 2.0GHz / Celeron® M440 1.86GHz					
L2 Cache Memory	Intel® Core™ Duo 2.0GHz 2MB / Intel® Celeron® M440 1.86GHz 1MB (built in the CPU)					
Main Memory	DDR2 SDRAM (PC2400) 512MB / 1GB / 2GB / 4GB (SO-DIMM x 2 slots)*1					
Chipset	Intel® 945GME + ICH7M					
Graphic Accelerator	Built in Intel® 945GME					
Video Memory	64MB max.(when using windows®)UMA type					
BIOS	Phoenix® TrustedCore™ BIOS					
Touch Panel Type	Resistive Film (Analog)					
Touch Panel Resolution	1024 x 1024					
No. of Key Switches	74					
Key Switch Type	Membrane Switch					
Serial ATA	Serial ATA Rev.1.0a x 2		HDD or SSD			
IDE	CF Card Slot (Type I / II) x 1 (Master)		DVD Drive x 1 (Slave)			
Serial (COM1)	RS-232C (RS-232C / 422 / 485, RI / +5V switchable)		Connector: D-Sub 9-pin Plug			
Serial (COM2)	RS-232C (RI / +5V switchable)		Connector: D-Sub 9-pin Plug*2			
Serial (COM3)	RS-232C		Connector: D-Sub 9-pin Plug			
Serial (COM4)	RS-232C		Connector: D-Sub 9-pin Plug			
Ethernet (LAN1)	10BASE-T / 100BASE-TX / 1000BASE-T Auto change Connector: Modular Jack (RJ-45) x 1					
Ethernet (LAN2)	10BASE-T / 100BASE-TX Auto change Connector: Modular Jack (RJ-45) x 1					
USB	USB2.0 Connector: Type A x 5 (Front x 1, Side x 4) Power Voltage: DC5V ±5%, Output Current: 500mA (max.), Maximum Communication Distance: 5m		USB2.0 Connector: Type A x 4 (Side x 4) Power Voltage: DC5V ±5%, Output Current: 500mA (max.), Maximum Communication Distance: 5m			
RAS	Input (usable as an external reset input): 2 points, Output: 2 points, Rated Voltage: DC12V Maximum Rated Current: 100mA Input Voltage: DC12 to 24V Connector: D-Sub 9-pin socket x 1					
Sound	SPEAKER OUTPUT Connector: MINI-JACK#3.5 x 1					
Video	DVH Output Connector: DVH 29-pin Socket*3 x 1					
DVD Drive	DVD-ROM Drive / DVD multi drive (Optional)					

*1 Available memory capacity is approx. 3.5GB. *2 Cannot be used when a battery unit is installed. *3 Only the analog RGB output is supported in other models than PL-3000B.

General Specifications

Model	APL3700-KA	APL3700-KD	APL3600-KA	APL3600-KD	APL3000-BA	APL3000-BD
International Safety Standards	UL, UL, CE		UL, UL, CE		UL, UL, CE	
Comforming to Standards*8	UL508, CSA-C22.2, No.142-M1987, ANSI/ISA-12.12.01-2007*9, CSA-C22.2 No.213-M1987(c-UL Approval)*9, EN55011 Class A, EN61000-6-2, EN60950-1(AC models only)				UL508, CSA-C22.2, No.142-M1987, ANSI/ISA-12.12.01-2007*9, CSA-C22.2 No.213-M1987(c-UL Approval)*9, EN55011 Class A, EN61000-6-2, EN60950-1(AC models only), 47 CFR Part 15 Class A, KCC*10	
Power Supply	Rated Voltage	AC100 to 240V	DC24V	AC100 to 240V	DC24V	AC100 to 240V
	Rated Voltage Range	AC85 to 264V	DC19.2 to 28.8V	AC85 to 264V	DC19.2 to 28.8V	AC85 to 264V
	Rated Frequency	50 / 60Hz		50 / 60Hz		50 / 60Hz
	Allowable Voltage Drop	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)	5ms (max.)	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)	5ms (max.)	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)
Power Consumption	145VA (max.)	145W (max.)	145VA (max.)	145W (max.)	2 slots: 120VA (max.) 4 slots: 145VA (max.)	2 slots: 120W (max.) 4 slots: 145W (max.)
Voltage Endurance	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC1000V 20mA for 1 minute (between charging and FG terminals)	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC1000V 20mA for 1 minute (between charging and FG terminals)	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC1000V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance	DC500V 10MΩ (min.) (between charging and FG terminals)					
Ambient Operating Temperature	<During DVD writing, when a battery unit*5 is installed> 5 to 45°C		<During DVD reading, when HDD is installed> 5 to 50°C		<Without HDD> 0 to 50°C	
Storage Temperature	-20 to +60°C					
Ambient Humidity	10 to 90%RH (not Condensing, Wet bulb temperature: <With HDD> 29°C max., <Without HDD> 39°C max.)					
Storage Humidity	10 to 90%RH (not Condensing, Wet bulb temperature : 39°C max.)					
Pollution Degree	For use in Pollution Degree 2 environment max.					
Atmosphere	Free of corrosive gases					
Air Pressure Vibration Resistance (Altitude Range)	800 to 1114hPa (2000m max.)					
Vibration Resistance*6	<With HDD> 10 to 57Hz Single Amplitude: 0.075mm[0.003in.] 57 to 150Hz Fixed acceleration: 9.8m/s², X, Y, Z directions 10 cycles (for 80 minutes) <Without HDD (SSD or CF card)> IEC 61131-2 compliant 5 to 9Hz Single amplitude: 3.5mm, [0.14in.] 9 to 150Hz Fixed acceleration: 9.8m/s², X, Y, Z directions 10 cycles (for 100 minutes)					
Noise Immunity	1500Vp-p, Pulse width: 50ns, 500ns, 1µs, Rise Time: 1ns (via noise simulator)					
Electrostatic Discharge Immunity	Contact Discharge Method: 6kV (IEC 61000-4-2 Level 3)					
Grounding	<AC model> Protective grounding: D type (Same for FG and SG terminals) <DC model> Functional grounding: D type (Same for FG and SG terminals)					
Structure	Equivalent IP65F NEMA#250 TYPE4X / 12 (When embedding the panel and not using the front panel USB port.)					
External Dimensions	2 slots: W488 x H367 x D166mm [W19.21 x H14.45 x D6.54in.] 4 slots: W488 x H367 x D218mm [W19.21 x H14.45 x D8.58in.]		2 slots: W425 x H325 x D166mm [W16.73 x H12.80 x D6.54in.] 4 slots: W425 x H325 x D218mm [W16.73 x H12.80 x D8.58in.]		2 slots: W243 x H125.5 x D277mm [W9.57 x H4.94 x D10.91in.] 4 slots: W243 x H176.5 x D277mm [W9.57 x H6.95 x D10.91in.]	
Weight	2 slots: 13.0kg [28.6lb] max. (Main unit only) 4 slots: 14.0kg [30.8lb] max. (Main unit only)		2 slots: 11.0kg [24.2lb] max. (Main unit only) 4 slots: 12.0kg [26.4lb] max. (Main unit only)		2 slots: 6.0kg [13.2lb] max. (Main unit only) 4 slots: 7.5kg [16.5lb] max. (Main unit only)	
Cooling Method	Forced Air Cooling by the CPU fan*7					

*4 A UL approval number is different from a normal approval number when a battery unit is installed, or a battery unit and a DVD drive unit are installed. For details, see the manual.

*5 A battery unit can be installed only in the AC power supply 4-slot model. *6 The maximum vibration characteristic value during DVD drive operation is 1.96m/s²

*7 Meets applicable testing requirements. Operation is not, however, guaranteed in every environment. *8 Note that the built-in battery unit type has different compliance standards.

*9 Suitable for use in Class I, Division 2, Groups A, B, C, and D Hazardous Locations only. *10 AC models only.

Expansion Slots

Item	2 slot	4 slot	Board size
1st slot	PCI Rev.2.3 (5V)	PCI Rev.2.3 (5V)	180 x 106.68mm [7.09 x 4.20in.]
2nd slot	PCI Rev.2.3 (5V)	PCI Rev.2.3 (5V)	180 x 106.68mm [7.09 x 4.20in.]
3rd slot		PCI Rev.2.3 (5V)	255 x 106.68mm [10.04 x 4.20in.]
4th slot		PCI Rev.2.3 (5V)	255 x 106.68mm [10.04 x 4.20in.]
Power Supply	DC5V: 2.0A, DC12V: 1.0A, DC-12V: 0.1A, DC3.3V: 1.0A	DC5V: 4.0A, DC12V: 1.0A, DC-12V: 0.1A, DC3.3V: 2.0A	

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Industrial Computer for Value and High Usability Slim and Compact, but High Performance IPC with 15" Display



PS-3710A (All-in-one)
Model: PS3710A-T42 (AC) / PS3710A-T42-24V (DC)

PS-3711A (Thin & Fan-less)
Model: PS3711A-T42 (AC) / PS3711A-T42-24V (DC)

	CPU	Supported OS	Main Memory	PC/AT Standard Interfaces	Fanless	Expansion Slots
PS-3710A (All-in-one)	Pentium® M 1.6GHz	•Windows® 2000 •Windows® 2000 ML* •Windows® XP •Windows® XP ML* •Windows® XP Embedded •Windows® XP Embedded ML*	DDR +2GB +1GB +512MB +256MB	CF Card x 1 COM x 4 Ethernet x 2 USB x 5 PS/2 x 1 DVD-ROM x 1 FDD x 1 PCMCIA x 2 RAS x 1	—	1 slot
PS-3711A (Thin & Fan-less)	ULV Celeron® M 1.0GHz	•Windows® 2000 •Windows® 2000 ML* •Windows® XP •Windows® XP ML* •Windows® XP Embedded •Windows® XP Embedded ML*	DDR +1GB +512MB +256MB	CF Card x 1 COM x 2 Ethernet x 2 USB x 5 PS/2 x 1 PCMCIA x 2 RAS x 1	○	—

*For languages available with the ML(Multi-Language) version, see the option list on page 22.

- VESA mount compatible (PS-3711A only)
- Wake On LAN compliant (Excluding PS-3700A)
- SSD supported

Updated PS-3711A.

★Faster processing and larger data storage capacity.

<PS-3711A> CPU updated from ULV Celeron® M600MHz to **1.0GHz**.

HDD capacity has increased from 40GB to **60GB**.

★SSD unit supported

<Upgrading from PS3710A-T41, PS3711A-T41>
The panel cut-out dimensions, shapes, and interface positions are fully compatible between previous and new models. Note that, however, some parts are not compatible, especially where changes have been made. Please make sure to check operation after replacement.

For POP terminal or information terminal! Stylish stand options.*1

Special Options for PS-3711A

Rear Panel Cover (Model: CA4-CVR15-01)
Unit Stand*2 (Model: CA4-STD15-01)
Power Supply Unit (Model: CA4-PWU15-01)

*1 The PS-3711A and power supply unit does not comply with CE standards when used with the unit stand.
*2 To use the unit stand, the Rear Panel Cover (Model: CA4-CVR15-01) is necessary.

External Dimensions/Interfaces

PS-3710A	PS-3711A	Parts Names
<p>Panel Cut-Out Dimensions</p> <p>Allowable Panel Thickness: 1.6 to 10.0</p>	<p>Panel Cut-Out Dimensions</p> <p>Allowable Panel Thickness: 1.6 to 10.0</p>	<ol style="list-style-type: none"> Ethernet Interface (10 Base-T/100 Base-TX Auto change) Ethernet Interface (10BASE-T/100BASE-TX/1000BASE-T Auto change) Expansion Slot USB Interface Speaker Output Interface Mic Input Interface Line Input Interface COM Interface RAS Interface CF Card Slot DVD-ROM Drive Mouse Keyboard Interface (PS/2) FDD PCMCIA Interface Power Connector (European Terminal) Cooling Fan Front USB Interface

Performance Specifications

Model	PS3710A-T42	PS3710A-T42-24V	PS3711A-T42	PS3711A-T42-24V
Display Type	TFT Color LCD			
Display Size	15"			
Display Colors	262,144 colors			
Graphics	XGA (1,024 x 768 pixels)			
Backlight	CCFL (Replaceable)			
Dot Pitch	0.297[0.01] x 0.297mm[0.01in.]			
Effective Display Area	W304.1 x H228.1mm [M11.97 x H8.98in.]			
Brightness Control	4 levels (adjusted with the software)			
Supported OS	Windows® 2000 / Windows® XP / Windows® XP Embedded			
CPU	Intel® Pentium® M1.6GHz		Intel® ULV Celeron® M 1.0GHz	
L2 Cache Memory	1MB (Built in the CPU)		512KB (Built in the CPU)	
Main Memory	DDR SDRAM (PC2700) 256MB / 512MB / 1GB / 2GB (SO-DIMM x 2 slots)		DDR SDRAM (PC2700) 256MB / 512MB / 1GB (SO-DIMM x 1 slot)	
ChipSet	Intel® 855GME + ICH4			
Graphic Accelerator	Built in Intel® 855GME			
Video Memory	64MB max.(when using windows®)UMA type			
BIOS	Phoenix® First BIOS Embedded Pro			
Touch Panel Type	Resistive film (analog)			
Touch Panel Resolution	1024 x 1024			
IDE	HDD or SSD x 1 (primary master)*1 CF card slot (Type II) x 1 (primary slave)*1 DVD-ROM drive (secondary master)		HDD or SSD x 1 (master)*2 CF card slot (Type II) x 1 (slave)*2	
Serial (COM1)	RS-232C (RI / +5V Switchable) Connector: D-Sub 9-pin plug			
Serial (COM2)	RS-232C (RI / +5V Switchable) Connector: D-Sub 9-pin plug		RS-232C (RS-232C / 422 / 485 Switchable) Connector: D-Sub 9-pin plug	
Serial (COM3)	RS-232C (RS-232C / 422 / 485 Switchable) Connector: D-Sub 9-pin plug			
Serial (COM4)	RS-232C (not available when using interface for touch panel driver) Connector: D-Sub 9-pin plug			
Ethernet (LAN1)	10BASE-T / 100BASE-TX Auto change Connector: Modular jack (RJ-45) x 1			
Ethernet (LAN2)	10BASE-T / 100BASE-TX / 1000BASE-T Auto change Connector: Modular jack (RJ-45) x 1*3			
USB	USB2.0 Connector: Type A x 5 (Front x 1, Bottom x 4) Power Voltage: DC5V ±5%, Output Current: 500mA (max.), Maximum Communication Distance: 5m			
Keyboard	PS/2, Connector: Mini-DIN 6 pin			
RAS	Input: 4 points, Output: 4 points Rated Voltage: DC24V Maximum Rated Current: 100mA External Reset Input: 1 point, Input Voltage: DC12 to 24V Connector: D-Sub 25-pin plug x 1			
Sound	SPEAKER OUT, LINE IN, MIC IN Connector: MINI-JACKφ3.5 x 3		SPEAKER OUT Connector: MINI-JACKφ3.5 x 1	
FD Drive	2-mode 3.5" floppy disk slot x 1			
DVD Drive	DVD-ROM drive x 1			
PCMCIA	PC card slot, compatible with CardBus (*ZOOMED VIDEO and SOUND functions excluded) Connector: Type II, Type III x 2			

*1 Can be switched between primary master and slave via the settings. *2 Can be switched between master and slave via the settings. *3 Wake On LAN supported.

General Specifications

Model	PS3710A-T42	PS3710A-T42-24V	PS3711A-T42	PS3711A-T42-24V
International Safety Standards				
Comforming to Standards	UL508, CSA-C22.2, No.142-M1987 (c-UL Approval), ANSIS/A-12.12.01-2007*5, CSA-C22.2 No.213-M1987 (c-UL Approval)*10, EN50111 Class A, EN61000-6-2, EN60950-1 (AC models only), 47 CFR Part 15 Class A, KCC*7			
Power Supply	Rated Voltage	AC100 to 240V	DC24V	AC100 to 240V
	Rated Voltage Range	AC85 to AC265V	DC19.2 to 28.8V	AC85 to AC265V
	Rated Frequency	50 / 60Hz	—	50 / 60Hz
	Allowable Voltage Drop	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart.)	5ms (max.)	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart.)
Power Consumption	150VA (max.)	110W (max.)	70VA (max.)	90W (max.)
Voltage Endurance	AC1,500V 20mA for 1 minute (between charging and FG terminals)	AC1,000V 20mA for 1 minute (between charging and FG terminals)	AC1,500V 20mA for 1 minute (between charging and FG terminals)	AC1,000V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance	DC 500V 10MΩ (min.) (between charging and FG terminals)			
Ambient Operating Temperature*4	<With HDD> 5°C to 50°C <Without HDD> 0°C to 50°C	<Without HDD> 0°C to 50°C	<With HDD> 5°C to 45°C <Without HDD> 0°C to 50°C	<Without HDD> 0°C to 50°C
Storage Temperature	-20°C to +60°C			
Ambient Humidity	10 to 90%RH (not Condensing, Wet bulb temperature : 29°C max.)		10 to 90%RH (not Condensing, Wet bulb temperature: <Without HDD> 39°C max., <With HDD> 29°C max.)	
Storage Humidity	10 to 90%RH (not Condensing, Wet bulb temperature : 29°C max.)			
Pollution Degree	For use in Pollution Degree 2 environment max.			
Atmosphere	Free of corrosive gases			
Air Pressure Vibration Resistance (Altitude Range)	800 to 1114hPa (2,000m or lower above sea level)			
Vibration Resistance	<With HDD> 10 to 25Hz Single amplitude: 0.075mm[0.003in.] 57 to 150Hz Fixed acceleration: 4.9m/s², X, Y, Z directions 10 cycles (for 30 minutes) <Without HDD (SSD or CF card)> IEC 61131-2 compliant 5 to 9Hz Single amplitude: 3.5mm, [0.14in] 9 to 150Hz Fixed acceleration: 9.8m/s², X, Y, Z directions 10 cycles (for 100 minutes)			
Noise Immunity	<AC model> Noise voltage: 1,500Vp-p, Pulse duration: 50ns, 500ns, 1μs, Rise time: 1ns (via noise simulator) <DC model> Noise voltage: 1,000Vp-p, Pulse duration: 50ns, 500ns, 1μs, Rise time: 1ns (via noise simulator)			
Electrostatic Discharge Immunity	6kV (IEC 61000-4-2 Level 3)			
Grounding	Functional grounding: D type (Same for FG and SG terminals)			
Structure	Equivalent IP65f NEMA#250 TYPE4X / 12 (When embedding the panel and not using the front panel USB port.)*5			
External Dimensions	W395 x H294 x D100mm[W15.55 x H11.57 x D3.94in.]		W395 x H294 x D60mm[W15.55 x H11.57 x D2.36in.]	
Weight	8kg[17.6lb] max. (main unit only)		6kg[13.2lb] max. (main unit only)	
Cooling Method	Forced air cooling by the CPU fan			

*4 *Ambient Operating Temperature* indicates the cabinet interior temperature or panel face temperature. *5 Meets the appropriate test requirements for compatibility. Note that operation is not guaranteed in every environment.
*6 Suitable for use in Class I, Division 2, Groups A, B, C, and D Hazardous Locations only. *7 AC models only.

Expansion Slots

Item	PS-3710A / PS-3700A	Board size
1st slot	PCI Rev.2.2 (5V)	235 x 106.68mm [9.25 x 4.20in.]
Power Supply	DC5V: 1.5A, DC12V: 0.5A, DC-12V: 0.1A, DC3.3V: 0.5A	

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Industrial Computer Designed for Value and High Usability Compact and Efficient operability with 12.1" XGA Display



PS-3651A (Thin & Fan-less)
Model: PS3651A-T42 (AC / COM x 1, RAS x 1) / PS3651A-T42-24V (DC / COM x 1, RAS x 1) / PS3651A-T42S (AC / COM x 2) / PS3651A-T42S-24V (DC / COM x 2)

PS-3650A (1-slot)
Model: PS3650A-T42 (AC / COM x 1, RAS x 1) / PS3650A-T42-24V (DC / COM x 1, RAS x 1) / PS3650A-T42S (AC / COM x 2) / PS3650A-T42S-24V (DC / COM x 2)

	CPU	Supported OS	Main Memory	PC/AT Standard Interfaces	Fanless	Expansion Slots
PS-3650A (1-slot)	Celeron® M 1.5GHz	•Windows® XP •Windows® XP ML ^{*1}	DDR •1GB •512MB •256MB	CF Card x 1 COM x 1 or 2 Ethernet x 2 USB x 5 PCMCIA x 1 RAS x 1 or None ^{*2}	—	1 slot
PS-3651A (Thin & Fan-less)	ULV Celeron® M 1.0GHz	•Windows® XP Embedded •Windows® XP Embedded ML ^{*1}			○	—

*1 For languages available with the ML(Multi-language) version, see the option list on page 22.
*2 Excluded for COM x 2 model.



Updated PS-3650A / 3651A

★ **Faster processing and larger data storage capacity have been achieved.**

•PS-3650A> CPU upgraded from Celeron® M1.3GHz to **1.5GHz**.
•PS-3651A> CPU upgraded from ULV Celeron® M600MHz to **1.0GHz**.

HDD capacity has increased to 250GB.

★ **Use standard Serial ATA hard drive for fast operations and easy maintenance**

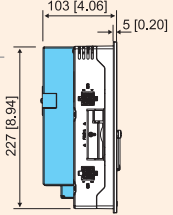
<Upgrading from PS3650A-T41, PS3651A-T41>
The panel cut-out dimensions, shapes, and interface positions are fully compatible between previous and new models. Note that, however, some parts are not compatible, especially where changes have been made. Please make sure to check operation upon replacement.

For preventing trouble caused by power failure, the battery unit can be installed even in limited space.

Special option to build in PS-3650A/3651A (AC models only. Factory built-in option only)

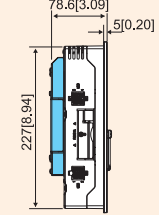
PS-3650A

Fits precisely into the PC expansion unit.



PS-3651A

A compact unit with a thickness of approx. 20mm.



*This battery uses a Ni-Cd accumulator. We work hard to ensure the protection of the environment by recycling used batteries. For details, see the manual.

External Dimensions/Interfaces

Parts Names

- Ethernet Interface (10BASE-T/100BASE-TX Auto change) (10BASE-T/100BASE-TX/1000BASE-T Auto change)
- Expansion Slot
- USB Interface
- Speaker Output Interface
- COM Interface (Can be switched using the DIP switch)
- RAS Interface (Built-in RAS model) / COM Interface (COM 2 model)
- CF Card Slot (IDE Connection)
- Power Connector (European Terminal)
- Cooling Fan
- Front USB Interface
- PCMCIA Interface

Performance Specifications

Model	PS3650A-T42	PS3650A-T42S	PS3650A-T42-24V	PS3650A-T42S-24V	PS3651A-T42	PS3651A-T42S	PS3651A-T42-24V	PS3651A-T42S-24V	
Display Type	TFT Color LCD								
Display Size	12.1"								
Display Colors	262,144 colors								
Graphics	XGA (1024 x 768 pixels)								
Backlight	CCFL (Replaceable)								
Effective Display Area	W245.76 x H184.32mm [W9.68 x H7.26in.]								
Brightness Control	4 levels (adjusted with the software)								
Supported OS	Windows® XP / Windows® XP Embedded								
CPU	Intel® Celeron® M 1.5GHz				Intel® ULV Celeron® M 1.0GHz				
L2 Cache Memory	1MB (Built in the CPU)				512KB (Built in the CPU)				
Main Memory	DDR SDRAM (PC2700) 256MB / 512MB / 1GB (SO-DIMM x 1 slot)								
Chipset	Intel® 855GME+ICH4								
Graphic Accelerator	Built in Intel® 855GME								
Video Memory	64MB max.(when using windows®)UMA type								
BIOS	Phoenix First BIOS Embedded Pro								
Touch Panel Type	Resistive Film (Analog)								
Touch Panel Resolution	1024 x 1024								
Interface	Serial ATA	Serial ATA Rev. 1.0 x 1 HDD							
	IDE	CF Card Slot (TypeII) x1							
	Serial (COM1)	RS-232C (RS-232C / 422 / 485 , RI / +5V switcheable) Connector: D-Sub 9-pin plug							
	Serial (COM2) ^{*2}	RS-232 (RI / +5V switcheable) Connector: D-Sub 9 pin plug							
	Ethernet (LAN1)	10 BASE-T / 100 BASE-TX Auto change Connector: Modular Jack (RJ-45) x 1 ^{*1}							
	Ethernet (LAN2)	10 BASE-T / 100 BASE-TX / 1000 BASE-T Auto change Connector: Modular Jack (RJ-45) x 1 ^{*1}							
	USB	USB2.0 Connector: USB Type A x 4 (Side Slot x 4), USB1.1 Connector: USB Type A x 1 (Front Slot x 1) Power Voltage: DC5V ±5%, Output Current: 500mA (max.), Maximum Communication Distance: 5m							
	RAS ^{*3}	Input (usable as an external reset input): 2 points, Output: 2 points, Rated Voltage: DC12V, Maximum Rated Current: 100mA Input Voltage: DC12 to 24V Connector: D-Sub 9-pin socket x 1							
	Sound	SPEAKER OUTPUT Connector: MINI-JACK#3.5 x 1							
	PCMCIA	PC card slot, compatible with CardBus (*Zoomed Video and Sound functions excluded) Connector: Type II x 1							

*1 Wake On LAN supported. *2 The COM2 serial interface is incorporated only in the serial 2 model.

*3 The RAS interface is equipped only on the built-in RAS I/F model.

General Specifications

Model	PS3650A-T42	PS3650A-T42S	PS3650A-T42-24V	PS3650A-T42S-24V	PS3651A-T42	PS3651A-T42S	PS3651A-T42-24V	PS3651A-T42S-24V	
International Safety Standards	UL, CE, RoHS								
Comforming to Standards	UL508, CSA-C22.2 No.142-M1987, EN55011 Class A, EN61000-6-2, EN60950 (AC models only), 47 CFR Part 15 Class A, KCC ^{*6}								
Power Supply	Rated Voltage	AC100 to 240V	DC24V	AC100 to 240V	DC24V	AC100 to 240V	DC24V	AC100 to 240V	
	Rated Voltage Range	AC85 to 264V	DC19.2 to 28.8V	AC85 to 264V	DC19.2 to 28.8V	AC85 to 264V	DC19.2 to 28.8V	AC85 to 264V	
	Rated Frequency	50 / 60Hz	—	50 / 60Hz	—	50 / 60Hz	—	50 / 60Hz	
	Allowable Voltage Drop	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)		5ms (max.)	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)		5ms (max.)	5ms (max.)	
	Power Consumption	110VA (max.)	80W (max.)	95VA (max.)	40W (max.)	110VA (max.)	80W (max.)	95VA (max.)	40W (max.)
Voltage Endurance	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC1000V 20mA for 1 minute (between charging and FG terminals)	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC1000V 20mA for 1 minute (between charging and FG terminals)	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC1000V 20mA for 1 minute (between charging and FG terminals)	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC1000V 20mA for 1 minute (between charging and FG terminals)	
Insulation Resistance	DC 500V 10MΩ (min.) (between charging and FG terminals)								
Ambient Operating Temperature	<With HDD> 5 to 50°C	<Without HDD> 0 to 50°C	<With HDD> 5 to 45°C	<Without HDD> 0 to 50°C	<With HDD> 5 to 45°C	<Without HDD> 0 to 50°C	<With HDD> 5 to 45°C	<Without HDD> 0 to 50°C	
Storage Temperature	-20 to +60°C								
Ambient Humidity	10 to 90%RH (not Condensing, Wet bulb temperature: <Without HDD> 39°C max., <With HDD> 29°C max.)								
Storage Humidity	10 to 90%RH (not Condensing, Wet bulb temperature : 39°C max.)								
Pollution Degree	For use in Pollution Degree 2 environment max.								
Atmosphere	Free of corrosive gases								
Air Pressure Vibration Resistance (Altitude Range)	800 to 1114hPa (2000m max.)								
Vibration Resistance	<With HDD> 10 to 57Hz Single amplitude: 0.0375mm[0.003in] 57 to 150Hz Fixed acceleration: 4.9m/s², X, Y, Z directions 10 cycles (for 80 minutes) <Without HDD (SSD or CF card)> IEC 61131-2 compliant 5 to 9Hz Single amplitude: 3.5mm, [0.14in] 9 to 150Hz Fixed acceleration: 9.8m/s², X, Y, Z directions 10 cycles (for 100 minutes)								
Noise Immunity	Noise voltage: 1,500Vp-p, Pulse duration: 50ns, 500ns, 1μs, Rise time: 1ns (via noise simulator)								
Electrostatic Discharge Immunity	6kV (IEC/EN 61000-4-2 Level 3)								
Grounding	Functional grounding: D type (Same for FG and SG terminals)								
Structure	Equivalent IP65f NEMA#250 TYPE4X / 12 (When embedding the panel and not using the front panel USB port.) ^{*4}								
External Dimensions	W313 x H239 x D103mm [W12.32 x H9.41 x D4.06in.] ^{*5}				W313 x H239 x D60mm [W12.32 x H9.41 x D2.36in.] ^{*5}				
Weight	4.5kg [9.9lb] max. (Main unit only)				3.8kg [8.4lb] max. (Main unit only)				
Cooling Method	Forced Air Cooling by the CPU fan				Natural Air Cooling				

*4 Meets applicable testing requirements operation is not, however, guaranteed in every environment. *5 External dimensions when the battery unit is used: W313 x H239 x D78.6mm [W12.32 x H9.41 x D3.09in.]

*6 AC models only.

Expansion Slots

Item	PS-3650A	Board size
1st slot	PCI Rev.2.2 (5V)	174.63 x 106.68mm [6.88 x 4.20in.]
Power Supply	DC5V: 1.5A, DC12V: 0.5A, DC-12V: 0.1A, DC3.3V: 0.5A	

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Operation with 8.4" Display

PS-3450A (1-slot)
Model: PS3450A-T41 (AC) /
PS3450A-T41-24V (DC)

PS-3451A (Thin & Fan-less) Model: PS3451A-T41-24V (DC)

PS-3001B (Thin & Fan-less) Model: PS3001-BD(DC)

PS-3000B (1-Slot)
Model: PS3000-BA (AC)

	CPU	Supported OS	Main Memory	PC/AT Standard Interfaces	Fanless	Expansion Slots
PS-3450A (AC)	ULV Celeron® M 1.0GHz	•Windows® 2000 •Windows® 2000 ML* •Windows® XP •Windows® XP ML*	DDR •1GB •512MB •256MB	CF Card X 2 COM X 2 Ethernet X 2 USB X 4 Analog RGB X 1 (PS3000B / 3001B only)	—	1 slot
PS-3450A (DC)	ULV Celeron® M 600MHz	•Windows® XP Embedded •Windows® XP Embedded ML*				
PS-3451A	ULV Celeron® M 1.0GHz	Windows® XP / XP ML / XPE / XPE ML			—	1 slot
PS-3000B	ULV Celeron® M 600MHz	Windows® XPE / XPE ML			—	—

*For languages available with the ML(Multi-Language) version, see the option list on page 22.

● VESA mount compatible (75 mm x 75 mm pitch, fastened with M4 screws PS-3451A only)
● Wake On LAN compliant.

2 slots of CF Card I/F as Standard

2 built-in CF Card slots as a standard product are equipped. Best fit for environment product. Use one CF Card for OS (Windows® XP Embedded) and use the other for data storage.

▶ **CF Card (XP Embedded) + CF Card**

CF Cards are much more reliable than standard hard drives with rotating media. Use them to run your applications. Data can be saved on the secondary CF Card until it is transferred to a server via a network connection.

Protected to prevent writing to CF

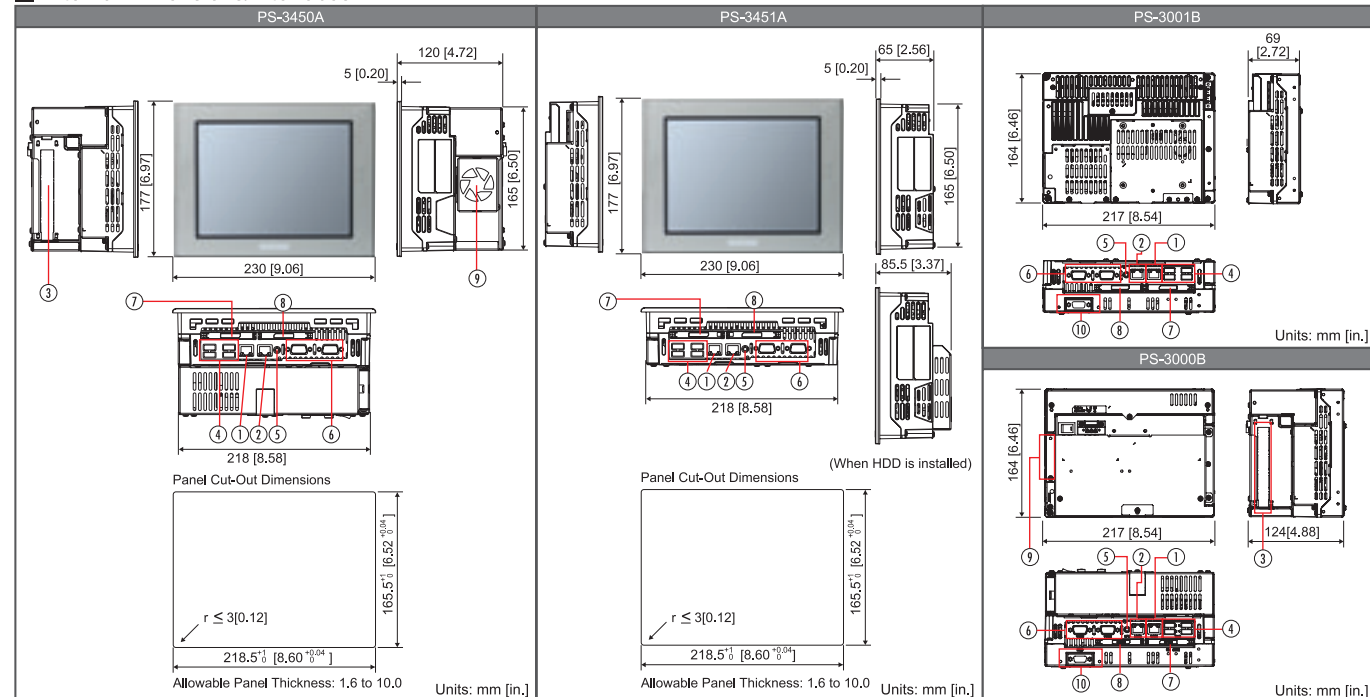
▶ **CF Card (XP Embedded) + HDD**

Use a CF Card with a standard hard drive to combine stable system construction with large data storage capacity.

Protected to prevent writing to CF

▶ **HDD only**
Use a standard hard drive for applications that require large data storage capacity.

External Dimensions/Interfaces



- | | | | |
|---|----------------------------|--|------------------------|
| ① Ethernet Interface (10 Base-T/100 Base-TX Auto change) | ③ Expansion Slot | ⑥ COM Interface | ⑨ Cooling Fan |
| ② Ethernet Interface (10BASE-T/100BASE-TX/1000BASE-T Auto change) | ④ USB Interface (USB) | ⑦ CF Card Slot (IDE Connection: Primary) | ⑩ Analog RGB Connector |
| | ⑤ Speaker Output Interface | ⑧ CF Card Slot (IDE Connection: Secondary) | |

Performance Specifications

Model	PS3450A-T41	PS3450A-T41-24V	PS3451A-T41-24V	PS3000-BA	PS3001-BD
Display Type	TFT Color LCD				
Display Size	8.4"				
Display Colors	262,144 colors				
Graphics	SVGA (800 x 600 pixels)				
Backlight	CCFL (User non-replaceable parts, return system to distributor)		CCFL (Replaceable)		
Effective Display Area	W172.4 x H129.8mm [W6.79 x H5.11in.]				
Brightness Control	4 levels (adjusted with the software)				
Supported OS	Windows® 2000 / Windows® XP / Windows® XP Embedded			Windows® XP / Windows® XP Embedded	Windows® XP Embedded
CPU	Intel® ULV Celeron® M 1.0GHz		Intel® ULV Celeron® M 600MHz		
L2 Cache Memory	512KB (built in the CPU)				
Main Memory	DDR SDRAM (PC2700) 256MB / 512MB / 1GB (SO-DIMM x 1 slot)			DDR SDRAM 256MB / 512MB / 1GB (SO-DIMM x 1 slot)	
Chipset	Intel® 855GME + ICH4				
Graphic Accelerator	Built in Intel® 855GME				
Video Memory	64MB max.(when using windows®)JUMA type				
BIOS	Phoenix® First BIOS Embedded Pro				
Touch Panel Type	Resistive Film (Analog)				
Touch Panel Resolution	1024 x 1024				
Interface	IDE	2.5-inch HDD Slot x 1*1 (Primary Master)			CF Card Slot (Type I / II) x 2*1 (Primary Slave and Secondary Master)
	Serial (COM1)	RS-232C Connector: D-Sub 9-pin plug			
	Serial (COM2)	RS-232C (RS-232C / 422 / 485 RI / +5V switchable) Connector: D-Sub 9-pin plug			
	Ethernet (LAN1)	10BASE-T / 100BASE-TX Auto change Connector: Modular Jack (RJ-45) x 1			
	Ethernet (LAN2)	10BASE-T / 100BASE-TX / 1000BASE-T Auto change Connector: Modular Jack (RJ-45) x 1*2			
	USB	USB2.0 Connector: USB Type A x 4 Power Voltage: DC5V ± 5%, Output Current: 500mA (max.), Maximum Communication Distance: 5m			
	Sound	SPEAKER OUTPUT Connector: MINI-JACKφ3.5 x 1			
Video	Front 1 port. Mini D-sub 15 pin (socket).				

*1 Can switch between master and slave according to the settings. *2 Wake On LAN supported.

General Specifications

Model	PS3450A-T41	PS3450A-T41-24V	PS3451A-T41-24V	PS3000-BA	PS3001-BD
International Safety Standards	UL, CE, CB			UL, CE, CB, RoHS	
Conforming to Standards	UL508, CSA-C22.2, No.142-M1987, EN55011 Class A, EN61000-6-2, EN60950-1(AC models only), 47 CFR Part 15 Class A			UL508, CSA-C22.2, No.142-M1987, EN55011 Class A, EN61000-6-2, EN60950-1(AC models only), 47 CFR Part 15 Class A, KCC*5	
Power Supply	Rated Voltage	AC100 to 240V	DC24V	AC100 to 240V	DC24V
	Rated Voltage Range	AC85 to 264V	DC19.2 to 28.8V	AC85 to 264V	DC19.2 to 28.8V
	Rated Frequency	50 / 60Hz		50 / 60Hz	
	Allowable Voltage Drop	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)	5ms (max.)	Shorter than 1 cycle	5ms (max.)
Power Consumption	120VA (max.)	65W (max.)	40W (max.)	120VA (max.)	40W (max.)
Voltage Endurance	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC500V 20mA for 1 minute (between charging and FG terminals)	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC500V 20mA for 1 minute (between charging and FG terminals)	AC500V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance	DC 500V 10MΩ (min.) (between charging and FG terminals)				
Ambient Operating Temperature	<With HDD> 5 to 50°C <Without HDD> 0 to 50°C	<With HDD> 5 to 45°C <Without HDD> 0 to 50°C	<With HDD> 5 to 50°C <Without HDD> 0 to 50°C	<With HDD> 5 to 50°C <Without HDD> 0 to 50°C	0 to 50°C
Storage Temperature	-20 to + 60°C				
Ambient Humidity	10 to 90%RH (not Condensing, Wet bulb temperature: <Without HDD> 39°C max., <With HDD> 29°C max.)				10 to 90%RH (not Condensing, Wet bulb temperature: 39°C max.)
Storage Humidity	10% to 90%RH (not Condensing, Wet bulb temperature : 39°C max.)				
Pollution Degree	For use in Pollution Degree 2 environment max.				
Atmosphere	Free of corrosive gases				
Air Pressure Vibration Resistance (Altitude Range)	800 to 1114hPa (2000m max.)				
Vibration Resistance	<With HDD> 10 to 25Hz Single amplitude: 0.075mm[0.003in] 57 to 150Hz Fixed acceleration: 4.9m/s², X, Y, Z directions 10 cycles (for 30 minutes) <Without HDD (SSD or CF card)> IEC 61131-2 compliant 5 to 9Hz Single amplitude: 3.5mm, [0.14in] 9 to 150Hz Fixed acceleration: 9.8m/s², X, Y, Z directions 10 cycles (for 100 minutes)				IEC 61131-2 compliant 5 to 9Hz Single amplitude: 3.5mm, [0.14in] 9 to 150Hz Fixed acceleration: 9.8m/s², X, Y, Z directions 10 cycles (for 100 minutes)
Noise Immunity	Noise voltage: 1,500Vp-p, Pulse duration: 50ns, 500ns, 1μs, Rise time: 1ns (via noise simulator)				
Electrostatic Discharge Immunity	6kV (IEC 61000-4-2 Level 3)				
Grounding	Functional grounding: D type (Same for FG and SG terminals)				
Structure	Equivalent IP65F NEMA#250 TYPE4X / 12 (When embedding the panel and not using the front panel USB port.)				
External Dimensions	W230 x H177 x D120mm [W9.06 x H6.97 x D4.72in.]	W230 x H177 x D65mm [W9.06 x H6.97 x D2.56in.]	W255 x H164 x D124mm [W10.04 x H6.46 x D4.88in.]	W255 x H164 x D68.8mm [W10.04 x H6.46 x D2.71in.]	W255 x H164 x D68.8mm [W10.04 x H6.46 x D2.71in.]
Weight	4.0kg [8.8lb] max. (Main unit only)	3.5kg [7.7lb] max. (Main unit only)	3.0kg [6.6lb] max.(unit only)	2.0kg [4.4lb] max.(unit only)	2.0kg [4.4lb] max.(unit only)
Cooling Method	Forced Air Cooling by the CPU Fan	Natural Air Cooling	Forced Air Cooling by the CPU Fan	Forced Air Cooling by the CPU Fan	Natural Air Circulation

*3 Meets applicable testing requirements operation is not, however, guaranteed in every environment. *4 With HDD: W230 x H177x D85.5mm [W9.06 x H6.97 x D3.37in] *5 AC models only.

Expansion Slots

Item	PS-3450A	Board size	PS-3000-BA	Board size
1st slot	PCI Rev.2.2 (5V)	174.63 x 106.68mm [6.88 x 4.20in]	PCI Rev.2.2 (5V)	174.63 x 106.68mm [6.88 x 4.20in]
Power Supply	DC5V: 1.0A, DC12V: 0.25A, DC-12V: 0.1A, DC3.3V: 0.5A		DC5V: 1.0A, DC12V: 0.25A, DC-12V: 0.1A, DC3.3V: 0.5A	

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DVI I/F Supported Flat Panel Monitors

FP-3710K

Model: FP3710-K41-U (AC)

FP-3900T

Model: FP3900-T41-U (AC) / FP3900-T41 (AC)

FP-3710T

Model: FP3710-T42-U (AC) / FP3710-T42 (AC)

FP-3500T

Model: FP3500-T11 (AC) / FP3500-T41-24V (DC)

FP-3650T / FP3600T

Model: FP3650-T41 (AC) / FP3600-T11 (AC) / FP3600-T41-24V (DC)

	DVI-D	Analog RGB	Display Colors	USB I/F	Backlight Replacement	Front Panel
FP-3900T			16,777,216 colors	USB x 1 (Front)*	—	Rugged aluminium body
FP-3710T			16,777,216 colors	USB x 1 (Front) USB x 1 (Bottom)	—	
FP-3710K			16,777,216 colors	—	—	
FP-3650T			262,144 colors	USB x 1 (Front)	User Replacable	
FP-3600T			262,144 colors	—	—	
FP-3500T			262,144 colors	—	—	

*Non front USB type is also available

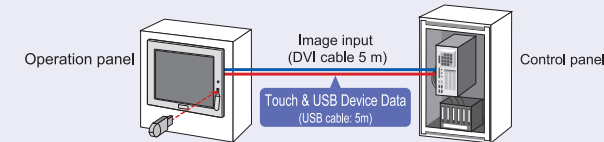
VESA mount compatible (75 mm x 75 mm pitch, fastened with M4 screws)
 RoHS Compliant
 Front USB
 Keypad Type

- VESA mount compatible (75 mm x 75 mm pitch, fastened with M4 screws)
- *For FP-3650T, FP-3600T, and FP-3500T, the optional wall-hanging adaptor is additionally required.
- DVI I/F
- USB I/F

USB interface provided.

Connect an FP unit directly to a USB device. A single USB cable for touch and data connection reduces the number of cable. Data maintenance can be realized easily without opening a cabinet.

FP-3900T / 3710T / 3710K (Front USB Type)

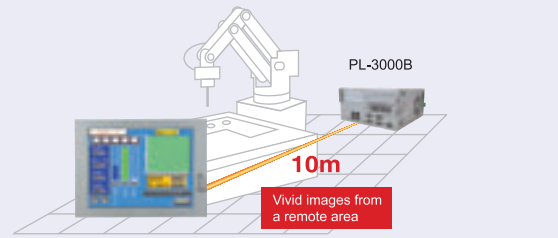


FP-3650T / 3600T / 3500T

A USB front mounting cable allows a USB interface extended to the front panel.

DVI provided as a standard feature

Use the DVI connection for high quality video images. The panel can be as far as 10m from a PL3000B or PS2000B using our dedicated cable.



External Dimensions/Interfaces

Model	FP-3900T (Front USB Model)	FP-3710T (Front USB Model)	FP-3650T / FP-3600T / FP-3500T	FP-3710K
Panel Dimensions	460 [18.11] x 390 [15.35]	395 [15.55] x 294 [11.57]	317 [12.48] x 249 [9.87]	488 [19.21] x 387 [14.45]
Panel Cut-Out Dimensions	352 [13.86] x 352.5 [13.86]	282 [11.10] x 282.5 [11.12]	227 [8.94] x 227.5 [8.94]	313 [12.32] x 313.5 [12.34]
Weight	10.0kg [22.0lb] max. (Main unit only)	7.0kg [15.4lb] max. (Main unit only)	3.5kg [7.7lb] max. (Main unit only)	8.0kg [17.6lb] max. (Main unit only)

Model	FP-3900T (Front USB Model)	FP-3710T (Front USB Model)	FP-3650T / FP-3600T / FP-3500T	FP-3710K
Panel Cut-Out Dimensions	419.5 [16.52] x 352 [13.86]	383 [15.08] x 282 [11.10]	301.5 [11.87] x 227.5 [8.94]	441 [17.36] x 313 [12.32]
Weight	10.0kg [22.0lb] max. (Main unit only)	7.0kg [15.4lb] max. (Main unit only)	3.5kg [7.7lb] max. (Main unit only)	8.0kg [17.6lb] max. (Main unit only)

Model	FP-3900T (Front USB Model)	FP-3710T (Front USB Model)	FP-3650T / FP-3600T / FP-3500T	FP-3710K
Panel Cut-Out Dimensions	419.5 [16.52] x 352 [13.86]	383 [15.08] x 282 [11.10]	301.5 [11.87] x 227.5 [8.94]	441 [17.36] x 313 [12.32]
Weight	10.0kg [22.0lb] max. (Main unit only)	7.0kg [15.4lb] max. (Main unit only)	3.5kg [7.7lb] max. (Main unit only)	8.0kg [17.6lb] max. (Main unit only)

Units: mm[in.]

Parts Names

- DVI-D Interface
- Analog RGB Interface
- USB Interface (Type A)
- USB Interface (Type B)
- RS-232C Interface
- Setting Switch (DIP switch)
- Power Connector (European Terminal)
- Front USB Interface (Type A)

Performance Specifications

Model	FP3900-T41-U	FP3900-T41	FP3710-T42-U	FP3710-T42	FP3650-T41	FP3600-T11	FP3600-T41-24V	FP3500-T11	FP3500-T41-24V	FP3710-K41-U	
Display Type	TFT Color LCD										
Display Size	19"			15"			12.1"		10.4"		15"
Display Colors	16,777,216 colors					262,144 colors					
Display Dots (Pixels)	SXGA (1280 x 1024 pixels)		XGA (1024 x 768 pixels)			SVGA (800 x 600 pixels)		VGA (640 x 480 pixels)		XGA (1024 x 768 pixels)	
Backlight	CCFL (User non-replaceable parts, return system to distributor)					CCFL (Replaceable)					
Effective Display Area	W376.32 x H301.056mm [W14.82 x H11.85in.]		W304.1 x H228.1mm [W11.97 x H8.98in.]			W245.76 x H184.32mm [W9.66 x H7.26in.]		W248.0 x H186.5mm [W9.76 x H7.34in.]		W304.1 x H228.1mm [W11.97 x H8.98in.]	
Brightness Control	Adjustment available via OSD										
Touch Panel Type	Resistive Film (Analog)										
Touch Panel Resolution	1024 x 1024										
Touch Panel Interface	RS-232C or USB2.0 (Type B) ⁴										
Number of Key Switches	—										
Key Switch Type	—										
Interface	USB ^{2.0} Connector: USB Type A x 1 Power Voltage: DC5V ±5%, Output Current: 500mA (max.), Maximum Communication Distance: 5m		USB ^{2.0} Connector: USB Type A x 1 Power Voltage: DC5V ±5%, Output Current: 500mA (max.), Maximum Communication Distance: 5m			USB ^{2.0} ² Connector: USB Type A x 1 Power Voltage: DC5V ±5%, Output Current: 500mA (max.), Maximum Communication Distance: 5m					
Video	DVI-D Input ³ Connector: DVI-D 24-pin socket ³ Analog RGB Input ³ Connector: D-SUB Shrink 15-pin socket ³										

¹ A USB device can be connected using the USB-HUB function. Connect the touch panel USB cable (Type B) to the host. ² A USB port can be set on the panel using a USB front cable (option). ³ Either one of them is used. ⁴ Mouse Emulation Software is available via our support site "Otasuke Pro!" (<http://www.pro-face.com/otasuke/>)

General Specifications

Model	FP3900-T41-U	FP3900-T41	FP3710-T42-U	FP3710-T42	FP3650-T41	FP3600-T11	FP3600-T41-24V	FP3500-T11	FP3500-T41-24V	FP3710-K41-U		
International Safety Standards	UL508, CSA-C22.2, No.142-M1987, ANSI/ISA-12.12.01-2007 ⁵ , CSA-C22.2, No.213-M1987(c-UL Approval) ⁵ , EN5011 Class A, EN61000-6-2, EN60950-1 First Edition, 47 CFR Part 15 Class A		UL508, CSA-C22.2, No.142-M1987(c-UL Approval), EN5011 Class A, EN61000-6-2, EN60950-1 First Edition, 47 CFR Part 15 Class A, KCC		UL508, CSA-C22.2, No.142-M1987(c-UL Approval), EN5011 Class A, EN61000-6-2, EN60950-1 First Edition		UL508, CSA-C22.2, No.142-M1987(c-UL Approval), EN5011 Class A, EN61000-6-2, KCC		UL508, CSA-C22.2, No.142-M1987(c-UL Approval), EN5011 Class A, EN61000-6-2, KCC		UL508, CSA-C22.2, No.142-M1987(c-UL Approval), EN5011 Class A, EN61000-6-2, KCC	
Comforming to Standards	UL508, CSA-C22.2, No.142-M1987, ANSI/ISA-12.12.01-2007 ⁵ , CSA-C22.2, No.213-M1987(c-UL Approval) ⁵ , EN5011 Class A, EN61000-6-2, EN60950-1 First Edition, 47 CFR Part 15 Class A		UL508, CSA-C22.2, No.142-M1987(c-UL Approval), EN5011 Class A, EN61000-6-2, EN60950-1 First Edition, 47 CFR Part 15 Class A, KCC		UL508, CSA-C22.2, No.142-M1987(c-UL Approval), EN5011 Class A, EN61000-6-2, EN60950-1 First Edition		UL508, CSA-C22.2, No.142-M1987(c-UL Approval), EN5011 Class A, EN61000-6-2, KCC		UL508, CSA-C22.2, No.142-M1987(c-UL Approval), EN5011 Class A, EN61000-6-2, KCC		UL508, CSA-C22.2, No.142-M1987(c-UL Approval), EN5011 Class A, EN61000-6-2, KCC	
Rated Voltage	AC100 to 240V					DC24V		AC100 to 240V		DC24V		
Power Consumption	AC100V at 1.1A (max.) AC240V at 0.7A (max.)					AC100V at 0.9A (max.) AC240V at 0.45A (max.)		2.08A (max.)		AC100V at 0.9A (max.) AC240V at 0.45A (max.)		
Allowable Voltage Drop	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)					10ms (max.)		Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)		10ms (max.)		
Voltage Endurance	AC1500V at 20mA for 1 minute (between the charging and grounding FG terminals)					AC1000V at 20mA for 1 minute (between charging and FG terminals)		AC1000V at 20mA for 1 minute (between charging and FG terminals)		AC1500V at 20mA for 1 minute (between charging and FG terminals)		
Insulation Resistance	DC 500V 10MΩ (min.) (between charging and FG terminals)											
Ambient Operating Temperature	0°C to 50°C (within 30°C from the installing angle vertical direction)											
Storage Temperature	-20 to +60°C											
Ambient Humidity	10% to 90%RH (not Condensing, Wet bulb temperature: 39°C max.)											
Storage Humidity	10% to 90%RH (not Condensing, Wet bulb temperature: 39°C max.)											
Pollution Degree	For use in Pollution Degree 2 environment max.											
Atmosphere	Free of corrosive gases											
Vibration Resistance	IEC 61131-2 compliant 5 to 9Hz Single amplitude: 3.5mm, [0.14in.] 9 to 150Hz Fixed acceleration: 9.8m/s ² , X, Y, Z directions 10 cycles (for 100 minutes)											
Noise Immunity	Noise Voltage: 1500Vp-p, Pulse Duration: 50ns, 500ns, 1μs, Rise Time: 1ns (via noise simulator)					Noise Voltage: 1000Vp-p, Pulse Duration: 1μs, Rise Time: 1ns (via noise simulator)		Noise Voltage: 1000Vp-p, Pulse Duration: 1μs, Rise Time: 1ns (via noise simulator)		Noise Voltage: 1500Vp-p, Pulse Duration: 1μs, Rise Time: 1ns (via noise simulator)		
Electrostatic Discharge Immunity	6kV (IEC 61000-4-2 Level 3)											
Grounding	<AC model> Protective grounding: D type (Same for FG and SG terminals) <DC model> Functional grounding: D type (Same for FG and SG terminals)											
Structure	Equivalent IP65 (When embedding the panel and not using the front panel USB port.) ⁵											
External Dimensions	W460 x H390 x D77.7mm [W18.11 x H15.35 x D3.06in.]		W395 x H294 x D60mm [W15.55 x H11.57 x D2.36in.]			W317 x H243 x D58mm [W12.48 x H9.57 x D2.29in.]		W488 x H367 x D63mm [W19.21 x H14.45 x D2.48in.]				
Weight	10.0kg [22.0lb] max. (Main unit only)		7.0kg [15.4lb] max. (Main unit only)			3.5kg [7.7lb] max. (Main unit only)		8.0kg [17.6lb] max. (Main unit only)				

⁵ Meets applicable testing requirements operation is not, however, guaranteed in every environment. ⁶ Suitable for use in Class I, Division 2, Groups A, B, C, and D Hazardous Locations only.

Interface Specifications

Input Signal Type	DVI-D	Analog RGB
Input Signal Characteristic	DVI-D	Image Signal: Analog RGB Synchronous Signal: TTL level, negative true or positive true Scanning Mode: Non-interlaced
Screen Adjustment Function (Setting via OSD)	CONTRAST, BRIGHTNESS, SHARPNESS, DIMMER, DEFAULT (ALL RESET) CONTRAST, BRIGHTNESS, H-POS, V-POS, H-POSITION, PHASE, DIMMER, SHARPNESS, AUTO ADJUSTMENT (DISPLAY POSITION, CONTRAST, BRIGHTNESS), DEFAULT (ALL RESET)	

Size	Available Number of Dots (pixels) Displayed											
	SXGA (FP-3900T)			XGA (FP-3650T / FP-3710T / FP-3710K)			SVGA (FP-3600T)			VGA (FP-3500T)		
	H Sync	V Sync	Dot Clock	H Sync	V Sync	Dot Clock	H Sync	V Sync	Dot Clock	H Sync	V Sync	Dot Clock
640 x 400	31.469kHz	70.000Hz	25.175MHz	640 x 400	24.827kHz	56.420Hz	21.053MHz	640 x 350 ^{7,9}	31.469kHz	70.000Hz	25.175MHz	640 x 350 ^{7,9}
640 x 480	31.469kHz	59.922Hz	25.175MHz	640 x 400	31.469kHz	70.000Hz	25.175MHz	640 x 400	24.827kHz	56.420Hz	21.053MHz	640 x 400
640 x 480	35.000kHz	66.670Hz	30.240MHz	640 x 480	31.469kHz	59.922Hz	25.175MHz	640 x 400	31.469kHz	70.000Hz	25.175MHz	640 x 400
640 x 480	37.861kHz	72.810Hz	31.500MHz	640 x 480	35.000kHz	66.670Hz	30.240MHz	640 x 480	31.469kHz	59.922Hz	25.175MHz	640 x 480
640 x 480	37.500kHz	75.000Hz	31.500MHz	640 x 480	37.500kHz	75.000Hz	31.500MHz	640 x 480	35.000kHz	66.670Hz	30.240MHz	720 x 350 ^{7,9}
720 x 400 ⁸	31.469kHz	70.000Hz	28.320MHz	720 x 400 ⁸	31.469kHz	70.000Hz	28.320MHz	640 x 480	37.861kHz	72.810Hz	31.500MHz	720 x 400 ⁸
800 x 600	35.156kHz	56.250MHz	36.000MHz	800 x 600	37.879kHz	60.317Hz	40.000MHz	720 x 350 ^{7,9}	31.469kHz	70.000Hz	28.320MHz	800 x 600
800 x 600	37.879kHz	60.317Hz	40.000MHz	800 x 600	46.875kHz	75.000Hz	49.500MHz	720 x 400 ⁸	31.469kHz	70.000Hz	28.320MHz	800 x 600
800 x 600	46.875kHz	75.000Hz	49.500MHz	800 x 600	46.875kHz	75.000Hz	49.500MHz	720 x 400 ⁸	31.469kHz	70.000Hz	28.320MHz	800 x 600
1024 x 768	48.363kHz	60.004Hz	65.000MHz	1024 x 768	48.363kHz	60.004Hz	65.000MHz	800 x 600	35.156kHz	56.250Hz	36.000MHz	800 x 600
1024 x 768	56.476kHz	70.069Hz	75.000MHz	1024 x 768	56.476kHz	70.069Hz	75.000MHz	800 x 600	37.879kHz	60.317Hz	40.000MHz	800 x 600
1024 x 768	60.023kHz	75.029Hz	78.750MHz	1024 x 768	60.023kHz	75.029Hz	78.750MHz	800 x 600	37.879kHz	60.317Hz	40.000MHz	800 x 600
1280 x 1024	63.981kHz	60.000Hz	108.000MHz	1280 x 1024	63.981kHz	60.000Hz	108.000MHz	800 x 600	37.879kHz	60.317Hz	40.000MHz	800 x 600
1280 x 1024	79.976kHz	75.000Hz	134.999MHz	1280 x 1024	79.976kHz	75.000Hz	134.999MHz	800 x 600	37.879kHz	60.317Hz	40.000MHz	800 x 600

⁷ Only for Analog RGB. ⁸ In case of vertical line, 400 lines including upper and lower 50 lines will be enlarged to 480 lines (1.2 times) ⁹ In case of vertical line, 400 lines including upper and lower 50 lines will be enlarged to 600 lines (1.5 times) ¹⁰ To display in this resolution, turn the OSD [System Settings] : [720 X 400Mode] to ON.

Certificate Download Service

International Safety Standards and the guarantee of the compatibility for EU RoHS directives

Easily find individual product certifications and quickly obtain the necessary documentation for customers, safety inspections, and insurance.

<http://www.pro-face.com/otasuke/certificate/>

PLSERIES

Industrial panel computer

Supporting up to 4 Expansion Slots and ISA Bus

Last Order Date : Scheduled for November 2010



	CPU	Supported OS	Main Memory	PC/AT Standard Interfaces	Power Supply	Fanless	Expansion Slots
PL-7930T				Standard equipment COM X 4 Ethernet X 2 USB X 3 PCMCIA X 1			PCI/ISA 4 slots
PL-7931T	•Pentium® M 1.6GHz	•Windows® 2000 •Windows® 2000ML •Windows® XP •Windows® XP ML	DDR •1GB •512MB •256MB		AC 100 to 240V	Only for Celeron® M models with the model number -T41 at the end	PCI/ISA 2 slots
PL-6930T	•Celeron® M 1.3GHz	•Windows® XP ML •Windows® XP Embedded •Windows® XP Embedded ML		Options •CF Card •CD-ROM drive			PCI/ISA 4 slots
PL-6931T							PCI/ISA 2 slots



For more details on specifications and optional items, see our website (www.proface.com).

PLSERIES

Industrial panel computer

Supporting up to 3 Expansion Slots and Fan-less Operation

Last Order Date : Scheduled for November 2010



	CPU	Supported OS	Main Memory	PC/AT Standard Interfaces	Power Supply	Fanless	Expansion Slots
PL-5910T	ULV Celeron® 650MHz	Windows® 2000 MS-DOS	SDRAM •512MB •256MB •128MB	Ethernet X 1 COM X 3 USB X 2 PS/2 X 2	•AC100V •DC24V	○	PCI/ISA 3 slots
PL-5911T							PCI/ISA 1 slot



For more details on specifications and optional items, see our website (www.proface.com).

PSERIES

Box Computer

Expandable Units in a Small Space-saving Package

Last Order Date : Scheduled for November 2010



	CPU	Supported OS	Main Memory	PC/AT Standard Interfaces	Power Supply	Expansion Slots
PS-2000B	Pentium® III 1.0GHz Celeron® 566MHz	•Windows® 2000 •Windows® 2000ML •Windows® XP •Windows® XP ML •Windows® XP Embedded •Windows® XP Embedded ML	SDRAM •512MB •256MB •128MB	Standard equipment COM X 4 Ethernet X 2 USB X 4 DVI X 1 PS/2 X 2 RGB X 1	Options •CF Card slot •CD-ROM drive •FDD	AC 100 to 240V PCI 3 slots



● Dual HDD supported *The soft-mirror function is optional.

For more details on specifications and optional items, see our website (www.proface.com).

PSERIES

Industrial panel computer

Built in Windows® CE5.0, Perfectly Suited for POP Terminal Application



	CPU	Supported OS	Main Memory	PC/AT Standard Interfaces	Power Supply
PS-3600G	PXA270 520MHz (XScale® technology built-in)	Windows® CE5.0 (Japanese / English)	128MB	CF Card slot X 1 COM X 2 Ethernet X 1 USB X 4	•AC100 to 240V •DC24V



● Built-in RDP as standard
● VESA compliance arm mounting cover, Wall-mounting fasteners, Desktop stand

For more details on specifications and optional items, see our website (www.proface.com).

Optional Items List

PL3000 SERIES

Product Name			Model No.	PL-3900T	PL-3700T	PL-3600T	PL-3700K	PL-3600K	PL-3000B	
Factory Built-in options	DIM Module DDR2	512MB	CA7-DDR2-512MB-BLD	●	●	●	●	●	●	
		1GB	CA7-DDR2-1GB-BLD	●	●	●	●	●	●	
		2GB	CA7-DDR2-2GB-BLD	●	●	●	●	●	●	
	HDD Unit	250GB	APL3000-HD250-BLD	●	●	●	●	●	●	
		16GB	APL3000-SD16-BLD	●	●	●	●	●	●	
	OS Pre-installed HDD	Core™ Duo Version	Windows® 2000	APL3000-HD250-W2K-CD-BLD	●	●	●	●	●	●
			Windows® XP	APL3000-HD250-WXP-CD-BLD	●	●	●	●	●	●
			Windows® XP ML	APL3000-HD250-WXP/ML-CD-BLD	●	●	●	●	●	●
			Windows® 2000	APL3000-HD250-W2K-CM-BLD	●	●	●	●	●	●
			Windows® 2000 ML	APL3000-HD250-W2K/ML-CM-BLD	●	●	●	●	●	●
Celeron® M Version		Windows® XP	APL3000-HD250-WXP-CM-BLD	●	●	●	●	●	●	
		Windows® XP ML	APL3000-HD250-WXP/ML-CM-BLD	●	●	●	●	●	●	
		Windows® 2000	APL3000-SD16-WXP-CD-BLD	●	●	●	●	●	●	
		Windows® XP	APL3000-SD16-WXP/ML-CD-BLD	●	●	●	●	●	●	
		Windows® XP ML	APL3000-SD16-WXP/ML-CM-BLD	●	●	●	●	●	●	
Core™ Duo Version	Windows® XP	APL3000-SD16-WXP-CD-BLD	●	●	●	●	●	●		
	Windows® XP ML	APL3000-SD16-WXP/ML-CD-BLD	●	●	●	●	●	●		
	Windows® 2000	APL3000-SD16-WXP-CM-BLD	●	●	●	●	●	●		
	Windows® XP	APL3000-SD16-WXP/ML-CM-BLD	●	●	●	●	●	●		
	Windows® XP ML	APL3000-SD16-WXP/ML-CM-BLD	●	●	●	●	●	●		
Windows® XP Embedded SP2 Supported CF card	Core™ Duo Version	ML	APL3000-XPE2G-CD-BLD	●	●	●	●	●	●	
	Celeron® M Version	ML	APL3000-XPE2G-CM-BLD	●	●	●	●	●	●	
DVD-ROM Drive Unit			APL-DVDU01-BLD	●	●	●	●	●		
DVD multi drive			APL-DVDMU-BLD	●	●	●	●	●		
Battery Unit*1,2			APL3000-BATTU-BLD	●	●	●	●	●		
Accessory Options	DIM Module DDR2	512MB	CA7-DDR2-512MB	●	●	●	●	●	●	
		1GB	CA7-DDR2-1GB	●	●	●	●	●	●	
		2GB	CA7-DDR2-2GB	●	●	●	●	●	●	
	HDD Unit	250GB	APL3000-HD250	●	●	●	●	●	●	
		16GB	APL3000-SD16	●	●	●	●	●	●	
	CF Card	128MB	CA3-CFCALL/128MB-01	●	●	●	●	●	●	
		256MB	CA3-CFCALL/256MB-01	●	●	●	●	●	●	
		512MB	CA3-CFCALL/512MB-01	●	●	●	●	●	●	
		1GB	CA6-CFCALL/1GB-01	●	●	●	●	●	●	
		2GB	CA8-CFCALL/2GB-01	●	●	●	●	●	●	
Software Mirroring Utility*1			APL-SM3000	●	●	●	●	●		
USB Front Cable	1m	CA5-USBEXT-01	●	●	●	●	●	●		
USB Cable	5m	FP-US00	●	●	●	●	●	●		
RS-232C Cable	5m	FP61V-IS00-O	●	●	●	●	●	●		
DVI-D Cable	5m	FP-DV01-50	●	●	●	●	●	●		
	10m	FP-DV01-100	●	●	●	●	●	●		
Analog RGB Cable *3	4.5m	FP-CV02-45	●	●	●	●	●	●		
DVI-I/RGB Conversion Cable	5m	CA7-CBLCVRGB-01	●	●	●	●	●	●		
DVI-D/RGB Branch Cable	15cm	CA7-CBLCVDVI-D/RGB-01	●	●	●	●	●	●		
Screen Protection Sheet (5 Sheets/set)			CA7-DFS12-01	●	●	●	●	●		
			CA3-DFS15-01	●	●	●	●	●		
			CA7-DFS19-01	●	●	●	●	●		
AC Power Connector (Right angle) (5 Sheets/set)			CA7-ACCNL-01	●	●	●	●	●		
Panel Cutout Conversion Installation Fastener (2/set for top and bottom) *5			APL3000-ATP69X0-01	●	●	●	●	●		
Battery Unit for Replacement*2,4			APL3000-BATTU	●	●	●	●	●		
Maintenance Options	Installation Gasket*6		CA7-WPG12-01	●	●	●	●	●	●	
			CA7-WPG15-01	●	●	●	●	●	●	
			CA7-WPG15K-01	●	●	●	●	●	●	
	Backlight*6		CA7-WPG19-01	●	●	●	●	●	●	
			CA3-BLU12-01	●	●	●	●	●	●	
			CA7-BLU15-01	●	●	●	●	●	●	
	Installation Fastener *6		APL-ATFB-01	●	●	●	●	●	●	
			CA3-ATFALL-01	●	●	●	●	●	●	
			CA7-ACCNL-01	●	●	●	●	●	●	
			CA7-ACCNL-01	●	●	●	●	●	●	
	DC Power Connector (Straight) (5 Sheets/set) *6		CA7-DCCNL-01	●	●	●	●	●		
	DC Power Connector (Straight) (5 Sheets/set) *6		CA7-DCCNL-01	●	●	●	●	●		

*1 The Battery Unit and the Software Mirroring Utility are supported only with the HDD Unit. *2 Can be installed only in the AC power supply and 4-slot model.
 *3 Use when using the DVI-D/RGB Branch Cable. *4 Used for a replacement of the battery unit (Model: APL3000-BATTU-BLD).
 *5 For replacement of the PL69X0 series. *6 Included in the product package. To be used for replacement.

PS3000 SERIES (PS-3710A/3711A)

Product Name			Model No.	PS3710A	PS-3711A	
Factory Built-in options	DIM Module DDR	256MB	PSA-DDR256-BLD	●	●	
		512MB	PSA-DDR512-BLD	●	●	
		1GB	PSA-DDR1G-BLD	●	●	
	HDD Unit	60GB	PS3710A-HD60P-BLD	●	●	
		16GB	PS3710A-SD16P-BLD	●	●	
	OS Pre-installed HDD Unit	Windows® 2000	Windows® 2000 ML	PS3710A-HD60P-W2K-BLD	●	●
			Windows® XP	PS3710A-HD60P-WXP-BLD	●	●
			Windows® XP ML	PS3710A-HD60P-WXP/ML-BLD	●	●
			Windows® 2000	PS3711A-HD60P-W2K-BLD	●	●
			Windows® 2000 ML	PS3711A-HD60P-W2K/ML-BLD	●	●
Windows® XP		Windows® XP	PS3711A-HD60P-WXP-BLD	●	●	
		Windows® XP ML	PS3711A-HD60P-WXP/ML-BLD	●	●	
		Windows® XP	PS3710A-SD16P-WXP-BLD	●	●	
		Windows® XP ML	PS3710A-SD16P-WXP/ML-BLD	●	●	
		Windows® XP	PS3711A-SD16P-WXP-BLD	●	●	
CF Card compatible with Windows® XP Embedded SP2	ML	PS3710A-XPE2G-BLD	●	●		
	ML	PS3711A-XPE2G-BLD	●	●		
Accessory Options	DIM Module DDR	512MB	PSA-DDR512	●	●	
		1GB	PSA-DDR1G	●	●	
		60GB	PS3710A-HD60P	●	●	
	HDD Unit	16GB	PS3710A-SD16P	●	●	
		128MB	CA3-CFCALL/128MB-01	●	●	
	CF Card	256MB	CA3-CFCALL/256MB-01	●	●	
		512MB	CA3-CFCALL/512MB-01	●	●	
		1GB	CA6-CFCALL/1GB-01	●	●	
		2GB	CA8-CFCALL/2GB-01	●	●	
			GP077-CFAD10	●	●	
CF Card Adapter			CA4-STD15-01	●	●	
Unit Stand *2			CA4-CVR15-0	●	●	
Unit Cover			CA4-CVR15-0	●	●	
Unit Power Supply *3			CA4-PWU15-01	●	●	
Screen Protection Sheet (5 Sheets/set)			CA3-DFS15-01	●	●	
Maintenance Options *1	Installation Gasket		CA3-WPG15-01	●	●	
			CA7-BLU15-01	●	●	
			CA3-ATFALL-01	●	●	
	Backlight (2/unit)		CA7-ACCNL-01	●	●	
			CA7-DCCNL-01	●	●	
	DC Power Connector (Straight)		CA5-DCCNL-01	●	●	

*1 Included in the product package. To be used for replacement. *2 Requires for the unit cover. *3 When the unit stand is used, CE/UL standards are not applicable to the PS-3711A and power supply unit.

Software

Product Name	Model No.	Description
GP-Pro EX Ver.**	EX-ED-V**	Screen-creation software
GP-Pro EX Editor License	EX-ED-LICENSE-V**	License for GP-Pro EX Development Environment *1
WinGP	EX-WINGP/IPC	License for runtime to use GP-Pro EX with WinGP compatible IPC. *2
Pro-Server EX Ver.** Developer	EX-SDV-V**	License for date collection and transfer via connecting an IPC to a PC via the Ethernet *3
Pro-Server EX Ver.** Developer License	EX-SED-LICENSE	License for Pro-Server EX Development Environment *4
Pro-Server EX Ver.** Runtime License	EX-SRT-LICENSE	License for Pro-Server EX Runtime *5
MES Action License	EX-MES-LICENSE-V**	License key to connect Pro-Server EX and database

** is changed with the version of software.
 *1 Purchase this product when installing GP-Pro EX in a second or subsequent PC. One license is required for each PC. *2 Included in GP-Pro EX only the license needs to be purchased.
 *3 Includes the settings editor and Runtime. *4 Purchase this product when installing the settings editor and Runtime in a second or subsequent PC.
 *5 Purchase this license when installing Runtime only in a second or subsequent PC. One license is required for each PC.

PS3000 SERIES (PS-3650A/3651A)

Product Name			Model No.	PS-3650A	PS-3651A	
Factory Built-in options	DIM Module DDR	256MB	PSA-DDR256-BLD	●	●	
		512MB	PSA-DDR512-BLD	●	●	
		1GB	PSA-DDR1G-BLD	●	●	
	HDD Unit	250GB	PS3650A-HD250-BLD	●	●	
		16GB	PS3650A-SD16-BLD	●	●	
	OS Pre-installed HDD	Windows® XP	Windows® XP	PS3650A-HD250-WXP-BLD	●	●
			Windows® XP ML	PS3650A-HD250-WXP/ML-BLD	●	●
			Windows® XP Embedded SP2	PS3650A-XPE2G-02-BLD	●	●
		CF Card compatible with Windows® XP Embedded SP2	ML	PS3650A-XPE2G-02-BLD	●	●
			ML	PS3650A-BATTU-BLD	●	●
Battery Unit *1			PS3650A-BATTU	●	●	
Accessory Options	DIM Module DDR	512MB	PSA-DDR512	●	●	
		1GB	PSA-DDR1G	●	●	
		250GB	PS3650A-HD250	●	●	
	HDD Unit	16GB	APL3000-SD16	●	●	
		128MB	CA3-CFCALL/128MB-01	●	●	
	CF Card	256MB	CA3-CFCALL/256MB-01	●	●	
		512MB	CA3-CFCALL/512MB-01	●	●	
		1GB	CA6-CFCALL/1GB-01	●	●	
		2GB	CA8-CFCALL/2GB-01	●	●	
			GP077-CFAD10	●	●	
CF Card Adapter			CA5-USBEXT-01	●	●	
USB Front Cable	1m	CA5-USBEXT-01	●	●		
Analog RGB Cable	4.5m	FP-CV02-45	●	●		
DVI-I/RGB Conversion Cable	5m	CA7-CBLCVRGB-01	●	●		
DVI-D/RGB Branch Cable	15cm	CA7-CBLCVDVI-D/RGB-01	●	●		
Screen Protection Sheet (5 Sheets/set)			CA7-DFS15-01	●	●	
Maintenance Options	Installation Gasket *2		CA3-WPG12-01	●	●	
			CA3-WPG12-01	●	●	
			CA8-BLU12XGA-01	●	●	
	Backlight *2		CA3-ATFALL-01	●	●	
			CA7-ACCNL-01	●	●	
	DC Power Connector (Straight) (5 Sheets/set) *2		CA7-DCCNL-01	●	●	

*1 For AC Models only *2 Included in the product package. To be used for replacement. *3 Used for a replacement of the battery unit (Model: PS3650A-BATTU-BLD).

PS3000 SERIES (PS-3450A/3451A/3000B/3001B)

Product Name			Model No.	PS-3450A	PS-3451A	PS-3000B	PS-3001B	
Factory Built-in options	DIM Module DDR	256MB	PSA-DDR256-BLD	●	●	●	●	
		512MB	PSA-DDR512-BLD	●	●	●	●	
		1GB	PSA-DDR1G-BLD	●	●	●	●	
	HDD Unit	40GB	PS3450A-HD40-BLD	●	●	●	●	
		16GB	PS3450A-SD16-BLD	●	●	●	●	
	OS Pre-installed HDD Unit	Windows® 2000	Windows® 2000 ML	PS3450A-HD40-W2K-BLD	●	●	●	●
			Windows® XP	PS3450A-HD40-WXP-BLD	●	●	●	●
			Windows® XP ML	PS3450A-HD40-WXP/ML-BLD	●	●	●	●
		CF Card compatible with Windows® XP Embedded SP2	Japanese and English Version	ML	PS3450A-XPE1G-JE-BLD	●	●	●
			ML	ML	PS3450A-XPE1G-ML-BLD	●	●	●
	ML	ML	PS3450A-XPE2G-BLD	●	●	●		
Accessory Options	DIM Module DDR	512MB	PSA-DDR512	●	●	●	●	
		1GB	PSA-DDR1G	●	●	●	●	
		40GB	PS3450A-HD40	●	●	●	●	
	CF Card	128MB	CA3-CFCALL/128MB-01	●	●	●	●	
		256MB	CA3-CFCALL/256MB-01	●	●	●	●	
		512MB	CA3-CFCALL/512MB-01	●	●	●	●	
		1GB	CA6-CFCALL/1GB-01	●	●	●	●	
		2GB	CA8-CFCALL/2GB-01	●	●	●	●	
	USB Front Cable	1m	CA5-USBEXT-01	●	●	●	●	
	Analog RGB Cable	4.5m	FP-CV02-45	●	●	●	●	
DVI-I/RGB Conversion Cable	5m	CA7-CBLCVRGB-01	●	●	●	●		
DVI-D/RGB Branch Cable	15cm	CA7-CBLCVDVI-D/RGB-01	●	●	●	●		
Screen Protection Sheet (5 Sheets/set)			CA7-DFS15-01	●	●	●		
Maintenance Options *1	Installation Gasket		CA7-WPG8-01	●	●	●	●	
			CA7-WPG8-01					

Pro-face has Developed Unique New Technologies to Support State-of-the-Art Manufacturing.

WinGP Simplifying HMI application development



Combine GP-Pro EX Screen Creation Software with "WinGP" Runtime Engine to turn your PC into a HMI. This reduces design time and utilizes the features and capabilities of a PC.

HMI Software Runs on Windows System

GP-Pro EX, the screen creation software used on Pro-face's programmable operator interface products such as GP3000 Series, is available even on Windows machines.

Individual functions can be selected at a glance using these icons.

Created screens can be visually selected using the thumbnail view.

A screen call menu can be displayed. If you activate the screen call function while creating a screen, the called screen is moved below, and displayed as a thumbnail.

The editing screen provides a user interface that adopts many tabs.

Various graphs such as trend graphs can be placed on the screen.

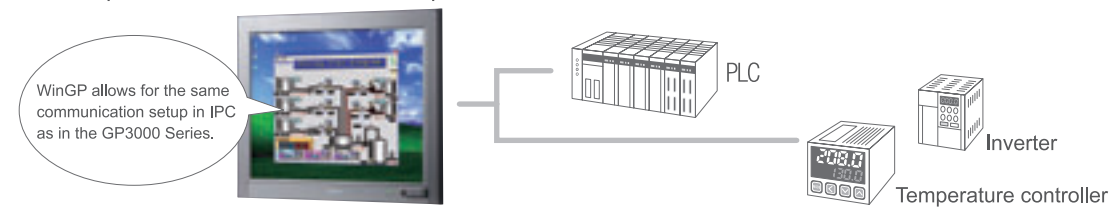
Your search can be narrowed to select a most suited image parts.

Frequently-used functions can be assigned to function keys, making mouse-free editing possible.



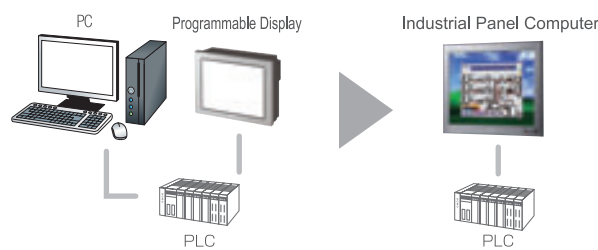
Seamless Communication with Various Controllers

Communication drivers are provided as a standard feature. Development of communication programs for the most of PLCs and temperature controllers are not required.



Downsize System Space

Conventional systems that combine a PC, graphic operator Interface and a PLC can be simplified to an Industrial PC and a PLC.



Combination with user applications

With the dedicated APIs, WinGP provides a flexible link to user applications.

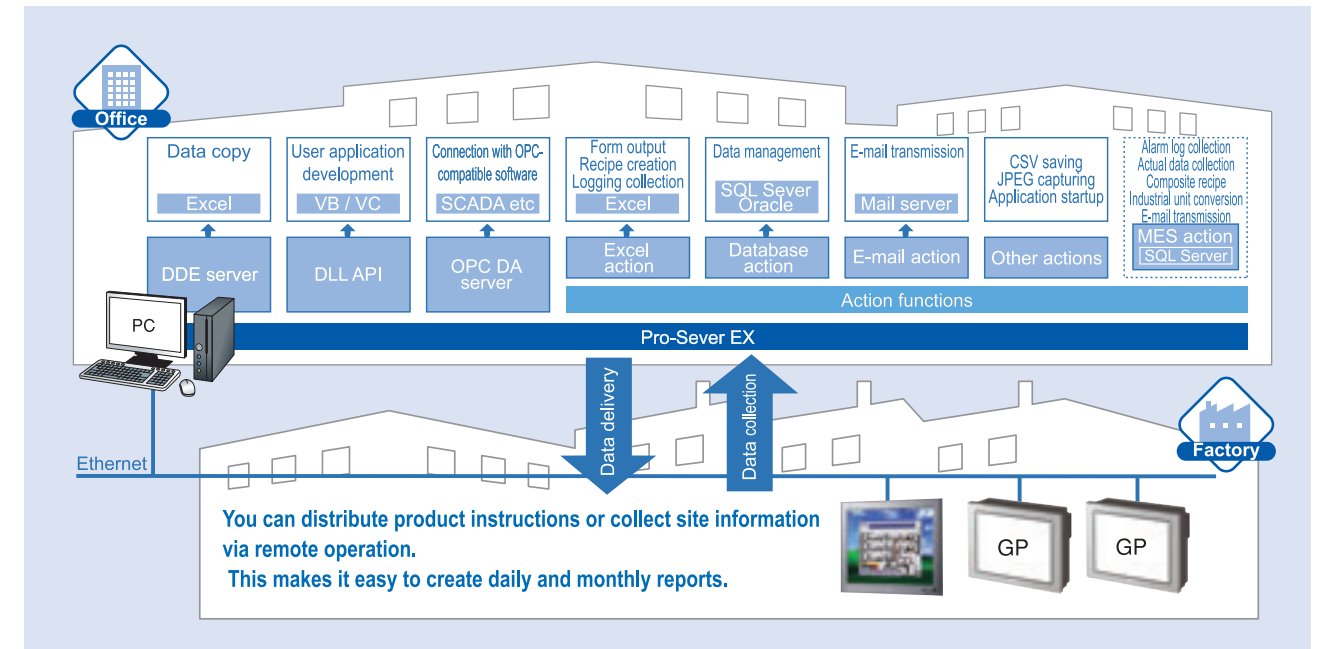
- ▶ **Link to User Database using the Handling API**
Enables a user application to receive WinGP status and to change its setup. (Provided as the DLL file)
- ▶ **Control from User Application using Device Address API**
Enables a user application to read/write devices on controllers connected with WinGP. (Provided as a DLL file)

Supported Languages
• Visual C++ • Visual Basic • C# • VB.NET • VBA

Data Management Software Automatic real-time collection of production information



Use the data management software "Pro-Server EX" to collect production data on sites, and utilize it as management data.



Standard templates are provided for immediate use.

- Daily report, Monthly report
- Work progress control
- Work plan
- Performance control
- Andon signal panel ...etc.

Building a remote environment

Combination with the Pro-Server EX API-DLL and RAS functions enables you to build a remote monitoring/control environment.

- ▶ **Remote Monitor**
Remotely monitor terminals at a manufacturing site from the main office.
- ▶ **Remote Shutdown**
Shut down the OS from a remote location.
- ▶ **Remote Reboot**
Increase the stability of the system by regularly rebooting the system at preset time.
- ▶ **Remote Boot**
Start multiple IPCs in unison from an office at the beginning of operations. Start reservation is also available.

Pro-face has Developed Unique New Technologies to Support State-of-the-Art Manufacturing.

Diskless Protect against data loss due to trouble from strong vibration or shock

Use of a Windows® XP Embedded on CF card or SSD unit provides excellent shock endurance without a HDD unit.



Windows® XP Embedded CF Card

The CF card is a storage device that provides excellent vibration resistance and shock immunity. By setting the write filter function, you can build a stable system and reduce the risk of data loss.

Write filter function

No data can be written to a CF card with the settings. The write cycle of CF card can be extended by minimizing the number of writing.



Easy recovery

Through image data backup using the recovery tool, you can quickly rebuild the system environment, eliminating the need for troublesome installation and recovery steps.

* You can download the recovery tool from our website "Otasuke Pro!"

DMA transfer system

Supports the DMA transfer mode which achieves high-speed data transfer. Compared with the conventional PIO transfer, both Read and Write speeds have been drastically increased.

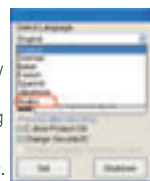
Startup time drastically reduced

Incorporates the new function "HORM (Hibernate Once/Resume Many)".* Startup time can be reduced through reading pre-registered images from the memory.

* The CF card must have the same amount of free space as the memory incorporated in the main unit.

Supports multiple languages

Supports all the languages officially supported by Microsoft.* Flexibly responds to built-in application for your exporting products.



* For details on supported languages, see the optional items list on page 22.



SSD (Solid State Drive) unit

Supported model: PL3000 Series and PS-3710A/PS-3711A
* The photo shows an SSD unit for the PL3000 Series.

The SSD unit is a storage device that ensures long service life for data writing while providing higher durability against vibration and shock for data writing than a HDD unit.

The SLC Type SSD

The SLC type enables an approximately 10 times longer writing service life than the MLC type. Ensures secure operation over a long period.

Enables service life monitoring

You can check the remaining life with the system monitor's S.M.A.R.T function.

Reduced power consumption

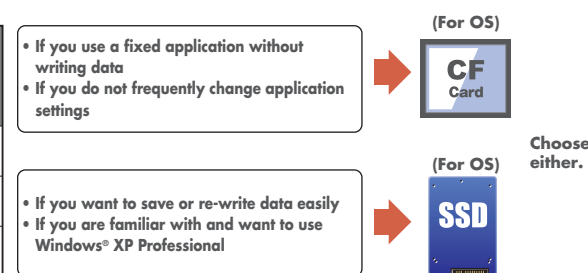
Since the SSD unit doesn't parts regularly activated have power consumption can be reduced. Operation sound is also low.

Wear-leveling function

This function evenly distributes data rewriting blocks to remarkably extend the service life, achieving 100,000 operations max.

Guide for Storage media selection

	Capacity	OS	Logically tough (Stability of data storage)	Physically tough (Reliability of media)
CF Card	2 GB (Empty capacity: approx. 1.5GB)	Windows® XP Embedded	◎ * When write filter function is set	◎
SSD	16GB	Windows® XP Professional	○	◎
HDD	60GB	Windows® 2000 Professional Windows® XP Professional	○	○



Battery Avoiding data loss in the case of sudden power failure

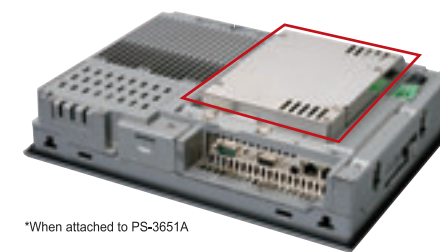
Supported model: PL3000 Series (4 expansion slots, AC power supply models), PS-3650A/3651A (AC power supply models)

Data can be protected from damage caused by blackout or voltage reduction with the power supplied by the battery unit.

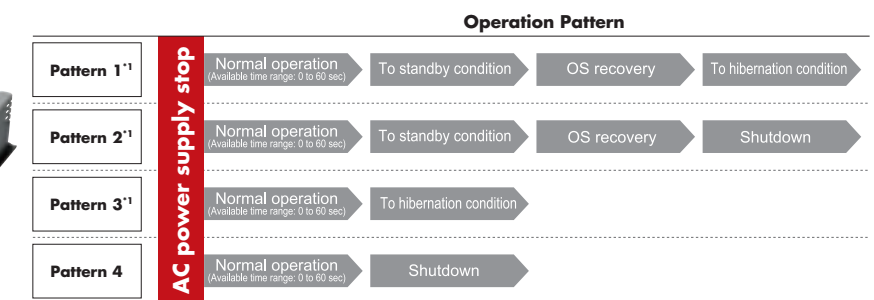
Automatic shutdown through software processing

When the system detects a blackout, our computer automatically shifts to standby/hibernation/shutdown of Windows® in 4 patterns. With this function, you can feel secure about the safety of precious data, even after a sudden blackout or temporary voltage reduction.

Continuous operations even when power has been removed during normal setup condition.



*When attached to PS-3651A



Note: Battery operation time could vary depending on the environment and specifications. Also, if using a 1GB CF card with Windows® XP Embedded pre-installed, shifting to hibernation status is impossible.

Other features:

- ▶ All-in-one compact design (only for factory built-in option)
- ▶ With the automatic status shift function after blackout detection
- ▶ Recycle collection of the used battery unit
- ▶ Monitors the remaining power, temperature, and status (charge/discharge) of the battery*¹
- ▶ Lifetime indicator for battery replacement*¹

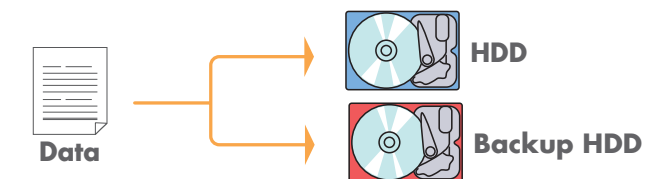
*¹ Not compatible with the PL3000 series.

Mirror Software Dual HDDs for enhancing data safety

Supported model: PL3000 Series

Soft-mirror function, which writes data to two HDD units simultaneously

Through simultaneous data writing to two HDD units using the soft-mirror utility, you can restore the system based on the remaining HDD unit, even if one of the two HDD units has crashed.



Besides the software mirroring function, data protection have been achieved.

If you are concerned about the use of the HDD unit:

(For OS) (For Date Storage)



XP® Embedded + SSD

Supported model: PL3000 and PS-3710A / PS-3711A

If you do not frequently save data:

(For OS) (For Date Storage)



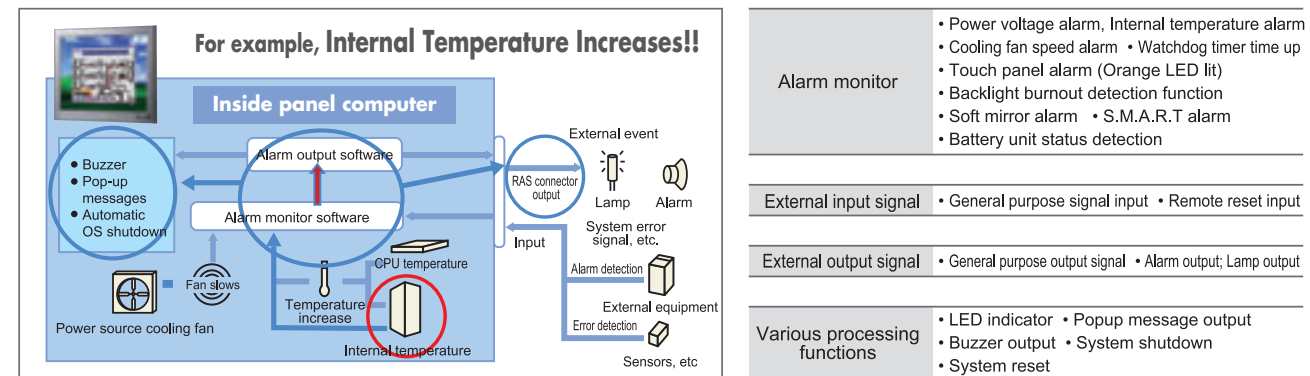
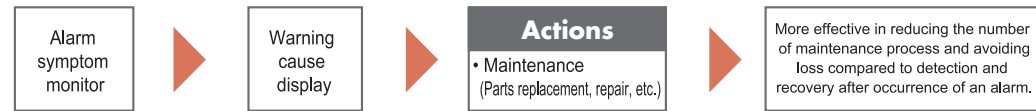
XP® Embedded + CF Card

Supported model: PS-3450A / PS-3451A

Reliability and Operability "Unique to Pro-face"

RAS Function: Avoiding possible trouble with IPC unit

The RAS function helps to avoid a PC system error before it happens. Preventive countermeasures contribute to reduction in the number of maintenance steps.



System Monitor **Free download from Otasuke Pro! at <http://www.pro-face.com/otasuke/>**

Utility to monitor various situations residing on the task bar. A tool which provides various support regarding the RAS function. The "SMART" function included in this tool monitors for errors and warns if they are detected.

- Monitors internal errors**
Monitors abnormal temperature, voltage, and fan rotation speed, as well as other errors, such as watchdog timer errors.
- Settings to be activated when an error occurs**
When an error occurs, the system can activate a preset error action.
- Stores error records**
When an error occurs, the event viewer executes logging to store an error record.

Front USB: Quickly connect a variety of peripheral devices

Easy maintenance

Without opening the operation panel, a USB storage device or keyboard can be connected to the unit for simple inspection and maintenance. Also, double security protection is available because you can set whether to use a USB port installed by using a thread-attached front USB fastener and DIP switch.

* A USB port can be installed using the optional USB front cable (CA5-USBEXT-01) on the panel even for the non front USB type.

HDD Cartridge: Replace hard drives easily

Supported model: PL3000 Series

Simple and quick replacement

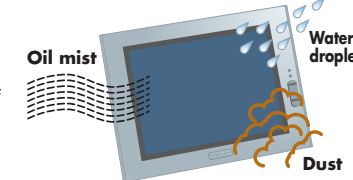
The cartridge disk system allows hard drives to be replaced without opening the computer.

Hot-swappable. The unit can be replaced without stopping the device even with power turned ON.

* Available only when used with mirror utility software.

IP65f Environmental Resistance: Durable even in harsh environments

An IP65f rated overlay (front sheet) protects the panel from oil mists, water droplets, dust, etc. Also, excellent in terms of performance, such as with resistance to vibration and high temperature operation.



Peripheral Devices: Don't worry about the compatibility with other companies' peripheral devices

You can combine our IPC with not only our Pro-face products but also other companies'.

You can safely use other companies' products since our IPC has been evaluated with commercially available expansion boards, as needed.

RoHS: Environment friendly RoHS directives compliant

Our product has been made in order to comply with EU RoHS standards, which designate the limit of the use of harmful substances. We have established our earth friendly mounting technology so as to avoid flow of harmful substances into the earth via waste and in turn contaminate groundwater.

* Chinese RoHS directive: The units produced in March 2007 and after have been applied sequentially. Please feel free to contact us for when to apply Chinese RoHS directive to your devices.

Space Saving: Realize space reduction with an all-in-one unit

This all-in-one unit contributes to space saving and can be set up to incorporate via the touch panel, keyboard and mouse operations.



Stable Long-term Supply: Longtime supply for industry

With a design assuming 24-hour continuous operation, our product has gone through a series of hard quality tests. Product components, such as body, parts and OS, are selected to provide long-term availability. Furthermore, we procure the products and offer product support overseas through our global network.

*Even when upgrading from our products, be sure to check the environment and performance on customers' side before use.

International Safety Standards: Complies with international safety standards

Complies with global safety standards. Our products can be shipped throughout the world and will meet the local safety requirements.



Touch Panel: Intuitive operation possible through direct touch of the screen

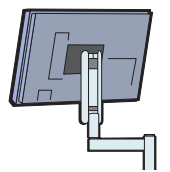
With use of a resistive film (analog) touch panel, mouse operation can be substituted by touch and freely performed on the screen. Simple operation is possible even for those who are not good at using a mouse or keyboard.



VESA Arm: Easy installation

Complying with the VESA standard, our products can be installed on an arm or other similar components.

The VESA standard compliant arms are available according to your application.



CMOS Function: No need to worry even if backup battery is exhausted

Even if the lithium backup battery is exhausted, you can feel secured to have the BIOS data saved in flash ROM.

* The clock needs to be adjusted.



EOL: End-of-life products

The product with this mark is scheduled for EOL. For corresponding replacement models, please visit our website.

<http://www.pro-face.com/otasuke/>

OtasukePro! > Support Service > PL/PS/FP Series > Compatible Information.

Lineup
PL3000 SERIES
PS3000 SERIES
FP3000 SERIES
Special Hardware Solutions
Now on sale
Option
Pro-face Approach
Support

Lineup
PL3000 SERIES
PS3000 SERIES
FP3000 SERIES
Special Hardware Solutions
Now on sale
Option
Pro-face Approach
Support

Service & Support

INFORMATION

With the Pro-face global brand, get the support you need anytime, anywhere! We have a reliable service and support system.

Please visit our website for the latest information and details. ▶▶▶

http://www.pro-face.com/company_e/proface/worldwide2.htm

* For details on available support content, please contact the relevant Pro-face office.

Worldwide Locations

- Pro-face Head Office
- Pro-face Branch Office
- Distributor or Sales Representative

Pro-face Northern Europe ApS

Pro-face Europe B.V. (European Head Office)

Pro-face UK Ltd

Pro-face France S.A.S.

Pro-face Deutschland GmbH

Pro-face España

Pro-face Italia S.p.a.

Pro-face Korea Co., Ltd.

Pro-face China International Trading (Shanghai) Co., Ltd.

Pro-face Taiwan Co., Ltd.

Pro-face India, Bangalore HQ

Pro-face South-East Asia Pacific Co., Ltd.

Digital Electronics Corporation

Pro-face America, Inc.

Pro-face Australia

We want to nip problems in the bud now.

Anytime, easily and quickly get connected via better-than-ever service!

Telephone Support

In an effort to gain greater customer satisfaction, Pro-face's telephone support services are based on the key words of availability, quick response and cordiality.

We want to make better screens in an easier way.

Expanded "Otasuke Pro!" support site
Upgraded handy screen samples

Web Support

The content of our "Otasuke Pro!" support site has been upgraded with services aimed at reducing development man-hours at customer by fulfilling contents such as Q&A and manual downloads.

We naturally want support overseas as well.

The same quality of support is provided at destination country of export

Global Support

One of the great features of Pro-face is that the same high level of customer support is available in countries where the product is exported to. Overseas customers can receive high quality support in both telephone inquiries and repair services.

Safety Standard Certificates RoHS Compliance

Anytime Anywhere

Web Download Service

Easily find individual product certifications and quickly obtain the necessary documentation for customs, safety inspections, and insurance.

We want to learn how to get the most out of Pro-face.

Easy-to-follow technical training provided to help customers make greater use of our products

Seminars

A variety of technical seminars are offered to help customers in order to get the most out of our Pro-face products. Easy-to-understand textbooks are prepared for what the customer wants to learn.

We want manuals that even beginners can understand.

Efforts to ensure anyone and everyone can understand how to use Pro-face products

Manuals

So that even beginners can use products immediately, We aim to make manuals easy-to-understand. We have already received high reviews from many customers in a survey on satisfaction.

We want Pro-face products fixed promptly.

Should trouble occur, it can be fixed swiftly without incurring process loss!

Repair Services

Pro-face has eliminated loss throughout the entire process from providing quotation to customer, repair, and return delivery. We are constantly re-evaluating our systems to ensure satisfaction for all of our customers.

Support Pro-face Approach Option Now on sale Special Hardware Solutions FP3000 SERIES PS3000 SERIES PL3000 SERIES L Series

Support Pro-face Approach Option Now on sale Special Hardware Solutions FP3000 SERIES PS3000 SERIES PL3000 SERIES L Series

Worldwide Locations



Our Environmental Policy and Compliance with the RoHS Directive

Pro-face has taken significant steps to meet increasingly stringent requirements for environmental preservation and has sought to comply with the RoHS Directive by adopting measures to eliminate specified harmful substances from existing products and products to be manufactured and sold beginning in 2006. For details, please refer to our web site or contact our sales office in your country.

ACCESS!!

www.proface.com

Worldwide Contacts:
<http://www.pro-face.com/worldwide/>

Conformance with International Safety Standards

UL LISTED / UL LISTED / S / RU c RU / CE Pro-face products and component parts bearing the CE Mark and the UL or c-UL Listing and Recognized Component Marks are your guarantees of compliance with safety standards accepted in countries and regions worldwide.

Caution: Before operating any of these products, be sure to read all related manuals thoroughly.

- For printing purposes, the colors in this catalog may differ from those of the actual unit.
- LCD screens may exhibit minute grid-points (light and dark) on the Display Panel surface. "Contouring" - where some parts of the screen are brighter than others, producing a wavelike pattern - may occasionally occur. Both are normal for an LCD display and are not defects.
- Actual user screens may differ from the screens shown here.
- All product names used in this catalog are the registered trademarks or trademarks of their respective companies.
- All information contained in this catalog is subject to change without notice.

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 Human Machine Interface

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