Pro-face®

APL3000SERIES
Industrial Computer with Ultimate Expandability

PS3000/3001SERIES
Industrial Computer Selected for High Usability

FP3000SERIES
DVI I/F Industrial Flat Panel Monitor

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

Pro-face Industrial Computer and Flat Panel Monitor

Reliability, Availability, Serviceability; High Quality is the Pro-face Standard

As a company leading the way in human-machine interface (HMI), we have produced a panel computer that integrates a touch panel monitor with a PC body, which is the first in the world. Since the launch of this product, we have retained the top share* in Japan as a manufacturer of panel computers and programmable displays, attaining high reputations in many production fields throughout the world.

The advanced Pro-face HMI further enhances its importance as a key technology in production fields.

Excerpt from "2006 Fuji Economic Mechatronics Parts"

Quality is Our First Priority

Pro-face products have undergone strict quality evaluation and environmental resistance tests, from the design/development to manufacturing stages.

Cutting Edge Technology

There are various needs and customers' requirements in the field.
We will supply the most suitable products for individual products applications, as well as maintaining optimum functions to meet such field needs and requirements.
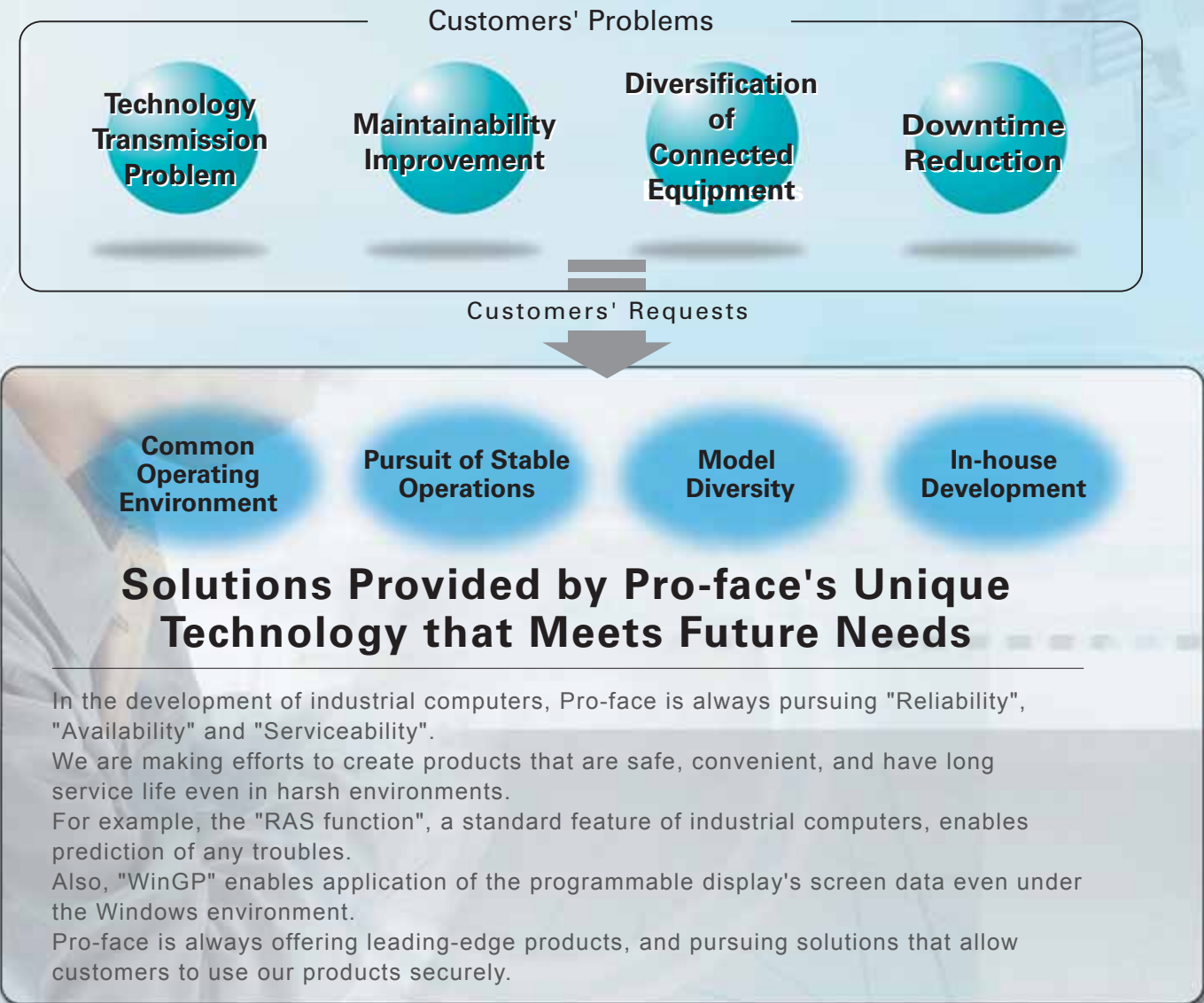
Thorough Maintenance, Inspection and Support System

For the purpose of replacement of consumables and system version upgrading, ease of parts requirement and maintenance in production fields is essential to stable operations.

Technology to Meet the Customers' Exact Needs

The customers' required level for industrial computers is much higher than that for general-purpose PCs. Therefore, we are requested to offer high reliability that can withstand extremely harsh environments in the field. In terms of environmental resistance directly associated with a production field where the Pro-face industrial computer is installed, there is no room for compromise.

Pro-face industrial computers will continue to meet customers' expectations in a wide spectrum of fields, from controllers at the forefront of production to servers for collecting overall plant information.

Customers' Problems

- Technology Transmission Problem
- Maintainability Improvement
- Diversification of Connected Equipment
- Downtime Reduction

Customers' Requests

- Common Operating Environment
- Pursuit of Stable Operations
- Model Diversity
- In-house Development

Solutions Provided by Pro-face's Unique Technology that Meets Future Needs

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

We are making efforts to create products that are safe, convenient, and have long service life even in harsh environments.

For example, the "RAS function", a standard feature of industrial computers, enables prediction of any troubles.

Also, "WinGP" enables application of the programmable display's screen data even under the Windows environment.

Pro-face is always offering leading-edge products, and pursuing solutions that allow customers to use our products securely.

The Pro-face Policy

The In-house Design from Fundamental Stages

Assuming that our products have any problem during use at a customer's site (incompatibility with connected equipment, or a problem specific to the Windows environment), we internally design our products from the fundamental stages, including motherboard design.
Therefore, in case of a failure in the operating environment, we can identify the cause of the problem and flexibly and quickly take actions.

Strict Environmental Resistance Test

Based on the assumption Pro-face products will be used in harsh FA environments, we offer our customers products that have passed strict in-house tests.
Some of which include vibration resistance test, and heat resistance tests against heat as the worst enemy of precision equipment.

Compatibility Problem Reduction

BIOS, as a key part of a machine, has undergone internal optimization by the series in order to prevent any possible trouble caused by incompatibility with principle components of the machine.

Reduction in the Number of Steps on the Customers' Side

Installation of drivers for principle components is indispensable in the introductory step.
Placing emphasis on availability in the site, we will deliver our products with the drivers pre-installed, so as to minimize the number of steps to be taken.

Broad Product Selection to Meet Customer's Application Needs!

Industrial Computers with the Ultimate in Expandability and Serviceability

APL3000 SERIES

Performance suited to enduring high loads

Continues operating without pause, even in emergency situations

Developed as an industrial computer with high specifications. Adopts the Intel® Dual Core CPU and 945GME chipset, as well as incorporating the maximum 4GB memory for enhancing the high speed processing capacity.
Equipped with the constant backup function in 2 HDDs using the mirroring software, as well as the security function to achieve 24-hour continuous operation.

Industrial Computers Providing Highest Value

PS3000/01 SERIES

A wide variety of sizes are offered with high usability

Best in class, all-in-one PC for your industrial applications

High evaluation has been achieved through the thin and compact, cost conscious panel computer equipped with more specifications than required.
Supporting multi-languages and enriching interfaces, it complies with International Safety Standards in addition to a wide range of lineups.

DVI I/F Compatible Industrial Flat Panel Monitor

FP3000 SERIES

Built-in DVI Interface to Express Information Vividly as Standard

Built-in USB Interface with High General Versatility

Compliant with the RoHS directive, in addition to having a simple design with high general versatility.
Incorporates USB and DVI for interfaces.
Furthermore, by connecting with our built-in computer, the display provides vivid images even if installed 10m away from the main unit.

Intuitive HMI Software for Easy Screen Development

GP-Pro EX + WinGP

Flexibility not influenced by hardware

Time saving thanks to easy operation

Easy to create GUI for Windows®

Excellent screen creation software that can be used for direct operation. Additionally, communication drivers by various manufacturers are attached as standard. With easy connection settings, you can precisely get any necessary information. Compatible with all Pro-face "3000 Series" models.
No need to re-create the screen for each hardware unit.

APL 3000 SERIES

Industrial Computer with Ultimate Expandability and Serviceability

▶ P.8~P.11

19"	15"	12.1"
Pursues High Performance as well as Expandability and Serviceability	Pursues High Performance as well as Expandability and Serviceability	Pursues High Performance as well as Expandability and Serviceability
APL-3900T	APL-3700T APL-3700K	APL-3600T APL-3600K

APL 3000 SERIES — Box Computer

▶ P.8~P.11

Pursues High Performance as well as Expandability and Serviceability

APL-3000B

PS 3000 SERIES

Industrial Computer Selected by Usability

▶ P.12~P.17

15"	12.1"	8.4"
High-speed Processing Available with a Large, Thin Screen	12.1" XGA with Rich Expression Screen Display	Perfectly Suited for Space Saving and Diskless Operation
PS-3710A PS-3711A	PS-3650A PS-3651A	PS-3450A PS-3451A

PS 3000 SERIES — Box Computer

▶ P.12~P.17

Compact, Perfectly Suited to Collect Production Information

PS-3000B and PS3001B

FP 3000 SERIES

DVI I/F Compatible Industrial Flat Panel Monitor

▶ P.18~P.19

19"	15"	12.1"	10.4"
Multiple Images Displayed on a Large Screen	High Visibility Plus Maintenance Efficiency	DVI Improves Visibility at Site	DVI Improves Visibility at Site
FP-3900T	FP-3710T FP-3710K	FP-3650T FP-3600T	FP-3500T

Battery — No worry about trouble caused by sudden blackout or voltage reduction.

Mirror Software — Constant backup function guarantees safe and secure operation.

Environmental Resistance — IP65f NEMA 4/4x/12 rated excellent environmental resistance protects the product from water, dust, high temperatures, and humidity at sites.

Compatible with WinGP — Utilize screen data using "GP-Pro EX".

Front USB — Built-in USB I/F on the front panel of the unit. Easy to connect a peripheral device.

RAS Function — Detect errors in advance with the equipment monitor function.

Diskless — Compatible with XP Pro. Avoid trouble using the CF card.

Keypad Type — Keyboard integrated with the main unit. Easy operation available.

Service & Support — No worry about sudden trouble or repair. Quick support via telephone or Website.

HDD Cartridge — Simple HDD removal results in maintenance time reduction.

Pro-face Industrial Computer Lineup

	Industrial Computer with Ultimate Expandability and Serviceability						Industrial Computer Selected for High Usability	
	APL3000 SERIES						**PS3000** SERIES	
	APL-3900T	APL-3700T	APL-3600T	APL-3700K	APL-3600K	APL-3000B	PS-3710A	PS-3711A
Reference Page ▶	▶P.8			▶P.10			▶P.12	
Screen Size	19"	15"	12.1"	15"	12.1"	Box PC	15"	
Graphics	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	XGA 1024 x 768 pixels	
OS	Windows® XP **Pro / XP ML						Windows **XP Pro / XP ML / XP Embedded ML	
CPU	Core™ Duo 2.0GHz / Celeron® M440 1.86GHz						Pentium® M 1.6GHz	ULV Celeron M 1.0GHz
Memory	DDR2 1GB to 4GB						DDR 1GB to 2GB	DDR 512MB to 1GB
Chip Set	Intel® 945GME + ICH7M						Intel® 855GME + ICH4	
Storage	250GB HDD <S-ATA> / 16-128GB SSD (Solid State Drive) <S-ATA> / 8GB CF-Card						60GB HDD <IDE> / 16-64GB SSD (Solid State Drive) <IDE> / 2 or 8GB CF-Card	
CF Card	1 Slot						1 Slot	
Interface — Serial	4 Ports						4 Ports	2 Ports
Interface — RAS	1 Port						1 Port	
Interface — Ethernet	1 Port ⟨1000BASE-T⟩ 1 Port ⟨100BASE-TX⟩						1 Port1000BASE-T 1 Port100BASE-TX	
Interface — USB (Host)	5 Ports (Front 1, Side 4)				4 Ports (Side 4)		* 5 Ports (Front 1, Side 4)	
Interface — PS/2	——						1 Port	
Interface — Optical Drive	DVD-R/W						DVD-ROM	——
Interface — Floppy Drive	——						1 Slot	——
Interface — PCMCIA	——						2 Slots	
Power Supply	AC100 to 240V						AC100 to 240V	
	DC 24V						DC24V	
Fanless	——						——	●
Expansion Slots	2 Slots ⟨PCI⟩ / 4 Slots ⟨PCI⟩						1 Slot <PCI>	——

Front USB port is not available on PS3710A-TA2 Models

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Industrial Computer Selected for High Usability

PS3000 SERIES

PS-3650A	PS-3651A	PS-3450A	PS-3451A	PS-3000B	PS-3001B
				Box PC	Box PC
▶P.14		▶P.16		▶P.16	
12.1"		**8.4"**		Box PC	
XGA 1024 x 768 pixels		SVGA 800 x 600 pixels		VGA 640 x 480 pixels to 1920 x 1080 pixels to FULLHD 1920 x 1680 pixels	
Windows **XP Pro / XP ML / XP Embedded ML					Windows ** XP Pro / XP Embedded ML
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 1GB	DDR 512MB to 1GB	DDR 1GB	DDR 512MB to 1GB	DDR 1GB	DDR 512MB to 1GB
Intel® 855GME + ICH4					
250GB HDD <S-ATA> / 16-128GB SSD (Solid State Drive) <S-ATA> / 2 or 8GB CF-Card		40GB HDD <IDE> / 16-64GB SSD (Solid State Drive) <IDE> / 2 or 8GB CF-Card		40GB HDD <IDE> / 16-64GB SSD (Solid State Drive) <IDE> / 2 or 8GB CF-Card	2 or 8GB CF-Card
1 Slot		2 Slots		2 Slots	
1 or 2 Ports		2 Ports		2 Ports	
1 Port (Excluded for the serial 2 model)		——		——	
		1 Port 〈1000BASE-T〉 1 Port 〈100BASE-TX〉			
5 Ports (Front 1, Side 4)		4 Ports		4 Ports	
——		——		——	
——		——		——	
——		——		——	
1 Slot		——		——	
AC100 to 240V		AC100 to 240V	——	AC100 to 240V	——
DC24V		DC24V		——	DC24V
——	●	——	●	——	●
1 Slot 〈PCI〉	——	1 Slot 〈PCI〉	——	1 Slot 〈PCI〉	——

DVI I/F Compatible Industrial Flat Panel Monitor

FP3000 SERIES

FP-3900T	FP-3710T	FP-3650T	FP-3600T	FP-3500T	FP-3710K
▶P.18					
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
AC100 to 240V			AC 100 to 240V	AC 100 to 240V	AC 100 to 240V
			DC24V	DC24V	
USB (Front Slot) x 1 port or Without USB	USB (Bottom Slot) x 1 port				USB (Front Slot) x 1 port

Direct connection between the FP unit and a USB device using the built-in USB interface!

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

Image input (DVI cable 5 m)

Touch & USB Device Data (USB cable: 5m)

Operation panel   Control panel

■ **FP-3650T / 3600T / 3500T**
A USB front mounting cable allows a USB device to be connected from the panel.

**The XP Pro OS installed in units with an 8 GB flash card supports English, French, Spanish, Brazilian Portuguese, Japanese, Simplified and Traditional Chinese languages.*

Lineup | APL3000 SERIES | PS3000 SERIES | FP3000 SERIES | Option | WinGP | Pro-face Approach

Industrial Computer with Ultimate Expandability and Serviceability **APL3000 SERIES**

Pursues High Performance as well as Expandability and Serviceability

APL-3900T / 3700T / 3600T

| 19" SXGA | 15" XGA | 12.1" SVGA |

Core™ Duo 2.0GHz

Celeron® M440 1.86GHz

Class I Div 2

● Dual HDD supported ● Support 16 to 128GB Solid State Drive
● Mirror utility software supported (Optional) ● Compliant with the RoHS directive
● HotSwap supported (only when the Software Mirror Utility is used) ● DVI-I
● IP65f, NEMA 4/4x/12 rated ● RAID option available ● WinGP option available

	Size	CPU	Supported OS	Memory	PC/AT Standard Interfaces	Power Supply	Expansion Slots
APL-3900T	19" SXGA	Core™ Duo 2.0GHz Celeron® M440 1.86GHz	Windows® XP Pro XP ML	DDR2 SDRAM 1GB to 4GB	CFCard X 1 Serial X 4 Ethernet X 2 USB X 5 DVD-R/W X 1	AC100 to 240V DC24V	4 slot 2 slot
APL-3700T	15" XGA						
APL-3600T	12.1" SVGA	Common platform adopted					

Features of the APL3000 Series

High Performance Industrial Computer

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

High Performance Built-in CPU

For system architecture through high-speed processing of images or large capacity data, High performance and low energy-consuming built-in Intel® Core™ Duo processor Higher speed processing is possible thanks to the Dual Core CPU.

Memory Capacity 4GB at Maximum

Can store memory as large as 4GB. Pursues higher performance with DDR2 standard complying memory.
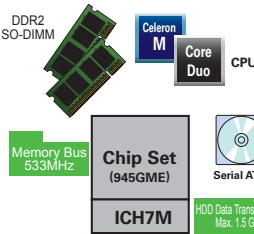
Serial ATA HDD Applied

A serial ATA HDD which can transfer data as fast as 1.5Gbps is built-in. This makes high speed data processing possible at a large capacity.

DDR2 SO-DIMM

Celeron M
Core Duo CPU

Memory Bus 533MHz
Chip Set (945GME)
ICH7M

Serial ATA HDD
HDD Data Transfer Speed: Max. 1.5 Gbps/s

24-hour Continuous Operation

Data protection function and quick maintenance control recovery time is as little as possible to regain important data lost due to device breakage or momentary stop.

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.
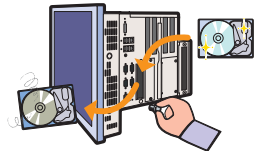
Data → HDD
Back Up HDD
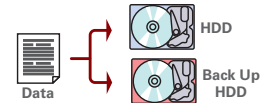
HDD Cartridge

Can reduce maintenance time with the application of the cartridge disk type, only requiring HDD replacement.

HotSwap

Can replace the HDD unit without stopping the device even with the power turned ON thanks to the HotSwap function.

External Dimensions/Interfaces

Units: mm[in.]

APL-3900T (2 slot)

2 slot : 181.2 [7.13]
4 slot : 233.2 [9.18]   (1.8) [0.07]
460 [18.11]   12.7 [0.5]
390 [15.35]   352 [13.86]

419 [16.50]

Panel Cut-Out Dimensions

Units are shown without DVD-RW; add 37.5mm (1.47") to the depth (D).

Under 4-R3

352.5$^{+1}_{-0}$ [13.88$^{+0.04}_{-0}$]
419.5$^{+1}_{-0}$ [16.52$^{+0.04}_{-0}$]

Allowable Panel Thickness: 1.6 to 10.0

APL-3700T (2 slot)

2 slot : 165.5 [6.52]
4 slot : 217.5 [8.56]   (1.8) [0.07]
425 [16.73]   10 [0.39]
325 [12.80]   282 [11.10]

383 [15.08]

Panel Cut-Out Dimensions

Units are shown without DVD-RW; add 37.5mm (1.47") to the depth (D).

Under 4-R3

282.5$^{+1}_{-0}$ [11.12$^{+0.04}_{-0}$]
383.5$^{+1}_{-0}$ [15.10$^{+0.04}_{-0}$]

Allowable Panel Thickness: 1.6 to 10.0

APL-3600T (2 slot)

2 slot : 165.1 [6.50]
4 slot : 217.1 [8.55]   (1.8) [0.07]
338 [13.31]   10 [0.39]
286 [11.26]   243 [9.57]

295 [11.61]

Panel Cut-Out Dimensions

Units are shown without DVD-RW; add 37.5mm (1.47") to the depth (D).

Under 4-R3

243.5$^{+1}_{-0}$ [9.59$^{+0.04}_{-0}$]
295.5$^{+1}_{-0}$ [11.63$^{+0.04}_{-0}$]

Allowable Panel Thickness: 1.6 to 10.0

Parts Name

1. DVI-I Interface
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 Slot (Serial ATA)
6. USB Interface
7. Speaker Output Interface
8. Serial (RS-232C) Interface
9. RAS Interface
10. CF Card Slot (IDE Interface)
11. Power Connector (European Terminal)
12. Power Switch
13. System Fan
14. Front USB Interface
15. *DVD-R/W (Unit drawings are shown without DVD-R/W)

■ Performance Specifications

Model	APL3900-TA	APL3900-TD	APL3700-TA	APL3700-TD	APL3600-TA	APL3600-TD
Display Type	TFT Color LCD					
Display Size	19"		15"		12.1"	
Display Colors	262,144 colors					
Display Dots (Pixels)	1280 x 1024 pixels (SXGA)		1024 x 768 pixels (XGA)		800 x 600 pixels (SVGA)	
Backlight	CCFL (Backlight replacement: Sendback system)		CCFL (Replaceable)			
Effective Display Area	W376.32 [14.82] x H301.056mm [11.85in.]		W306.2 [12.06] x H230.1mm [9.06in.]		W248.0 [9.76] x H186.5mm [7.34in.]	
Brightness Control	4 levels (adjustment using software)					
Supported OS	Windows® XP Pro / XP ML					
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) 1GB / 2GB / 4GB (SO-DIMMx2 slots) (PC5300)					
Chip Set	Intel® 945GME + ICH7M					
Graphic Accelerator	Built in Intel® 945GME					
Video Memory	Max 64MB (UMA type)					
Graphics	SXGA (1280 x 1024 pixels)		XGA (1024 x 768 pixels)		SVGA (800 x 600 pixels)	
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 (Solid State Drive)	
IDE	Master: CF Card Slot (Type I / II) x 1[*1] Slave: DVD Drive x 1	
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	
Serial (COM3)	RS-232C Connector: D-Sub 9-pin Plug	
Serial (COM4)	RS-232C Connector: D-Sub 9-pin Plug	
Ethernet (LAN1)	IEEE802.3u, 10BASE-T / 100BASE-TX / 1000BASE-T Auto change Connector: Modular Jack (RJ-45)	
Ethernet (LAN2)	IEEE802.3u, 10BASE-T / 100BASE-TX Auto change Connector: Modular Jack (RJ-45)	
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	
Video	DVI-I Output[*2] Connector: DVI-I 29-pin Socket	
RAS	Input (usable as an external reset input): 2 points, Output: 2 points Rated Voltage: DC12V Maximum Rated Current: 100mA Connector: D-Sub 9-pin Socket x 1	
Sound	Speaker Output Connector: Mini Pin Jack x 1	
CD/DVD-R/W Drive	DVD-R/W Drive	

*1 Can switch between master and slave according to the settings.*2 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 cUL CSR CE					
Comforming to Standards	UL508, CSA-C22.2 No.142-M1987, ANSI/ISA-12.12.01-2007[*4], CSA-C22.2 No.213-M1987 (c-UL Approval)[*4], EN55011 Class A, EN61000-6-2, EN60950-1 (AC models only), 47 CFR Part 15 Class A, KCC[*5]					

Power Supply
	APL3900-TA	APL3900-TD	APL3700-TA	APL3700-TD	APL3600-TA	APL3600-TD
Rated Voltage	AC100 to 240V	DC24V	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	AC85 to 264V	DC19.2 to 28.8V
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 or less	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)	5ms or less	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)	5ms or less
Power Consumption	145VA or less	145W or less	145VA or less	145W or less	145VA or less	145W or less
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 10MΩ or more at 500V (between charging and FG terminals)
Ambient Operating Temperature	<With HDD> 5 to 50°C <Without HDD> 0 to 50°C
Storage Temperature	-20 to +60°C
Ambient Humidity	10 to 90%RH (No condensation, Wet-bulb temperature: <With HDD> 29°C or lower, <Without HDD> 39°C or lower)
Storage Humidity	10 to 90%RH (No condensation)(Wet-bulb temperature : 39°C or lower)
Pollution Degree	Pollution Degree 2
Corrosive Gases	Free of corrosive gases
Air Pressure Resistance (Operation Altitude)	800 to 1114hPa (2000m or lower above sea level)
Vibration Resistance	JISB3502, IEC/EN 61131-2 compliant <With HDD> 10 to 57Hz Half Amplitude: 0.075mm, 57 to 150Hz Constant Acceleration: 9.8m/s², X, Y, Z directions 10 cycles (for 100 minutes) <Without HDD> 5 to 9Hz Half Amplitude: 3.5mm, 9 to 150Hz Constant Acceleration: 9.8m/s², X, Y, Z directions 10 cycles (for 100 minutes)

	APL3900-TA	APL3900-TD	APL3700-TA	APL3700-TD	APL3600-TA	APL3600-TD
Noise Immunity	Noise Voltage: 1500Vp-p, Pulse width: 50ns, 500ns, 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 width: 50ns, 500ns, 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 width: 50ns, 500ns, 1μs, Rise Time: 1ns (via noise simulator)	Noise Voltage: 1000Vp-p, Pulse Duration: 1μs, Rise Time: 1ns (via noise simulator)
Electrostatic Discharge Immunity	Contact Discharge Method: 6kV (IEC/EN 61000-4-2 Level 3)					
Grounding	Protection:Type D (Common to SG-FG) Function: Type D (Common to SG-FG)		Protection:Type D (Common to SG-FG) Function: Type D (Common to SG-FG)		Protection:Type D (Common to SG-FG) Function: Type D (Common to SG-FG)	
Ratings	Equivalent to IP65f, NEMA 4/4X/12 (for the panel-installed front area when not using the front-face USB port unit)[*3]					
External Dimensions (W x H x D) (With DVD-R/W)	2 slots: W460mm [18.11in.] x H390mm [15.35in.] x D218.7mm [8.61in.] 4 slots: W460mm [18.11in.] x H390mm [15.35in.] x D270.7mm [10.65in.]		2 slots: W425mm [16.73in.] x H325mm [12.8in.] x D203.0mm [7.98in.] 4 slots: W425mm [16.73in.] x H325mm [12.8in.] x D255.0mm [10.03 in.]		2 slots: W338mm [13.31in.] x H286mm [11.26in.] x D203mm [7.98in.] 4 slots: W338mm [13.31in.] x H286mm [11.26in.] x D255mm [10.03in.]	
Weight (With DVD-R/W)	2 slots: Approx. 15.45kg [34.0lb] 4 slots: Approx. 16.45kg [36.2lb]		2 slots: Approx. 13.45kg [29.6lb] 4 slots: Approx. 14.45kg [31.8lb]		2 slots: Approx. 9.45kg [20.8lb] 4 slots: Approx. 10.45kg [23.0lb]	
Cooling Method	Forced Air Cooling by CPU Fan					

*3 Meets applicable testing requirements. Operation is not, however, guaranteed in every environment.*4 Hazardous Location Class I, Division 2 Groups A, B, C, and D *5 AC model only

■ Expansion Slots

Item	2 slot	4 slot	Board size
1st slot	PCI Rev.2.3 (5V)	PCI Rev.2.3 (5V)	174.63 [6.88] x 106.68mm [4.20in.]
2nd slot	PCI Rev.2.3 (5V)	PCI Rev.2.3 (5V)	174.63 [6.88] x 106.68mm [4.20in.]
3rd slot	—	PCI Rev.2.3 (5V)	250 [9.84] x 106.68mm [4.20in.]
4th slot	—	PCI Rev.2.3 (5V)	250 [9.84] x 106.68mm [4.20in.]
Power Supply[*6]	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	—

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

■ Option Menu

APL3900 – [TA] – [CD2G] – [4P] – [2G] – [XM250] – [M] – [ ]

Size	Main Unit Type / Power Supply		CPU	Expansion Slots	Memory	OS (Pre-installed HDD)	Others	Other Optional Items
9 19"Touch Panel LCD	BA Built-in Computer AC Power Supply	KA Panel Computer with Keypad AC Power Supply	CD2G Core® Duo 2.0GHz	2P PCI / 2 slot	1G 1GB	XM250 Windows® XP ML ver.	M DVD-R/W Drive Unit	Add "- R" for RAID option → R
7 15" Touch Panel LCD	BD Built-in Computer DC Power Supply	KD Panel Computer with Keypad DC Power Supply	CM18 Celeron™ M440 1.86GHz	4P PCI / 4 slot	2G 2GB	XPC08 *8 GB CF Card Windows® XP Pro		
6 12.1" Touch Panel LCD	TA Panel Computer AC Power Supply				4G 4GB	XM16S/ SA-128SA 16-128GB SSD Windows XP ML ver		Add "-WG" for Win GP option → WG
0 Built-in (BOX)	TD Panel Computer DC Power Supply							

Choice Menu

*The XP Pro OS installed in units with an 8 GB flash card supports English, French, Spanish, Brazilian Portuguese, Japanese, Simplified and Traditional Chinese languages.

Pursues High Performance as well as Expandability and Serviceability

APL-3700K / 3600K / 3000B

HDD Back up HDD — **Mirror Software**
Environmental Resistance
EX **Compatible with WinGP**
Front USB
RAS Function
Diskless
PF1 A **Keypad Type**
HDD **HDD Cartridge**
Service & Support

15" XGA 12.1" SVGA

Core™ Duo 2.0GHz

Celeron® M440 1.86GHz

Class I Div 2

- ● Dual HDD supported ● Support 16 to 128GB Solid State Drive
- ● Mirror utility software supported (Optional) ● DVI-I
- ● HotSwap supported (only when the Software Mirror Utility is used)
- ● RAID option available ● WinGP option available
- ● IP65f, NEMA 4/4x/12 rated (except for APL3000-B) ● Compliant with the RoHS directive

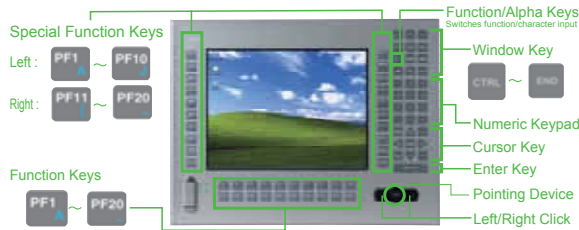|	Size	CPU	Supported OS	Memory	PC/AT Standard Interfaces	Power Supply	Expansion Slots
APL-3700K	15" XGA	Core™ Duo 2.0GHz Celeron® M440 1.86GHz	Windows® XP Pro XP ML	DDR2 SDRAM 1GB to 4GB	CFCard X 1 Serial X 4 Ethernet X 2 USB X 5 DVD-R/W X 1	AC100 to 240V DC24V	4 slot 2 slot
APL-3600K	12.1" SVGA						
APL-3000B	Node PC	Common platform adopted					

Features of the APL3000 Series

One-unit that Integrates a Keyboard and a Mouse with a PC Body

Panel computer with keypads available with keyboard key switch (membrane) at the front.

Features

· Special function keys for customization. · Can be operated without a mouse.
· Built-in Front USB as standard.

Special Function Keys
Left : PF1 ~ PF10
Right : PF11 ~ PF20

Function Keys
PF1 ~ PF20

Function/Alpha Keys
Switches function/character input
Window Key
CTRL ~ END
Numeric Keypad
Cursor Key
Enter Key
Pointing Device
Left/Right Click

No Worry About Sudden Blackout with a Battery Unit.

No excess space needed for built-in type in the body.

Adopts a common platform to reduce the number of evaluation steps.

The APL3000 Series offers various models including the panel computer, keypad-attached and built-in computer.
When a customer purchases multiple models, we adopt the common hardware platform for the requirement of the minimum number of evaluation steps.

External Dimensions/Interfaces

Units: mm[in.]

APL-3700K (2 slot)

2 slot: 165.5 [6.52]
4 slot: 217.5 [8.56]
(1.8) [0.07]
488 [19.21]
10 [0.39]
367 [14.45]
313 [12.32]

441 [17.36]

Units are shown without DVD-RW; add 37.5mm (1.47") to the depth (D).

Panel Cut-Out Dimensions
Under 4-R3
441.5+1−0 [17.38+0.04−0]
313.5+1−0 [12.34+0.04−0]
Allowable Panel Thickness: 1.6 to 10.0

APL-3600K (2 slot)

2 slot: 165.5 [6.25]
4 slot: 217.5 [8.56]
(1.8) [0.07]
425 [16.73]
10 [0.39]
325 [12.80]
282 [11.10]

383 [15.08]

Units are shown without DVD-RW; add 37.5mm (1.47") to the depth (D).

Panel Cut-Out Dimensions
Under 4-R3
383.5+1−0 [15.10+0.04−0]
282.5+1−0 [11.12+0.04−0]
Allowable Panel Thickness: 1.6 to 10.0

APL-3000B (2 slot)

(12) [0.47]
289 [11.38]
277 [10.91]
243 [9.57]
125.5 [4.94]
243 [9.57]
277 [10.91]

IMPORTANT NOTE: All APL drawings are shown without the 4-slot option and without a DVD-R/W drive. A DVD-R/W drive is shipped with all units and will add 37.5 mm (1.47") to the depth of each unit. Adding 2 additional PCI slots will increase the depth by an additional 51.0 mm (2.01").

Parts Names	
① DVI-I Interface	⑧ Serial (RS-232C) Interface
② Ethernet Interface (10 Base-T/100 Base-TX Auto change)	⑨ RAS Interface
③ Ethernet Interface (10BASE-T/100BASE-TX/1000BASE-T Auto change)	⑩ CF Card Slot (IDE Interface)
④ Expansion Slot	⑪ Power Connector (European Terminal)
⑤ HDD Slot (Serial ATA)	⑫ Power Switch
⑥ USB Interface	⑬ System Fan
⑦ Speaker Output Interface	⑭ Front USB Interface
	⑮ DVD-R/W (Unit drawings are shown w/o DVD-R/W)

Lineup
APL3000 SERIES
PS3000 SERIES
FP3000 SERIES
Option
WinGP
Pro-face Approach

APL-3700K / 3600K / 3000B

■Performance Specifications

Model		APL3700-KA	APL3700-KD	APL3600-KA	APL3600-KD	APL3000-BA	APL3000-BD
Display Type		TFT Color LCD					
Display Size		15"		12.1"			
Display Colors		262,144 colors					
Display Dots (Pixels)		1024 x 768 pixels (XGA)		800 x 600 pixels (SVGA)			
Backlight		CCFL (Replaceable)					
Effective Display Area		W306.2 [12.06] x H230.1mm [9.06in.]		W248.0 [9.76] x H186.5mm [7.34in.]			
Brightness Control		4 levels (adjustment using software)					
Supported OS		Windows® XP ML / XP Pro					
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) 1GB / 2GB / 4GB (SO-DIMMx2 slots) (PC5300)					
Chip Set		Intel® 945GME + ICH7M					
Graphic Accelerator		Built in Intel® 945GME					
Video Memory		Max 64MB (UMA type)					
Graphics		XGA (1024 x 768 pixels)		SVGA (800 x 600 pixels)		VGA (640 x 480 pixels) to UXGA (1600 x 1200 pixels)	
BIOS		Phoenix® TrustedCore™ BIOS					
Touch Panel Type		Resistive Film (Analog)					
Touch Panel Resolution		1024 x 1024					
Number of Key Switches		74					
Key Switch Type		Membrane Switch					
Interface	Serial ATA	Serial ATA Rev.1.0a x 2 HDD or SSD (Solid State Drive)					
	IDE	Master: CF Card Slot (Type I / II) x 1*1 Slave: DVD Drive x 1					
	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					
	Serial (COM3)	RS-232C Connector: D-Sub 9-pin Plug					
	Serial (COM4)	RS-232C Connector: D-Sub 9-pin Plug					
	Ethernet (LAN1)	IEEE802.3u, 10BASE-T / 100BASE-TX / 1000BASE-T Auto change Connecter: Modular Jack (RJ-45)					
	Ethernet (LAN2)	IEEE802.3u, 10BASE-T / 100BASE-TX Auto change Connecter: Modular Jack (RJ-45)					
	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 5 (Side x 4) Power Voltage: DC5V ±5%, Output Current: 500mA (Max), Maximum Communication Distance: 5m	
	Video	DVI-I Output Connector: DVI-I 29-pin Socket*2					
	RAS	Input (usable as an external reset input): 2 points, Output:2 points, Rated Voltage: DC12V Maximum Rated Current: 100mA Connecter: D-Sub 9-pin socket x 1					
	Sound	Speaker Output Connector: Mini Pin Jack x 1					
	DVD-R/W Drive	DVD-R/W Drive					

*1 Can switch between master and slave according to the settings.   *2 Only the analog RGB output is supported in models other than PL-3000B.

■General Specifications

Model		APL3700-KA	APL3700-KD	APL3600-KA	APL3600-KD	APL3000-BA	APL3000-BD
International Safety Standards		UL LISTED c UL LISTED CSR CE					
Comforming to Standards		UL508, CSA-C22.2 No.142-M1987, ANSI/ISA-12.12.01-2007*4, CSA-C22.2 No.213-M1987 (c-UL Approval)*4, EN55011 Class A, EN61000-6-2, EN60950-1 (AC models only), 47 CFR Part 15 Class A, KCC*5				UL508, CSA-C22.2 No.142-M1987, ANSI/ISA-12.12.01-2007*4, CSA-C22.2 No.213-M1987 (c-UL Approval)*4, EN55011 Class A, EN61000-6-2, EN60950-1 (AC models only), KCC*5	
Power Supply	Rated Voltage	AC100 to 240V	DC24V	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	AC85 to 264V	DC19.2 to 28.8V
	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 or less	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)	5ms or less	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)	5ms or less
	Power Consumption	145VA or less	145W or less	145VA or less	145W or less	2 slots: 120VA or less 4 slots: 145VA or less	2 slots: 120W or less 4 slots: 145W or less
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		10MΩ or more at DC500V (between charging and FG terminals)					
Ambient Operating Temperature		<With HDD> 5 to 50°C <Without HDD> 0 to 50°C					
Storage Temperature		-20 to +60°C					
Ambient Humidity		10 to 90%RH (No condensation, Wet-bulb temperature: <With HDD> 29°C or lower <Without HDD> 39°C or lower)					
Storage Humidity		10% to 90%RH (No condensation, Wet-bulb temperature: 39°C or lower)					
Pollution Degree		Pollution Degree 2					
Corrosive Gases		Free of corrosive gases					
Air Pressure Resistance (Operation Altitude)		800 to 1114hPa (2000m or lower above sea level)					
Vibration Resistance		JISB3502, IEC/EN 61131-2 compliant <With HDD> 10 to 57Hz Half Amplitude: 0.075mm, 57 to 150Hz Constant Acceleration: 9.8m/s², X, Y, Z directions 10 cycles (for 100 minutes) <Without HDD> 5 to 9Hz Half Amplitude: 3.5mm, 9 to 150Hz Constant Acceleration: 9.8m/s², 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)	Noise Voltage: 1000Vp-p, Pulse Duration: 1μs, Rise Time: 1ns (via noise simulator)	Noise Voltage: 1500Vp-p, Pulse width: 50ns, 500ns, 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 width: 50ns, 500ns, 1μs, Rise Time: 1ns (via noise simulator)	Noise Voltage: 1000Vp-p, Pulse Duration: 1μs, Rise Time: 1ns (via noise simulator)
Electrostatic Discharge Immunity		Contact Discharge Method: 6kV (IEC/EN 61000-4-2 Level 3)					
Grounding		Protection: Type D (Common to SG-FG)	Function: Type D (Common to SG-FG)	Protection: Type D (Common to SG-FG)	Function: Type D (Common to SG-FG)	Protection: Type D (Common to SG-FG)	Function: Type D (Common to SG-FG)
Ratings		Equivalent to IP65f, NEMA 4/4x/12(for the panel-installed front area when not using the front-face USB port unit)*3					
External Dimensions (W x H x D) (With DVD-R/W)		2 slots: W488mm [19.21in.] x H367mm [14.45in.] x D203mm [7.98in.] 4 slots: W 488mm [19.21in.] x H367mm [14.45in.] x D255mm [10.03 in.]		2 slots: W425mm [16.73in.] x H325mm [12.8in.] x D203.0mm [7.98in.] 4 slots: W425mm [16.73in.] x H325mm [12.8in.] x D255.0mm [10.03 in.]		2-slot: W243mm [9.57in.] x H163mm [6.42in.] x D277mm [10.91in.] 4-slot: W243mm [9.57in.] x H214mm [8.42in.] x D277mm [10.91in.]	
Weight (with DVD-R/W) (With DVD-R/W)		2 slots: Approx. 14.45kg [31.8lb] 4 slots: Approx. 15.45kg [34.0lb]		2 slots: Approx. 12.45kg [27.4lb] 4 slots: Approx. 13.45kg [29.6lb]		2-slot: 7.45kg [16.4lb] max. 4-slot: 8.95kg [19.7lb] max.	
Cooling Method		Forced Air Cooling by CPU Fan					

*3 Meets applicable testing requirements. Operation is not, however, guaranteed in every environment.   *4 Hazardous Location Class I, Division 2 Groups A, B, C, and D *5 AC model only

■Expansion Slots

Item	2 slot	4 slot	Board size
1st slot	PCI Rev.2.3 (5V)	PCI Rev.2.3 (5V)	174.63 [6.88] x 106.68mm [4.20in.]
2nd slot	PCI Rev.2.3 (5V)	PCI Rev.2.3 (5V)	174.63 [6.88] x 106.68mm [4.20in.]
3rd slot	—	PCI Rev.2.3 (5V)	250 [9.84] x 106.68mm [4.20in.]
4th slot	—	PCI Rev.2.3 (5V)	250 [9.84] x 106.68mm [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	

■Option Menu

APL3 **0** 00 — [ ] **BA** [ ] — **CD2G** — **4P** — **2G** — **XM250** — **M** — [ ]

Size	Main Unit Type / Power Supply		CPU	Expansion Slots	Memory	OS (Pre-installed HDD)	Others	Other Optional Items
9 19"Touch Panel LCD	**BA** Built-in Computer AC Power Supply	**KA** Panel Computer with Keypad AC Power Supply	**CD2G** Core® Duo 2.0GHz	**2P** PCI / 2 slot	**1G** 1GB	**XM250** Windows® XP ML ver.	**M** DVD-R/W Drive Unit	Add "- R" for RAID option — **R**
7 15" Touch Panel LCD	**BD** Built-in Computer DC Power Supply	**KD** Panel Computer with Keypad DC Power Supply	**CM18** Celeron™ M440 1.86GHz	**4P** PCI / 4 slot	**2G** 2GB	**XPC08** *8 GB CF Card Windows® XP Pro		
6 12.1" Touch Panel LCD	**TA** Panel Computer AC Power Supply				**4G** 4GB	**XM16S/ SA-128SA** 16-128GB SSD Windows XP ML ver		Add "-WG" for Win GP option — **WG**
0 Built-in (BOX)	**TD** Panel Computer DC Power Supply							

Choice Menu

*The XP Pro OS installed in units with an 8 GB flash card supports English, French, Spanish, Brazilian Portuguese, Japanese, Simplified and Traditional Chinese languages.

High-speed Processing Available with a Large, Thin Screen

PS-3710A/PS-3711A

Environmental Resistance · Compatible with WinGP · Front USB · RAS Function · Diskless · Service & Support

15" XGA

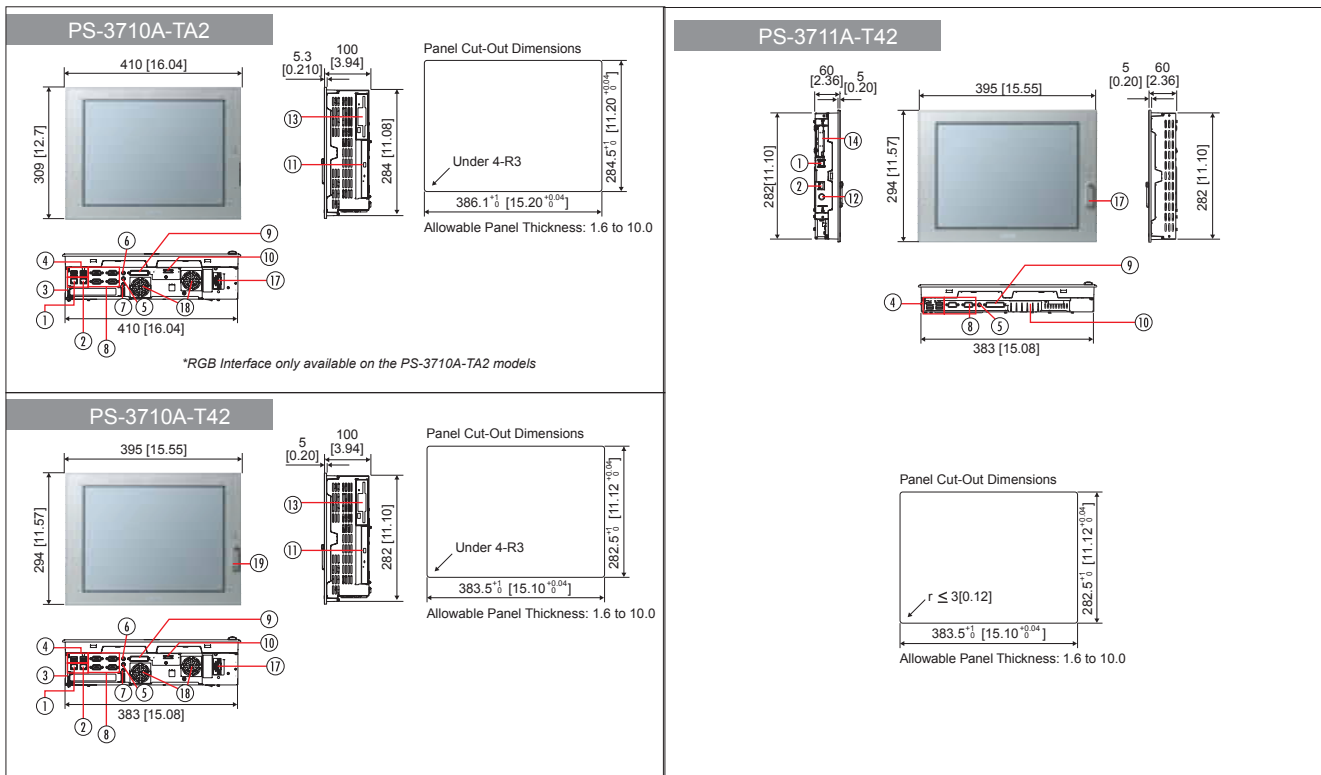**Pentium ® M 1.6GHz**

ULV Celeron M 1.0GHz

Class I Div 2

● Touch-panel mouse emulation
● Replaceable backlight
● Rugged aluminum body ● IP65f ● Compliant with the RoHS directive
● Wake On LAN compliant ● NEMA 4/4X/12 Rated
● WinGP option available ● VESA standard compliance arm/stand can be set (PS-3711A only)

	Size	CPU	Supported OS	Memory	PC/AT Standard Interfaces		Power Supply	Fanless	Expansion Slots
PS-3710A	15" XGA	Pentium® M 1.6GHz	Windows XP Pro Windows XP ML Windows XP Embedded	DDR 1GB or 2GB	CF Card X 1 Serial X 4 Ethernet X 2 USB X 4 or 5	PS/2 X 1 DVD-ROM X 1 FDD X 1 PCMCIA X 2	24VDC or 100-240 VAC	—	1 slot
PS-3710A		ULV Celeron M 1.0GHz		DDR 512MB or 1GB	CF Card X 1 Serial X 2 Ethernet X 2 USB X 5	PS/2 X 1 PCMCIA X 2		○	—

External Dimensions/Interfaces

Units: mm[in.]

PS-3710A-TA2

410 [16.04]
309 [12.7]

5.3 [0.210]
100 [3.94]
⑬
⑪
284 [11.08]

Panel Cut-Out Dimensions

Under 4-R3

284.5 $^{+1}_{0}$ [11.20 $^{+0.04}_{0}$]

386.1 $^{+1}_{0}$ [15.20 $^{+0.04}_{0}$]

Allowable Panel Thickness: 1.6 to 10.0

⑥ ⑨ ④ ⑩ ③ ⑰ ① ⑦⑤ ⑱ ②⑧
410 [16.04]

RGB Interface only available on the PS-3710A-TA2 models

PS-3710A-T42

395 [15.55]
294 [11.57]

5 [0.20]
100 [3.94]
⑬
⑪
282 [11.10]

Panel Cut-Out Dimensions

Under 4-R3

282.5 $^{+1}_{0}$ [11.12 $^{+0.04}_{0}$]

383.5 $^{+1}_{0}$ [15.10 $^{+0.04}_{0}$]

Allowable Panel Thickness: 1.6 to 10.0

⑥ ⑨ ④ ⑩ ③ ⑰ ① ⑦⑤ ⑱ ②⑧ ⑲
383 [15.08]

PS-3711A-T42

60 [2.36] 5 [0.20]
282[11.10]
① ②
⑭
⑫

395 [15.55]
294 [11.57]

5 [0.20] 60 [2.36]
⑰
282 [11.10]

④ ⑧ ⑤ ⑨ ⑩
383 [15.08]

Panel Cut-Out Dimensions

r ≤ 3[0.12]

282.5 $^{+1}_{0}$ [11.12 $^{+0.04}_{0}$]

383.5 $^{+1}_{0}$ [15.10 $^{+0.04}_{0}$]

Allowable Panel Thickness: 1.6 to 10.0

Parts Names

① Ethernet Interface (10 Base-T/100 Base-TX Auto change)
② Ethernet Interface (10BASE-T/100BASE-TX/1000BASE-T Auto change)
③ Expansion Slot
④ USB Interface
⑤ Speaker Output Interface
⑥ Mic Input Interface
⑦ Line Input Interface
⑧ Serial (RS-232C) Interface
⑨ RAS Interface
⑩ CF Card Slot
⑪ DVD-ROM Drive
⑫ CD-ROM Drive
⑬ Floppy Drive
⑭ Printer Interface
⑮ Mouse Keyboard Interface (PS/2)
⑯ AC Power Interface
⑰ Power Connector (European Terminal)
⑱ System Fan
⑲ Front USB Interface (available only on T42 models)
⑳ RGB Interface (PS3710A-TA2 models only, located on left side, not shown)

Lineup · APL3000 SERIES · PS3000 SERIES · FP3000 SERIES · Option · WinGP · Pro-face Approach

■ Performance Specifications

Model	PS3710A-T42-24V	PS3710A-TA2	PS3711A-TA2	PS3711A-T42-24V
Display Type	TFT Color LCD			
Display Size	15"			
Display Colors	262,144 colors			
Display Dots(Pixels)	1024 x 768 pixels (XGA)			
Backlight	CCFL (Replaceable)			
Effective Display Area	W304.1 [11.97] x H228.1mm [8.98in.]			
Brightness Control	4 levels (adjustment using software)			
Supported OS	Windows® XP Pro / XP ML XP / XP Embedded ML			
CPU	Intel® Pentium® M 1.6GHz		ULV Celeron® M 1.0 GHz	
L2 Cache Memory	1MB (Built in CPU)		512MB (Built in the CPU)	
Main Memory	DDR SDRAM (PC2700) 1GB / 2GB (SO-DIMM x 2 slots)		DDR SDRAM (PC2700) 512MB / 1GB (SO-DIMM x 1 slot)	
Chip Set	Intel 855GME+ICH4			
Graphic Accelerator	Built in intel® 855GME			
Video Memory	Max 64MB (UMA type)			
Graphics	XGA (1024 x 768 pixels)			
BIOS	Phoenix® First BIOS Embedded Pro			
Touch Panel Type	Resistive Film (Analog)			
Touch Panel Resolution	1024 x 1024			
Interface — IDE	HDD or SSD x 1 (primary master), CF-Card slot (Type II) x 1 (primary slave), DVD drive (secondary master)[*1]			
Interface — Serial (COM1)	RS-232C (RI / +5V switchable) Connector: D-Sub 9-pin plug			
Interface — Serial (COM2)	RS-232C (RI / +5V switchable) Connector: D-Sub 9-pin plug			
Interface — Serial (COM3)	RS-232C (RS-232C / 422 / 485 switchable) Connector: D-Sub 9-pin plug			
Interface — Serial (COM4)	RS-232C (Touch Panel and Exclusive) Connector: D-Sub 9-pin plug			
Interface — Ethernet (LAN1)	IEEE802.3u, 10 Base-T/100 Base-TX Auto change Connector: Modular Jack (RJ-45) x 1			
Interface — Ethernet (LAN2)	IIEEE802.3u, 10BASE-T / 100BASE-TX / 1000BASE-T Auto change Connector: Modular Jack (RJ-45) x 1			
Interface — USB	USB2.0 Connecter: USB Type A x 5 (T42 is only model with Front USB x 1, All models have rear ports x 4) Power Voltage: DC5V ±5%, Output Current: 500mA (Max), Maximum Communication Distance: 5m			
Interface — Mouse	—			
Interface — Keyboard	PS2, Connector: Mini DIN 6pin			
Interface — RAS	Input (usable as an external reset input): 4 points, Output: 5 points, Rated Voltage: DC12V, Maximum Rated Current: 100mA Connector: D-Sub 25-pin socket x 1			
Interface — Sound	Speaker Output, Line Input, Mic Input Connector: Mini Pin Jack x 3			
Interface — Floppy Drive	Floppy Drive			
Interface — CD/DVD-ROM Drive	DVD-ROM Drive			
Interface — PCMCIA	PC card slot, Connector compatible with CardBus (*Zoomed Video and Sound functions excluded): Type II, Type III x 2			
Interface — RGB	—	Available		—

*1 Can switch between master and slave according to the settings.

■ General Specifications

Model	PS3710A-T42	PS3710A-T42-24V	PS3711A-T42	PS3711A-T42-24V
International Safety Standards	UL LISTED cUL LISTED CE 〔*5〕			
Comforming to Standards	UL508, CSA-C22.2, No.142-M1987 (c-UL Approval), ANSI/ISA-12.12.01-2007[*4], CSA-C22.2 No.213-M1987 (c-UL Approval), 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
Power Supply — Rated Voltage Range	AC85 to AC265V	DC19.2 to 28.8V	AC85 to AC265V	DC19.2 to 28.8V
Power Supply — Rated Frequency	50 / 60Hz	—	50 / 60Hz	—
Power Supply — 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.)
Power Supply — 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[*2]	<With HDD> 5°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	
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.)		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 (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	<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.)[*3]			
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 approx.	8kg[17.6lb] max. (main unit only)		6kg[13.2lb] max. (main unit only)	
Cooling Method	Forced air cooling by the CPU fan		Natural air cooling by Heat Sink	

*2 "Ambient Operating Temperature" indicates the cabinet interior temperature or panel face temperature. *3 Meets the appropriate test requirements for compatibility. Note that operation is not guaranteed in every environment.
*4 Suitable for use in Class I, Division 2, Groups A, B, C, and D Hazardous Locations only. *5 AC models only.

■ Expansion Slots

Item	PS-3710A	Board size
1st slot	PCI Rev.2.2 (5V)	240 [9.45] x 106.68mm [4.20in.]
Power Supply	DC5V: 1.5A, DC12V: 0.5A, DC-12V: 0.1A, DC-3.3V: 0.5A	—

12.1" XGA with Rich Expression Screen Display

PS-3650A/PS-3651A

Battery | Environmental Resistance | Compatible with WinGP | Front USB | RAS Function | Diskless | Service & Support

12.1" XGA

Celeron® M 1.5GHz

Celeron M 1.0GHz

- Backup battery unit can be built-in
- Touch-panel mouse emulation
- Replaceable backlight
- Rugged aluminum body
- IP65f
- Compliant with the RoHS directive
- NEMA 4/4X/12 Rated
- WinGP option available

	Size	CPU	Supported OS	Memory	PC/AT Standard Interfaces	Power Supply	Fanless	Expansion Slots
PS-3650A	12.1" XGA	Celeron® M 1.5GHz	Windows XP Pro XP ML XP Embedded ML	DDR 1GB	CFCard X 1 Serial X 1 or 2 Ethernet X 2 USB X 5 PCMCIA X 1	AC 100 to 240V	—	1 slot
PS-3651A		Celeron® M 1.0GHz		DDR 512MB or 1GB		DC24V	○	—

Special Option to Build in PS-3650A/PS3651A (AC Power Supply)

For preventing trouble caused by blackouts!! New battery unit can be set anywhere.

PS-3650A

103 [4.06] 5 [0.20] 227 [8.94]

Fits precisely into the PC expansion unit.

Units: mm [in.]

PS-3651A

78.6[3.09] 5[0.20] 227[8.94]

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

Units: mm [in.]
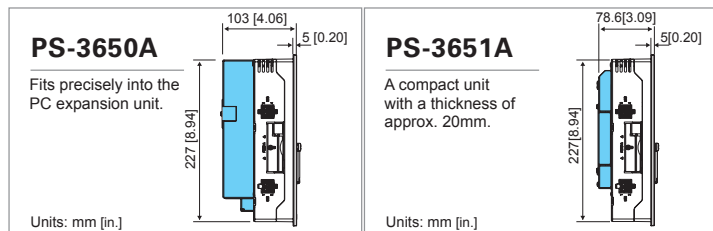
Item		Specifications
Charge current	Non-full charge Standard charge	60mA ±10%
	After full charge Trickle charge	20mA ±10%
Allowable Voltage Drop		1 second or less *1
Cooling Method		Natural Air Cooling
Weight		900g or less
External Dimensions*2		W117 [4.61] x H189 [7.44] x D20.3mm [0.80in.]

*1 Starts each backup mode operation, going into "blackout" state after over one second of blackout.
*2 Dimensions for battery unit only.

IMPORTANT ● 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

Units: mm [in.]

PS-3650A

103 [4.06] 5 [0.20] 60 [2.36] 227 [8.94]

313 [12.32] 239 [9.41] 301 [11.85]

Panel Cut-Out Dimensions

Under 4-R3

301.5 $^{+1}_{0}$ [11.87 $^{+0.04}_{0}$] 227.5 $^{+1}_{0}$ [8.96 $^{+0.04}_{0}$]

Allowable Panel Thickness: 1.6 to 10.0

Parts Names
① Ethernet Interface (10BASE-T/100BASE-TX Auto change)
② Expansion Slot
③ USB Interface
④ Speaker Output Interface
⑤ Serial (RS-232C) Interface
⑥ RAS Interface
⑦ CF Card Slot (IDE Connection)
⑧ Power Connector (European Terminal)
⑨ System Fan
⑩ Front USB Interface
⑪ PCMCIA Interface

PS-3651A

60 [2.36] 5 [0.20] 227 [8.94]

313 [12.32] 239 [9.41] 301 [11.85]

Panel Cut-Out Dimensions

r ≤ 3[0.12]

301.5 $^{+1}_{0}$ [11.87 $^{+0.04}_{0}$] 227.5 $^{+1}_{0}$ [8.96 $^{+0.04}_{0}$]

Allowable Panel Thickness: 1.6 to 10.0

Lineup | APL3000 SERIES | PS3000 SERIES | FP3000 SERIES | Option | WinGP | Pro-face Approach

■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 Pro / XP ML / XP Embedded ML							
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) 1GB (SO-DIMM x 1 slot)				DDR SDRAM (PC2700) 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 or SSD							
Interface — IDE	CF Card Slot (TypeII) x1							
Interface — Serial (COM1)	RS-232C (RS-232C / 422 / 485 , RI / +5V switcheable) Connector: D-Sub 9-pin plug							
Interface — Serial (COM2)[*2]	RS-232 (RI / +5V switcheable) Connector: D-Sub 9 pin plug							
Interface — Ethernet (LAN1)	10 BASE-T / 100 BASE-TX Auto change Connector: Modular Jack (RJ-45) x 1[*1]							
Interface — Ethernet (LAN2)	10 BASE-T / 100 BASE-TX / 1000 BASE-T Auto change Connector: Modular Jack (RJ-45) x 1[*1]							
Interface — USB	USB2.0 Conneter: 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							
Interface — 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							
Interface — Sound	SPEAKER OUTPUT Connector: MINI-JACKφ3.5 x 1							
Interface — 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 LISTED, cUL LISTED, CE, ℅ [*6]							
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	
Power Supply — Rated Voltage Range	AC85 to 264V		DC19.2 to 28.8V		AC85 to 264V		DC19.2 to 28.8V	
Power Supply — Rated Frequency	50 / 60Hz		—		50 / 60Hz		—	
Power Supply — 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.)	
Power Supply — Power Consumption	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)	
Insulation Resistance	DC 500V 10MΩ (min.) (between charging and FG terminals)							
Ambient Operating Temperature	<With HDD> 5 to 50℃	<Without HDD> 0 to 50℃			<With HDD> 5 to 45℃	<Without HDD> 0 to 50℃		
Storage Temperature	-20 to +60℃							
Ambient Humidity	10 to 90%RH (not Condensing, Wet bulb temperature: <Without HDD> 39℃ max., <With HDD> 29℃ max.)							
Storage Humidity	10 to 90%RH (not Condensing,Wet bulb temperature : 39℃ 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	<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/EN 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.)[*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 approx.	About 4.5kg [9.9lb] max. (Main unit only)				About 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 [6.88] x 106.68mm [4.20in.]
Power Supply	DC5V: 1.5A, DC12V: 0.5A, -DC12V: 0.1A, DC3.3V: 0.5A	

■Option Menu

Main Unit	Description	COM1	COM2	RAS
PS-3650A-T42 / PS-3650A-T42-24V PS3651A-T42 / PS3651A-T42-24V 12.1" touch panel LCD	1 Serial port and 1 RAS port model	RS232C/422/485	—	D-sub 9-pin
PS3650A-T42S / PS3650A-T42S-24V PS3651A-T42S / PS3651A-T42S-24V 12.1" touch panel LCD	2 Serial ports and No RAS port model	RS232C/422/485	RS232C	—

Perfectly Suited for Space Saving and Diskless Operation

PS-3450A / PS-3451A / PS-3000B / PS-3001B
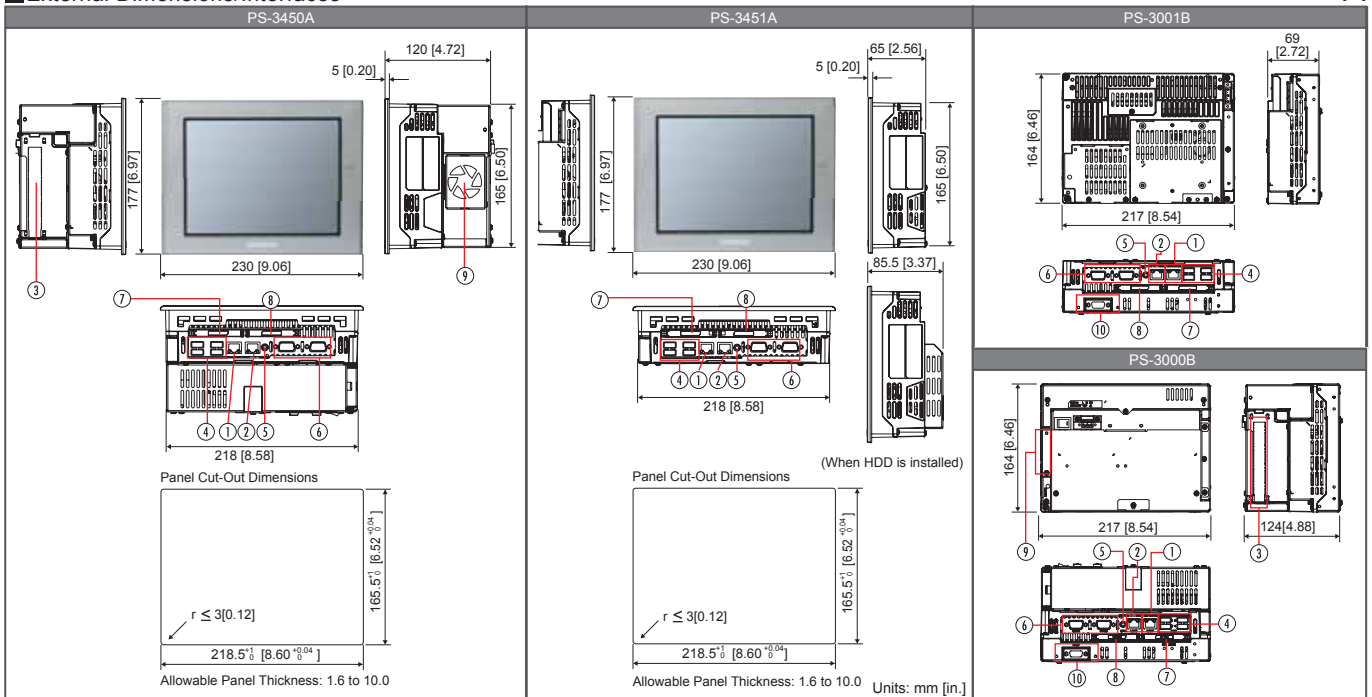
8.4" SVGA

ULV Celeron® M 1.0GHz

ULV Celeron® M 600MHz

- ● Touch-panel mouse emulation(Except for PS-3000B and PS-3001B)
- ● Rugged aluminum body
- ● IP65f (Except for PS-3000B and PS-3001B) ● NEMA 4/4X/12 Rated (except for PS-3
- ● Compliant with the RoHS directive ● Wake On LAN compliant
- ● WinGP option available ● VESA standard compliance arm/stand can be set (Diskless PS3451A only)

	Size	CPU	Supported OS	Memory	PC/AT Standard Interfaces	Power Supply	Fanless	Expansion Slots
PS-3450A (AC Model)	8.4" SVGA	ULV Celeron® M 1.0GHz	Windows® XP Pro XP ML XP Embedded	DDR 1GB	CFCard X 2 Serial X 2 Ethernet X 2 USB X 4 Analog X 1 (PS3000/3001B Only)	AC100 to 240V	—	1 slot
PS-3450A (DC Model)		ULV Celeron® M 600MHz				DC24V		
PS-3451A (DC Model)				DDR 512MB or 1GB		DC24V	○	—
PS-3000B	Node PC	ULV Celeron® M 1.0GHz	Windows® XP Pro XP Embedded	DDR 1GB		AC100 to 240V	—	1 slot
PS-3001B		ULV Celeron® M 600MHz		DDR 512MB or 1GB		DC24V	○	—

■External Dimensions/Interfaces

Units: mm[in.]

PS-3450A

5 [0.20] 120 [4.72]
177 [6.97] 165 [6.50]
230 [9.06]
218 [8.58]

Panel Cut-Out Dimensions

165.5^{+1}_{0} [$6.52^{+0.04}_{0}$]
r ≤ 3[0.12]
218.5^{+1}_{0} [$8.60^{+0.04}_{0}$]
Allowable Panel Thickness: 1.6 to 10.0

PS-3451A

5 [0.20] 65 [2.56]
177 [6.97] 165 [6.50]
230 [9.06] 85.5 [3.37]
218 [8.58]

(When HDD is installed)

Panel Cut-Out Dimensions

165.5^{+1}_{0} [$6.52^{+0.04}_{0}$]
r ≤ 3[0.12]
218.5^{+1}_{0} [$8.60^{+0.04}_{0}$]
Allowable Panel Thickness: 1.6 to 10.0 Units: mm [in.]

PS-3001B

69 [2.72]
164 [6.46]
217 [8.54]

PS-3000B

164 [6.46]
217 [8.54] 124[4.88]

Parts Names

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)			VGA (640 x 480 pixels) to (1920 x 1080 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® XP Pro / XP ML / XP Embedded ML			Windows® XP / Windows® XP Embedded	
CPU	Intel® ULV Celeron® M 1.0GHz	Intel® ULV Celeron® M 600MHz		Intel® ULV Celeron® M 1.0GHz	Intel® ULV Celeron® M 600MHz
L2 Cache Memory		512KB (built in the CPU)			512KB (built in the CPU)
Main Memory	DDR SDRAM (PC2700) 1GB (SO-DIMM x 1 slot)		DDR SDRAM (PC2700) 512MB / 1GB (SO-DIMM x 1 slot)	DDR SDRAM (PC2700) 1GB (SO-DIMM x 1 slot)	DDR SDRAM (PC2700) 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 / IDE	2.5-inch HDD or SSD x 1*1 (Primary Master), CF Card Slot (Type I/II) x 2 *1 (Primary Slave and Secondary Master)				CF Card Slot (Type I/II) x 2 (Primary Master and Secondary Master)
Interface / Serial (COM1)	RS-232C Connector: D-Sub 9-pin plug				
Interface / Serial (COM2)	RS-232C (RS-232C / 422 / 485 RI /+5V switchable) Connector: D-Sub 9-pin plug				
Interface / Ethernet (LAN1)	10BASE-T / 100BASE-TX Auto change Connecter: Modular Jack (RJ-45) x 1				
Interface / Ethernet (LAN2)	10BASE-T / 100BASE-TX / 1000BASE-T Auto change Connecter: Modular Jack (RJ-45) x 1*2				
Interface / USB	USB2.0 Connecter: USB Type A x 4 Power Voltage: DC5V ±5%, Output Current: 500mA (max.), Maximum Communication Distance: 5m				
Interface / Sound	SPEAKER OUTPUT Connector: MINI-JACKφ3.5 x 1				

*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	ⓤ LISTED ⓒ CE			ⓤ LISTED ⓒ ⓤ LISTED ⓒ CE *5	
Comforming 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
Power Supply / Rated Voltage Range	AC85 to 264V	DC19.2 to 28.8V		AC85 to 264V	DC19.2 to 28.8V
Power Supply / Rated Frequency	50 / 60Hz	—		50 / 60Hz	—
Power Supply / 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 Supply / 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)
Insulation Resistance	DC 500V 10MΩ (min.) (between charging and FG terminals)				
Ambient Operating Temperature	<With HDD> 5 to 50¼C <Without HDD> 0 to 50¼C	<With HDD> 5 to 45¼C <Without HDD> 0 to 50¼C		<With HDD> 5 to 50¼C <Without HDD> 0 to 50¼C	0 to 50¼C
Storage Temperature	-20 to + 60¼C				
Ambient Humidity	10 to 90%RH (not Condensing, Wet bulb temperature: <Without HDD> 39¼C max., <With HDD> 29¼C max.)			10 to 90%RH not Condensing, Wet bulb temperature: 39¼C max.	
Storage Humidity	10% to 90%RH (not Condensing, Wet bulb temperature : 39¼C 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	<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.)*3			—	
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.]*4		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]
Weight approx.	About 4.0kg [8.8lb] max. (Main unit only)	About 3.5kg [7.7lb] max. (Main unit only)		Approx. 3.0kg [6.6lb] max.(unit only)	Approx. 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	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		Item	PS-3000-BA	Board size
1st slot	PCI Rev.2.2 (5V)	174.63 [6.88] x 106.68mm [4.20in]		1st slot	PCI	106.68 [4.20] x 174.63mm [6.88in]
Power Supply	DC5V: 1.0A, DC12V: 0.25A, DC-12V: 0.1A, DC3.3V: 0.5A	—		Power Supply	DC5V: 1.0A, DC12V: 0.25A, DC-12V: 0.1A, DC3.3V: 0.5A	—

*The XP Pro OS installed in units with an 8 GB flash card supports English, French, Spanish, Brazilian Portuguese, Japanese, Simplified and Traditional Chinese languages.

Lineup

APL3000 SERIES

PS3000 SERIES

FP3000 SERIES

Option

WinGP

Pro-face Approach

High Visibility Plus Maintenance Efficacy

FP-3900T / 3710T / 3650T / 3600T / 3500T / 3710K

Environmental Resistance | Front USB | Keypad Type | Service & Support

19" SXGA	15" XGA
12.1" SVGA	10.4" VGA

● Touch-panel mouse emulation
● VESA standard compliance back cover
  (FP-3650, 3600, 3500 need optional rear cover)
● IP65f   ● Compliant with the RoHS directive
● NEMA 4/4x/12 rated front face
● Class I, Division 2 Hazardous Locations
  (FP-3900, FP-3710K only)

	Size	Graphics	DVI	Analog RGB	Display Colors	Power Supply	USB I/F	Backlight Replacement	Housing
FP-3900T	19"	SXGA			16,777,216 colors	AC 100 to 240V	USB x 1 (Front Slot)*1	—	Rugged aluminum body
FP-3710T	15"	XGA							
FP-3650T	12.1"	XGA	○	○	262,144 colors	DC24V AC100 to 240V	USB x 1 (Bottom Slot)	○	Resin
FP-3600T		SVGA							
FP-3500T	10.4"	VGA				DC24V AC100 to 240V			
FP-3710K	15"	XGA			16,777,216 colors	AC100 to 240V	USB x 1 (Front Slot)		Rugged aluminum body

*1 Non front USB type is also available.

External Dimensions/Interfaces

Units: mm[in.]

FP-3900T (Front USB Type)

460 [18.11]
390 [15.35]
12.7 [0.50]
77.7 [3.06]
352 [13.86]
419 [16.50]

Panel Cut-Out Dimensions
Under 4-R3
352.5$^{+1}_{0}$ [13.88$^{+0.04}_{0}$]
419.5$^{+1}_{0}$ [16.52$^{+0.04}_{0}$]
Allowable Panel Thickness: 1.6 to 10.0

FP-3710T (Front USB Type)

395 [15.55]
294 [11.57]
5 [0.20]
60 [2.36]
282 [11.10]
383 [15.08]

Panel Cut-Out Dimensions
Under 4-R3
282.5$^{+1}_{0}$ [11.12$^{+0.04}_{0}$]
383.5$^{+1}_{0}$ [15.10$^{+0.04}_{0}$]
Allowable Panel Thickness: 1.6 to 10.0

FP-3650T / FP-3600T / FP-3500T

317 [13.48]
243 [9.57]
8 [0.31]
58 [2.28]
227 [8.94]
301 [11.85]

The from photo is for FS-36**

Panel Cut-Out Dimensions
Under 4-R3
227.5$^{+1}_{0}$ [8.96$^{+0.04}_{0}$]
301.5$^{+1}_{0}$ [11.87$^{+0.04}_{0}$]
Allowable Panel Thickness: 1.6 to 10.0

FP-3710K

488 [19.21]
367 [14.45]
10 [0.39]
63 [2.48]
313 [12.32]
441 [17.36]

Panel Cut-Out Dimensions
Under 4-R3
313.5$^{+1}_{0}$ [12.34$^{+0.04}_{0}$]
441.5$^{+1}_{0}$ [17.38$^{+0.04}_{0}$]
Allowable Panel Thickness: 1.6 to 10.0

Parts Names			
① DVI-D I/F Interface	④ USB Interface (Type B)	⑦ Power Connector (European Terminal)
② Analog RGB Interface	⑤ RS-232C Interface	⑧ Front USB Interface (Type A)
③ USB Interface (Type A)	⑥ Setting Switch (Slide switch)	

Lineup · APL3000 SERIES · PS3000 SERIES · **FP3000 SERIES** · Option · WinGP · Pro-face Approach

FP-3900T / 3710T / 3650T / 3600T / 3500T / 3710K

■ Performance Specifications

Model	FP3900-T41-U	FP3900-T41	FP3710-T41-U	FP3710-T41	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				16,777,216 colors
Display Dots (Pixels)	1280 x 1024 pixels (SXGA)		1024 x 768 pixels (XGA)			800 x 600 pixels (SVGA)		640 x 480 pixels (VGA)		1024 x 768 pixels (XGA)
Backlight	CCFL (Backlight replacement : Sendback system)		CCFL (Replaceable)							
Effective Display Area	W376.32 [14.82] x H301.056mm [11.85in.]		W304.1 [11.97] x H228.1mm [8.98in.]		W245.76 [9.86] x H184.32mm [7.26in.]	W248.0 [9.76] x H186.5mm [7.34in.]		W211.2 [8.31] x H158.4mm [6.24in.]		W304.1 [11.97] x H228.1mm [8.98in.]
Brightness Control	Adjustment available via OSD									
Graphics	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)
Touch Panel Type	Resistive Film (Analog)									
Touch Panel Resolution	1024 x 1024									
Touch Panel Interface	RS-232C or USB2.0 (Type B)									
Number of Key Switches										74
Key Switch Type										Membrane Switch
Interface — USB[1]	USB2.0 Connector: USB Type A x 1 Power Voltage: 5VDC±5%, Output Current: 500mA (Max), Maximum Communication Distance: 5m		USB2.0 Connector: USB Type A x 1 Power Voltage: 5VDC±5%, Output Current: 500mA (Max), Maximum Communication Distance: 5m		USB2.0[2] Connector: USB Type A x 1 Power Voltage: 5VDC±5%, Output Current: 500mA (Max), Maximum Communication Distance: 5m					USB2.0 Connector: USB Type A x 1 Power Voltage: 5VDC±5%, Output Current: 500mA (Max), Maximum Communication Distance : 5m
Interface — Video			DVI-D Input[3] Connector: DVI-I 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.

■ General Specifications

Model	FP3900-T41-U	FP3900-T41	FP3710-T41-U	FP3710-T41	FP3650-T41	FP3600-T11	FP3600-T41-24V	FP3500-T11	FP3500-T41-24V	FP3710-K41-U
International Safety Standards	UL LISTED, c-UL LISTED, CSA, CE		UL LISTED, c-UL LISTED, CE, KCC		UL, c-UL, CE	KCC	UL LISTED, c-UL LISTED, CSA, CE	KCC	UL LISTED, c-UL LISTED, CSA, CE	UL LISTED, c-UL LISTED, CSA, CE
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], EN55011 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), EN61000-6-2, EN60950-1 First Edition, 47 CFR Part 15 Class A, KCC		UL60950-1(First Edition), CSA-C22.2, No.60950-1-03(c-UL Approval) EN55011 Class A, EN61000-6-2, EN60950-1 First Edition	KCC	UL508, CSA-C22.2, No.142-M1987, EN55011 Class A, EN61000-6-2	KCC	UL508, CSA-C22.2, No.142-M1987, EN55011 Class A, EN61000-6-2	UL508, CSA-C22.2, No.142-M1987(c-UL Approval), ANSI/ISA-12.12.01-2007[*5], CSA-C22.2 No.213-M1987(c-UL Approval)[*5] EN55011 Class A, EN61000-6-2, EN60950-1 First Edition, 47 CFR Part 15 Class A
Power Supply — Rated Voltage	AC100 to 240V					DC24V	AC100 to 240V	DC24V	AC100 to 240V	
Power Supply — Power Consumption	AC100V at 1.1A or less AC240V at 0.7A or less		AC100V at 0.9A or less AC240V at 0.45A or less			2.08A or less	AC100V at 0.9A or less AC240V at 0.45A or less	2.08A or less	AC100V at 1.1A or less AC240V at 0.7A or less	
Power Supply — Allowable Voltage Drop	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)					10ms or less	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)	10ms or less	Shorter than 1 cycle (Note that pause occurrences must be more than 1 second apart)	
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)	AC1000V at 20mA for 1 minute (between charging and FG terminals)	AC1000V at 20mA for 1 minute (between charging and FG terminals)	
Insulation Resistance	10MΩ or more at DC500V (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 (No condensation, Wet-bulb temperature: 39°C or lower)									
Storage Humidity	10% to 90%RH (No condensation, Wet-bulb temperature: 39°C or lower)									
Corrosive Gases	Free of corrosive gases									
Vibration Resistance	JIS B3502, IEC/EN 61131-2 compliant 5 to 9Hz Half Amplitude: 3.5mm 9 to 150Hz Constant Acceleration: 9.8m/s² in 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: 1500Vp-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/EN 61000-4-2 Level 3)									
Grounding	Protection: Type D (Common to SG-FG)					Function: Type D (Common to SG-FG)	Protection: Type D (Common to SG-FG)	Function: Type D (Common to SG-FG)	Protection: Type D (Common to SG-FG)	
Ratings	Equivalent to IP65f, NEMA 4/4X/12, (When not using Front USB)[*4]									
External Dimensions	W460 [18.11] x H390 [15.35] x D77.7mm [3.06in.]		W395 [15.55] x H294 [11.57] x D60mm [2.36in.]			W317 [12.48] x H243 [9.57] x D58mm [2.28in.]				W488 [19.21] x H367 [14.45] x D63mm [2.48in.]
Weight	About 10.0kg (22.0lb) or less (Main unit only)		About 7.0kg (15.4lb) or less (Main unit only)			About 3.5kg (7.7lb) or less (Main unit only)				About 8.0kg (17.6lb) or less (Main unit only)

*4 Meets applicable testing requirements. Operation is not, however, guaranteed in every environment. *5 Hazardous Location Class I, Division 2 Groups A, B, C, and D

■ 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)

Optional Items List

■Software

Product Name	Model	Description
GP-Pro EX Ver.2.6	EX-ED-V26	Screen-creation software
Pro-Server EX Ver.1.2 Developer	EX-SDV-V12	License for date collection and transfer by connecting an IPC to a PC via the Ethernet *1
Pro-Server EX Ver.1.2 Developer License	EX-SED-LICENSE	License for Pro-Server EX Development Environment *2
Pro-Server EX Ver.1.2 Runtime License	EX-SRT-LICENSE	License for Pro-Server EX Runtime *3
MES Action License	EX-MES-LICENSE-V10	License key to connect Pro-Server EX and database

*1 Includes the settings editor and Runtime. *2 Purchase this product when installing the settings editor and Runtime in a second or subsequent PC.
*3 Purchase this license when installing Runtime only in a second or subsequent PC. One license is required for each PC.

■APL3000 SERIES

	Product Name		Model	APL-3900T	APL-3700T	APL-3600T	APL-3700K	APL-3600K	APL-3000B
Accessory Options	DIM Module DDR	512MB	CA7-DDR2-512MB-01	●	●	●	●	●	●
		1GB	CA7-DDR2-1GB-01	●	●	●	●	●	●
		2GB	CA7-DDR2-2GB-01	●	●	●	●	●	●
	RAID Kit		RAID-KIT-01	●	●	●	●	●	●
	HDD Unit *1	250GB	APL3000-HD250	●	●	●	●	●	●
	SSD unit *1	16GB	APL3000-SD16A	●	●	●	●	●	●
		32GB	APL3000-SD32A	●	●	●	●	●	●
		64GB	APL3000-SD64A	●	●	●	●	●	●
		128GB	APL3000-SD128A	●	●	●	●	●	●
		16GB	APL3000-SD16	●	●	●	●	●	●
	CF Card	1GB	CA6-CFCALL/1GB-01	●	●	●	●	●	●
		2GB	CA8-CFCALL/2GB-01	●	●	●	●	●	●
		8GB	144766	●	●	●	●	●	●
		16GB	150100	●	●	●	●	●	●
	USB Front Cable	1m	CA5-USBEXT-01	●	●	●	●	●	●
	USB Cable	5m	FP-US00	●	●	●	●	●	●
	RS-232C Cable	5m	FP61V-IS00-O	●	●	●	●	●	●
	DVI Cable	5m	FP-DV01-50	●	●	●	●	●	●
		10m	FP-DV01-100						●
	Analog RGB Cable *2	4.5m	FP-CV02-45	●	●	●	●	●	●
	DVI-D/RGB Conversion Cable	5m	CA7-CBLCVRGB-01	●	●	●	●	●	●
	DVI-D/RGB Branch Cable	15cm	CA7-CBLCVDVI-D/RGB-01	●*4	●*4	●*4	●*4	●*4	●
	Screen Protection Sheet (5 Sheets/set)	For 12.1" screen	CA7-DFS12-01			●		●	
		For 15" screen	CA3-DFS15-01		●		●		
		For 19" screen	CA7-DFS19-01	●					
	External USB Floppy		9000-USBF	●	●	●	●	●	●
	AC Power Connector (Right angle) (5/set)		CA7-ACCNLR-01	●	●	●	●	●	●
	APL3700T cutout adapter kit	For 4715T cutout	145053 (for 4715T cutout)		●				
	APL3600T cutout adapter kit	For PL69x0 cutout	APL3600-ATP69X0-01			●			
Maintenance Options*3	Installation Gasket	For 12.1" screen	CA7-WPG12-01			●			
		For 15" screen	CA7-WPG15-01		●		●		
		For 15" keypad screen	CA7-WPG15K-01					●	
		For 19" screen	CA7-WPG19-01	●					
	Backlight	For 12.1" screen	CA3-BLU12-01			●		●	
		For 15" Screen	CA7-BLU15-01		●		●		
	Installation Fastener		APL-ATFB-01						●
			CA3-ATFALL-01	●	●	●	●	●	
	AC Power Connector (Straight) (5/set)		CA7-ACCNL-01	●	●	●	●	●	●
	DC Power Connector (Right angle) (5/set)		CA7-DCCNL-01	●	●	●	●	●	●

*1 The operating system has not been installed. *2 Use when using the DVI-D/RGB Branch Cable *3 Standard attachment for all models. Order for replacement when they are damaged or lost.
*4 RGB signal only

■PS3000 SERIES (PS-3710A/3711A)

	Product Name		Model	PS-3710A	PS-3711A
Accessory Options	DIM Module DDR	1GB	PSA-DDR1G	●	●
	HDD Unit *1	60GB	PS371XA-HD60P	●	●
	SSD Unit *1	16GB	PS371XA-SD16A	●	●
		32GB	PS371XA-SD32A	●	●
		64GB	PS371XA-SD64A	●	●
		16GB	PS371XA-SD16P	●	●
	CF Card	512MB	CA3-CFCALL/512MB-01	●	●
		1GB	CA6-CFCALL/1GB-01	●	●
		2GB	CA8-CFCALL/2GB-01	●	●
		8GB	144766	●	●
		16GB	150100	●	●
	AC Analog RGB Cable	for TA2 model	FP-CV02-45	●	●
	USB Front Cable	1m	CA5-USBEXT-01	●	
	Unit Stand*3		CA4-STD15-01		●
	Unit Cover		CA4-CVR15-01		●
	Unit Power Supply*4		CA4-PWU15-01		●
	Screen Protection Sheet (5 Sheets/set)		CA3-DFS15-01	●	●
Maintenance Options*2	Installation Gasket	for T41 and TA2	CA3-WPG15-01-PA1 (For PS3710A-T41/TA2 models)	●	●
		for T42 model	CA3-WPG15-01	●	●
	Backlight	for T41 model	CA3-BLU15-01 (For PS3710A-T41 models)	●	●
		for T42 and TA2	CA7-BLU15-01 (For PS3710A-T42/TA2 models)	●	●
	Installation Fastener		CA3-ATFALL-01	●	●
	AC Power Connector (Straight) (5/set)		CA7-ACCNL-01	●	●
	DC Power Connector (Straight) (5/set)		CA7-DCCNL-01	●	
	DC Power Connector (Right angle) (5/set)		CA5-DCCNL-01		●

*1 The operating system has not been installed. *2 Standard attachments for all models. Order for replacements when those items are damaged or lost.
*3 Requires for the Unit Cover. *4 When the unit stand is used, CE/UL standards are not applicable to the PS-3711A and power supply unit.

■ PS3000 SERIES (PS-3650A/3651)

Product Name			Model	PS-3650A	PS-3651A
Accessory Options	DIM Module DDR	1GB	PSA-DDR1G	●	●
	HDD Unit *1	250GB	PS365XA-HD250	●	●
	SSD unit *1	16GB	PS365XA-SD16A	●	●
		32GB	PS365XA-SD32A	●	●
		64GB	PS365XA-SD64A	●	●
		128GB	PS365XA-SD128A	●	●
	CF Card	512MB	CA3-CFCALL/512MB-01	●	●
		1GB	CA6-CFCALL/1GB-01	●	●
		2GB	CA8-CFCALL/2GB-01	●	●
		8GB	150638	●	●
		16GB	150100	●	●
	RS-232C/485 Conversion Unit		PL-RC500	●	●
	USB Front Cable	1m	CA5-USBEXT-01	●	●
	Screen Protection Sheet (5 Sheets/set)		CA5-DFS10-01	●	●
Maintenance Options*2	Installation Gasket		CA3-WPG12-01	●	●
	Backlight	PS3650/51-T42	CA8-BLU12XGA0-1	●	●
		PS3650/51-T41	CA5-BLU12XGA-01	●	●
	Installation Fastener		CA3-ATFALL-01	●	●
	AC Power Connector (Straight) (5/set)		CA7-ACCNL-01	●	●
	DC Power Connector (Straight) (5/set)		CA7-DCCNL-01	●	●

*1 The operating system has not been installed. *2 Standard attachment for all models. Order for replacement when they are damaged or lost.

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

Product Name			Model	PS-3450A	PS-3451A	PS-3000B	PS-3001B
Accessory Options	DIM Module DDR	1GB	PSA-DDR1G	●	●	●	●
	HDD Unit *1	40GB	PS345XA-HD40	●	●	●	
	SSD unit *1	16GB	PS345XA-SD16A	●	●	●	
		32GB	PS345XA-SD32A	●	●	●	
		64GB	PS345XA-SD64A	●	●	●	
	CF Card	512MB	CA3-CFCALL/512MB-01	●	●	●	●
		1GB	CA6-CFCALL/1GB-01	●	●	●	●
		2GB	CA8-CFCALL/2GB-01	●	●		
		8GB	144766	●	●	●	●
		16GB	150100	●	●	●	●
	USB Front Cable	1m	CA5-USBEXT-01	●	●	●	●
	Analog RGB Cable	4.5m	FP-CV02-45			●	●
	Screen Protection Sheet (5 Sheets/set)		CA7-DFS8-01	●	●		
Maintenance Options*2	Installation Gasket		CA7-WPG8-01	●	●		
	Backlight		CA7-BLU8-01		●		
	Installation Fastener		CA3-ATFALL-01	●	●		
			PS3000-ATFB-01			●	●
	AC Power Connector (Straight) (5/set)		CA7-ACCNL-01	●	●	●	
	DC Power Connector (Straight) (5/set)		CA7-DCCNL-01	●	●		●

*1 The operating system has not been installed. *2 Standard attachment for all models. Order for replacement when they are damaged or lost.

■ FP3000 SERIES

Product Name			Model	FP-3900T	FP-3710T	FP-3650T	FP-3600T	FP-3500T	FP-3710K
Accessory Options	Serial Interface Cable	5m	FP61V-IS00-O	●	●	●	●	●	●
	USB Cable *1	5m	FP-US00	●	●	●	●	●	●
	USB Front Cable	1m	CA5-USBEXT-01			●	●	●	
	Analog RGB Cable	4.5m	FP-CV02-45	●	●	●	●	●	●
	DVI-D/RGB Branch Cable	5m	CA7-CBLCVRGB-01	●	●	●	●	●	●
	DVI-D Cable	5m	FP-DV01-50	●	●	●	●	●	●
		10m *2	FP-DV01-100	●	●	●	●	●	●
	Unit Cover	For 15" screen	CA4-CVR15-01		●				
	Desktop Stand *3		CA1-STDLRG-01			●	●	●	
	Wall-mounting Adapter *3		CA1-WMALRG-01			●	●	●	
	Rear Cover		CA1-RCVLRG-01			●	●	●	
	Screen Protection Sheet (5 Sheets/Set)	For 10.4" 12.1" screen	PSL-DF00			●	●	●	
		For 15" screen	CA3-DFS15-01		●				●
		For 19" screen	CA7-DFS19-01	●					
Maintenance Options*4	Installation Gasket	For 10.4" 12.1" screen	GP570-WP10-MS			●	●	●	
		For 15" screen	CA3-WPG15-01		●				
		For 15" keypad screen	CA7-WGP15K-01						●
		For 19" screen	CA7-WPG19-01	●					
	Backlight	For 10.4" screen	GP577RT-BL00-MS					●	
		For 12.1" screen (SVGA)	CA3-BLU12-01				●		
		For 12.1" screen (XGA)	CA5-BLU12XGA-01			●			
		For 15" screen	CA3-BLU15-01 (Old T41 model)		●				
		For 15" screen	CA7-BLU15-01		●				●
	Installation Fastener		GP070-AT01			●	●	●	
			CA3-ATFALL-01	●	●				●
	AC Power Connector		CA7-ACCNL-01	●	●				●
	DC Power Connector		CA5-DCCNL-01			●	●		

*1 Compatible only with Windows® 2000 and Windows® XP. *2 It can be used only when connected to a PL-3000B unit (Revision B or more).
*3 Rear Cover (CA1-RCVLRG-01) is required. *4 Standard attachment for all models. Order for replacement when they are damaged or lost.

Integration of Open and Dedicated HMI Platforms

Compatible with WinGP

Trends Toward HMI Standardization

Pro-face's multi-platform GP-Pro EX HMI Software creates a user interface for Industrial PCs based on the "WinGP" runtime engine. Furthermore, it enables establishment of a common HMI platform, and facilitates addition of the manufacturer's original functions. Users can therefore expand system configuration by taking advantage of the expandability of a general-purpose OS, as well as compatibility with general-purpose applications.

PC

Control Device

GP-Pro EX

WinGP

IPC
(Industrial Personal Computer)

AGP
(Graphic Operator Interface)

Office

Reduction in the Number of Design Steps Results in Time (Cost) Saving!

Screen Data

PC

GP-Pro EX
HMI Development Software

Using WinGP, Pro-face industrial computers can apply screen data created using GP-Pro EX.

Individual functions can be selected at a glance using the icons

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

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 parts selection window shows a list of available parts.

Once headers and footers for frequent use are registered above/below the screen creation area, they can be called into a project anytime.

The edition screen provides a user-interface that adopts many mainstream tabs.

Trend Graph

Lineup

APL3000 SERIES

PS3000 SERIES

FP3000 SERIES

Option

WinGP

Pro-face Approach

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HMI Software Data is Applicable to Windows®PCs

GP-Pro EX screen data, which is conventionally available only with a Graphic Operator Interface including AGP3000, can be used even with Windows machines. Thus, a common software platform can be used.

Seamless Communication with the Control Device

Communication drivers are installed as a standard feature. Development of additional drivers for control devices such as PLC and temperature controller are not required.

Facilitating System Space-Saving

A system conventionally operated by combinations of a PC, Graphic Operator Interface and PLC can be operated simply with an industrial computer and PLC.

Seamless Link to User Application

With the dedicated API, WinGP provides a flexible link to user-prepared PC applications.

Factory

PLC

Controller

Use of Common Screen Data

AGP
(Graphic Operator Interface)

Programless Communication

PLC

IPC
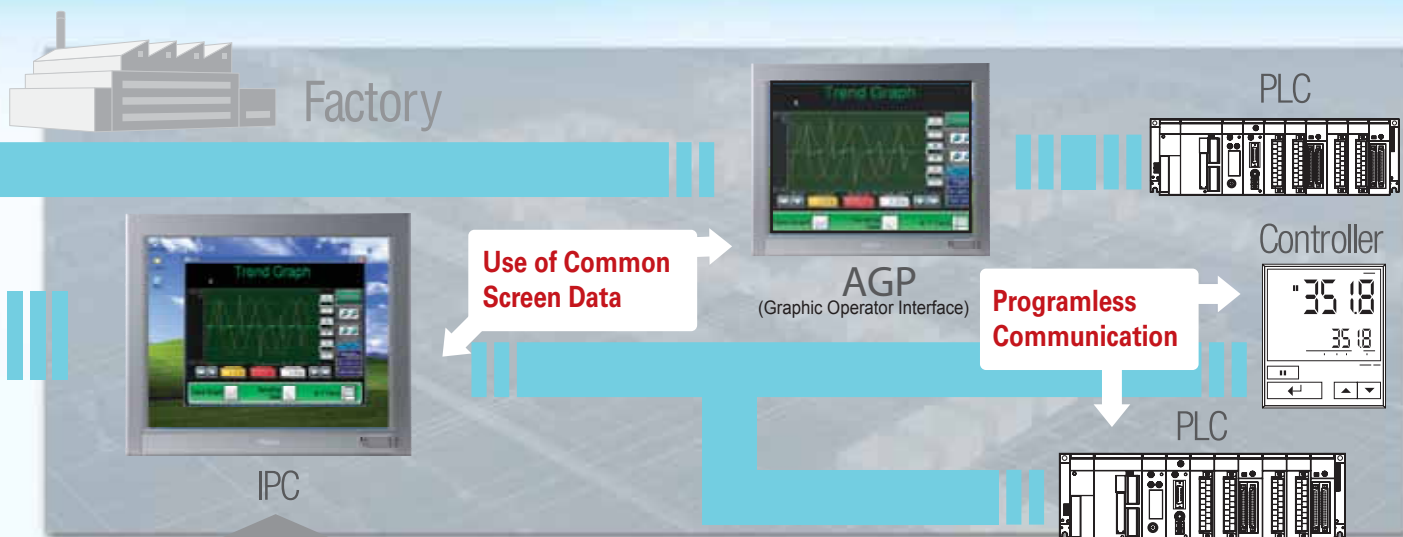
Use of Common HMI Software

GP-Pro EX software can be applied to both the Graphic Operator Interface display and panel computer. Hardware-dependent screen development is not required.

Space-saving

From "Programmable Display + PLC + PC" to "Industrial Panel Computer + PLC"

Conventional system	Industrial Panel Computer + WinGP
PC Graphic Operator Interface	Industrial Panel Computer
PLC	PLC
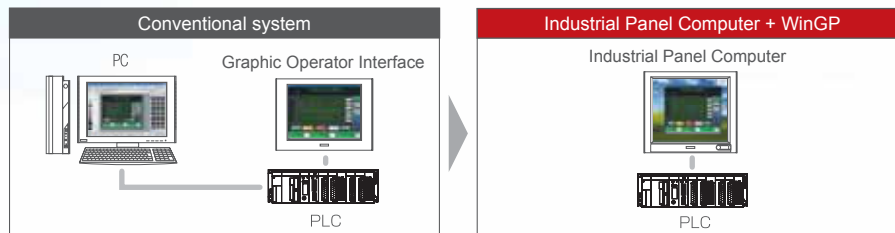
Link to PC Application via Dedicated API

■Link to User Database using the Handling API

Enables WinGP status acquisition and setup change from user application.(Provided as the DLL file)

■Control via User Applications using the Device Address API

Enables device read/write operations for WinGP communication target equipment via user application.(Provided as the DLL file)

Supported Languages
・Visual C++ ・Visual Basic ・C#、 ・VB.NET ・Excel ・VBA

## No Need to Develop an Additional Communication Driver

Communication drivers for control devices such as the PLC and controller are pre-installed as standard. Purchase or development of an additional communication driver is not required.

Taking advantage of expandability of a general-purpose OS, such as abundant peripheral equipment and large-volume memory, WinGP enables diversified system configuration specific to the IPC.

New Technologies "Exclusive to Pro-face" and Supporting State-of-the-art Manufacturing
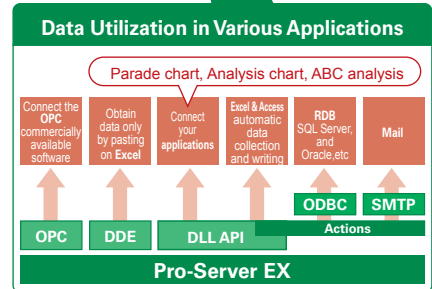
Data Management Software

Automatically collect production information in real-time remotely.
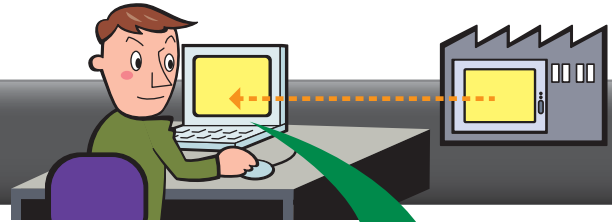
Use Pro-Server EX to collect production information at sites, and utilize it as information data.

Helpful to grasp situations from a remote site for product instructions. You can easily create daily or monthly reports by directly printing out the data at manufacturing sites.

More convenient through the combination with Pro-Server EX!

Data Utilization in Various Applications

Parade chart, Analysis chart, ABC analysis

| Connect the **OPC** commercially available software | Obtain data only by pasting on **Excel** | Connect your **applications** | **Excel & Access** automatic data collection and writing | **RDB** SQL Server, and Oracle,etc | **Mail** |

| OPC | DDE | DLL API | ODBC | SMTP |
| | | | Actions |

Pro-Server EX

Remote RAS Function

Various remote environments can be constructed using API-DLL.

Remote Monitor	Remote monitor of the terminals at a manufacturing site from the office
Remote Boot	Regular rebooting at a preset time to keep the stability of OS or applications
Remote Shutdown	Shut down the OS in unison from a remote office.
Remote Reboot	Start multiple IPCs in unison from an office at the beginning of operation. Start reservation is also available.

WinGP

Built-in WinGP units have been registered as nodes. This enables data collection, delivery, or data transfer between the AGP and IPC via the network.

Pro-Server

PC

Remote monitoring is also available.

AGP

Diskless
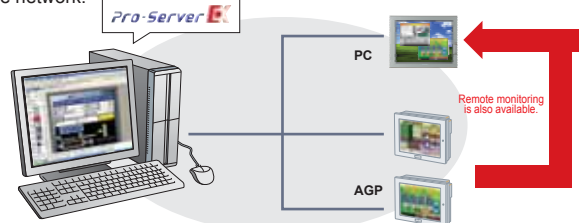
You are worried about data crash due to sudden vibration or shock.
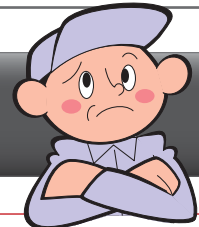
The Windows®XP Embedded supported CF card can achieve excellent resistance to both impact and vibration without a HDD.

CF card

Pro-face CF Card

Features

● No data can be written to the CF card with the write filter (EWF) setting enabled.
*When the EWF setting is disabled, users can set or install applications by themselves.

● No need to shut down an OS when EWF is enabled. Power can be easily turned ON/OFF.
*If the power is turned off while writing data into other storage devices, it cannot be guaranteed the date was transmitted successfully.

● RAS function supported.
● The CF card can be easily recovered using the recovery tool.

2GB Version Available for Windows® XP Embedded!

● **Installation of Large Capacity Application**
The usable range at the default settings has drastically increased. A large capacity application can be used with security under diskless environment, which had not been realized before.

● **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.

● **Supports 24 Languages**
Supports all the languages officially supported by Microsoft.* Flexibly responded to built-in application for your exporting products.
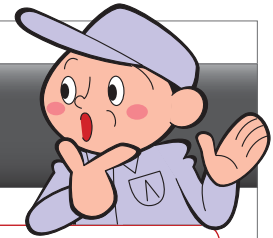
● **DMA Mode Transferring System**
Supports the DMA transfer mode which achieves high-speed data transfer. Compared with the conventional PIO mode transfer, both Read and Write speed is drastically faster.

*Six languages (Japanese, English, French, German, Italian, and Russian) have been installed. For other languages, download from our website "Otasuke Pro!".

❶For machines supporting each function, see the manual. [Otasuke Pro!→Download→Manual] Also, the content related to product modifications is subject to change without notice.

Reliability
R
A S
Availability Serviceability

Lineup

APL3000 SERIES

PS3000 SERIES

FP3000 SERIES

Option

WinGP

Pro-face Approach

RAS Function

RAS prevents costly system crashes and downtime.

Pro-face IPC Innovative Instant Alert Feature (RAS) Reliability, Accessability, Serviceability. A Powerful Built-in Health Monitoring System provides early warning of system failure.
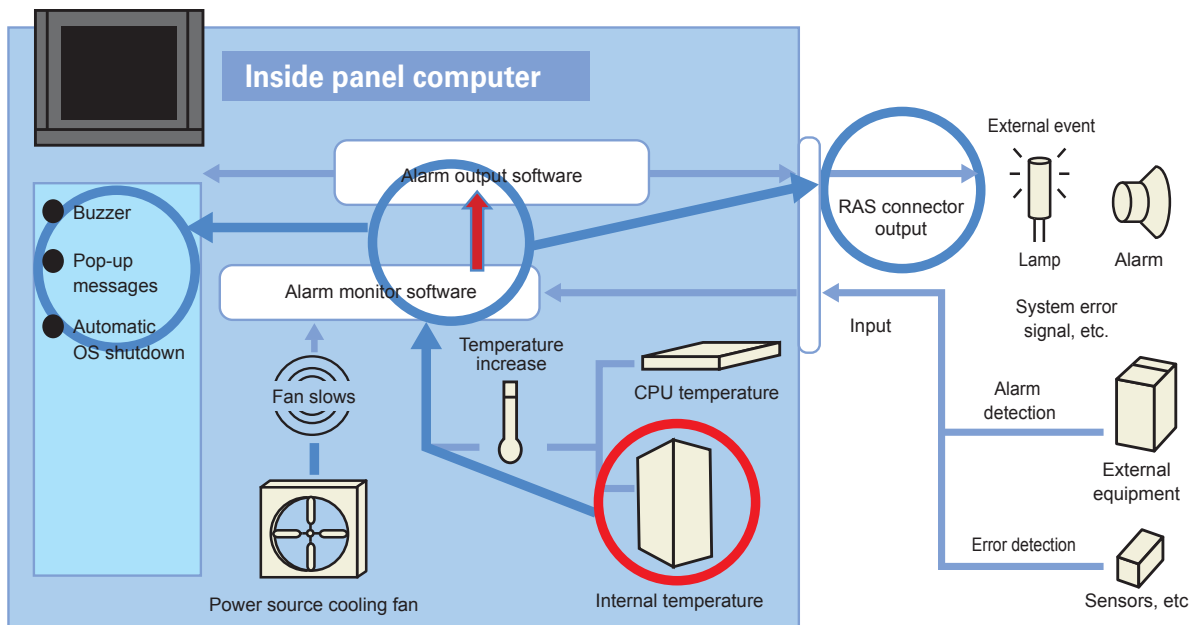
Alarm symptom monitor	▶	Warning cause display	▶	Actions	More effective in reducing the number of maintenance processes and avoiding loss compared to detection and recovery after occurrence of an alarm.
				•Maintenance (Parts replacement, repair, etc.)	

System Monitor	Utility to monitor various situations residing on the task bar tool which provides various support regarding the RAS function. Free download from Otasuke Pro!(http://www.Pro-face.com/otasuke/)

S•M•A•R•T Function

Monitoring HDD status, this function warns of and logs a HDD failure signal. (Included in the system monitor.)
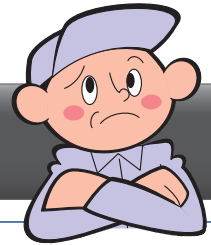
ERROR Status.

Alarm monitor	・Power voltage alarm, Internal temperature alarm ・Cooling fan speed alarm ・Watch dog timer time up ・Touch panel alarm (Orange LED lit) ・Blackout of backlight detection function ・Soft mirror alarm ・SMART alarm
External input signal	・General purpose signal input ・Remote reset input
External output signal	・General purpose output signal ・Alarm output; Lamp output
Various processing functions	・LED indicator ・Popup message output ・Buzzer output ・System shutdown ・System reset

For example,　Internal Temperature Increases!!

Inside panel computer

- Buzzer
- Pop-up messages
- Automatic OS shutdown

Alarm output software

Alarm monitor software

Fan slows

Temperature increase

CPU temperature

Power source cooling fan

Internal temperature

RAS connector output

Input

External event

Lamp　　Alarm

System error signal, etc.

Alarm detection

External equipment

Error detection

Sensors, etc

Reliability and Operability "Exclusive to Pro-face"

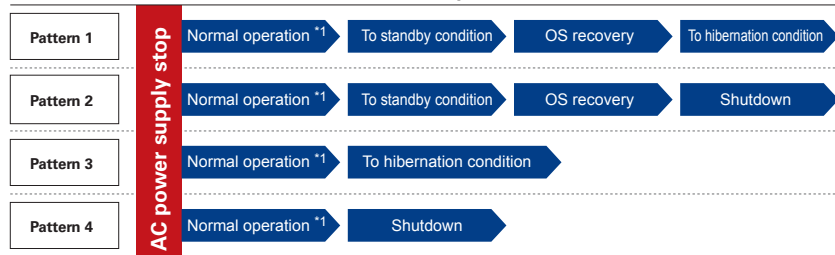## Battery — Avoid data loss from sudden blackouts.

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

Automatic shut down through software processing.

When the system detects a blackout, our computer automatically shifts to standby/ hibernation/shutdown of Windows® in 4 patterns.
For this function, you can feel secure about the safety of precious data, even after a sudden blackout or temporary voltage reduction.
● Supported Model: PS-3650 (AC power supply model)

**Operation in case that AC power supply has been cut in normal start-up conditions**

operation Pattern

Pattern 1	Normal operation *1	To standby condition	OS recovery	To hibernation condition
Pattern 2	Normal operation *1	To standby condition	OS recovery	Shutdown
Pattern 3	Normal operation *1	To hibernation condition		
Pattern 4	Normal operation *1	Shutdown		

(AC power supply stop)

Note: Battery operation time could vary depending on the environment and specifications.

Features
● With a compact backup unit incorporated in the main unit (For BTO exclusive use option).
● With the automatic status shift function after blackout detection.
● Monitors the remaining amount, temperature, and status (charge/discharge) of the battery.
● Contains a function to notify the the user of the time to replace the battery.   *1 Settable time: 0 to 60 sec.

Mirror Software — Enhance the safety of Hard Drive Data.
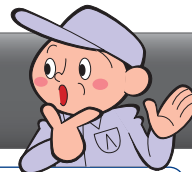
Don't worry if some accident should happen during Operation.

Because... With the mirroring function to write data to 2 HDDs simultaneously, even if the one unit crashes, lost data can be recovered from the other.

Furthermore, APL3000 Series... Can perform other operations in parallel because the CPU is under less load during rebuilding.

HDD Cartridge — Easily replace hard drives.

Simple replacement requiring only a cartridge change.

Has adopted the cartridge disk system requiring only a hard disk drive change.

Furthermore, APL3000 Series... Hot-swappable
The unit can be replaced without stopping the device even with power turned ON.
* Available only when mirror utility software is used in parallel.

Front USB — Easily connect to a peripheral device.

Easy Maintenance

Without opening the operation panel, a USB storage device or keyboard can be connected to the unit, which actualizes 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.

Lineup

APL3000 SERIES

PS3000 SERIES

FP3000 SERIES

Option

WinGP

Pro-face Approach

Environmental Resistance

Strong 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.

Water droplets

Oil mist

Dust

Stable Long-term Supply

Longterm Supply for industry

With a design assuming 24-hour continuous operation, our product has gone through a series of hard quality tests.
As well, a stable long-term supply will be provided not only to the body and parts but also the OS.
Furthermore, we procure the products and offer product support overseas through our global network.

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.

International Safety Standards

Complies with overseas safety standards

Complies with global safety standards. You don't have to worry about setting up our product for your exporting products.

Touch Panel

Simple 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.

RoHS

Earth friendly RoHS directive compliant

Our product has been made in order to comply with EU 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 designated by the RoHS directive 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

Actualizes space reduction thanks to the one-unit type

This one-unit type contributes to space saving and can be set up to incorporate through touch panel operation without a keyboard or mouse.

VESA Arm

Easy arm installation

Complying with the VESA standard, our products can be installed flexibly to the arm, as well as other components.

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

BTO

Built to order and shipped with your choice of options

We will accept any customers' orders according to the requested conditions, such as, "something with a high CPU and memory processing capacity," or, "something with the best quality but that is also affordable".

7-year Guarantee

We offer repair service even after production stoppage

Free guarantee for 1 year after delivery, (When several conditions and precautions have been observed.) we guarantee repairs for 7 years after delivery at our service repair center, even for items for which production has been discontinued. (Charged)

* For the products that were discontinued in September 2005 and before, our repair service will be effective during a 5 year period from the last shipment. Please understand, however, we may not be able to repair the products if the replacement parts should become unavailable, not limited to the above period.

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