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.
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.

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.

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.
### APL3000 SERIES

**Performance suited to enduring high loads**

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.

### PS3000/01 SERIES

**A wide variety of sizes are offered with high usability**

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

**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**

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**

- **3000 SERIES APL**
  - PS-3710A
  - PS-3711A
  - PS-3710T
  - PS-3710K
  - PS-3700T
  - PS-3700K
  - PS-3650A
  - PS-3651A

- **3000 SERIES PS**
  - PS-3450A
  - PS-3451A
  - PS-3450T
  - PS-3451T
  - PS-3300B
  - PS-3301B

- **3000 SERIES FP**
  - FP-3900T
  - FP-3710T
  - FP-3710K

### PS 3000 SERIES

**Industrial Computer Selected by Usability**

- **3000 SERIES PS**
  - PS-3710A
  - PS-3711A
  - PS-3710T
  - PS-3710K
  - PS-3700T
  - PS-3700K
  - PS-3650A
  - PS-3651A

- **3000 SERIES FP**
  - FP-3900T
  - FP-3710T
  - FP-3710K

### FP 3000 SERIES

**DVI I/F Compatible Industrial Flat Panel Monitor**

- **3000 SERIES FP**
  - FP-3900T
  - FP-3710T
  - FP-3710K

### Technical Specifications

1) **Battery**
   - No worry about trouble caused by sudden blackout or voltage reduction.

2) **Utilize screen data using “GP-Pro EX”**
   - No worry about sudden trouble or repair.
   - Quick support via telephone or Website.

3) **Compatible with XP Pro**
   - Avoid trouble using the CF card.

4) **Constant backup function guarantees safe and secure operation.**

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

6) **Keyboard integrated with the main unit.**
   - Easy operation available.

7) **Simple HDD removal results in maintenance time reduction.**

8) **IP65F NEMA 4/4x/12 rated excellent environmental resistance protects the product from water, dust, high temperatures, and humidity at sites.**

9) **Detect errors in advance with the equipment monitor function.**

---

**Pursues High Performance as well as Expandability and Serviceability**
## Pro-face Industrial Computer Lineup

### Industrial Computer with Ultimate Expandability and Serviceability vs. Industrial Computer Selected for High Usability

<table>
<thead>
<tr>
<th>APL3000 SERIES</th>
<th>PS3000 SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>APL-3900T</td>
<td>PS-3710A</td>
</tr>
<tr>
<td>APL-3700T</td>
<td>PS-3711A</td>
</tr>
<tr>
<td>APL-3600T</td>
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<td>APL-3700K</td>
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<td>APL-3600K</td>
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<tr>
<td>APL-3000B</td>
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### Reference Page

- P.8
- P.10
- P.12

### Screen Size

<table>
<thead>
<tr>
<th></th>
<th>19&quot;</th>
<th>15&quot;</th>
<th>12.1&quot;</th>
<th>15&quot;</th>
<th>12.1&quot;</th>
<th>Box PC</th>
<th>15&quot;</th>
</tr>
</thead>
</table>

### Graphics

- SXGA: 1280 x 1024 pixels
- XGA: 1152 x 900 pixels
- VGA: 800 x 600 pixels
- SXGA: 1024 x 768 pixels
- VGA (960 x 640 pixels)
- UXGA: 1600 x 1200 pixels

### OS

- Windows® XP **Pro / XP ML**
- Windows **XP Pro / XP ML / XP Embedded ML**

### CPU

- Core™ Duo 2.0GHz / Celeron® M 1.6GHz
- 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

### Serial

- 4 Ports
- 2 Ports

### RAS

- 4 Ports
- 2 Ports

### Ethernet

- 1 Port

### USB (Host)

- 5 Ports (Front 1, Side 4)
- 5 Ports (Front 1, Side 4)

### PS/2

- 1 Port

### Optical Drive

- DVD-R/W
- DVD-ROM

### Floppy Drive

- 1 Slot

### PCMCIA

- 2 Slots

### Power Supply

- AC100 to 240V
- AC100 to 240V

### Fanless

- On PS3710A-TA2 Models

### Expansion Slots

- 2 Slots (PCI)
- 4 Slots (PCI)
## Industrial Computer Selected for High Usability

### PS3000 SERIES

<table>
<thead>
<tr>
<th></th>
<th>PS-3550A</th>
<th>PS-3551A</th>
<th>PS-3450A</th>
<th>PS-3451A</th>
<th>PS-3000B</th>
<th>PS-3001B</th>
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</thead>
<tbody>
<tr>
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<tr>
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<td>SVGA 800 x 600 pixels</td>
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<tr>
<td>VGA 640 x 480 pixels to FULL HD 1920 x 1080 pixels</td>
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### FP3000 SERIES

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<tr>
<th></th>
<th>FP-3900T</th>
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<th>FP-3710K</th>
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<td>VGA 640 x 480 pixels to FULL HD 1920 x 1080 pixels</td>
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### DVI I/F Compatible Industrial Flat Panel Monitor

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<thead>
<tr>
<th></th>
<th>FP-3900T</th>
<th>FP-3710T</th>
<th>FP-3650T</th>
<th>FP-3600T</th>
<th>FP-3500T</th>
<th>FP-3710K</th>
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<tbody>
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<td>SVGA 800 x 600 pixels</td>
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<td>VGA 640 x 480 pixels to FULL HD 1920 x 1080 pixels</td>
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</tbody>
</table>

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

- **FP-3900T / 3710T / 3710K (Front USB Type)**
  - USB (Front Slot) x 1 port
  - USB (Bottom Slot) x 1 port
  - USB (Front Slot) x 1 port

- **FP-3650T / 3600T / 3500T**
  - USB (Front Slot) x 1 port
  - USB (Bottom Slot) x 1 port

---

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

**APL-3900T / 3700T / 3600T**

**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 coplifying 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.

**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.

- **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**

<table>
<thead>
<tr>
<th>APL-3900T (2 slot)</th>
<th>APL-3700T (2 slot)</th>
<th>APL-3600T (2 slot)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units are shown without DVD-RW, add 37.5mm (1.47”) to the depth (0)</td>
<td>Units are shown without DVD-RW, add 37.5mm (1.47”) to the depth (0)</td>
<td>Units are shown without DVD-RW, add 37.5mm (1.47”) to the depth (0)</td>
</tr>
</tbody>
</table>

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

---

**Specifications**

<table>
<thead>
<tr>
<th>Feature</th>
<th>APL-3900T</th>
<th>APL-3700T</th>
<th>APL-3600T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core™ Duo 2.0GHz</td>
<td>Core™ Duo 2.0GHz</td>
<td>Core™ Duo 2.0GHz</td>
<td>Core™ Duo 2.0GHz</td>
</tr>
<tr>
<td>Celeron® M440 1.86GHz</td>
<td>Celeron® M440 1.86GHz</td>
<td>Celeron® M440 1.86GHz</td>
<td>Celeron® M440 1.86GHz</td>
</tr>
<tr>
<td>DDR2 SDRAM</td>
<td>DDR2 SDRAM</td>
<td>DDR2 SDRAM</td>
<td>DDR2 SDRAM</td>
</tr>
<tr>
<td>1GB to 4GB</td>
<td>1GB to 4GB</td>
<td>1GB to 4GB</td>
<td>1GB to 4GB</td>
</tr>
<tr>
<td>CF Card X 1</td>
<td>CF Card X 1</td>
<td>CF Card X 1</td>
<td>CF Card X 1</td>
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<td>Serial X 4</td>
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<td>DVD-R/W X 1</td>
<td>DVD-R/W X 1</td>
<td>DVD-R/W X 1</td>
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<tr>
<td>19” SXGA</td>
<td>19” SXGA</td>
<td>19” SXGA</td>
<td>19” SXGA</td>
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<tr>
<td>15” XGA</td>
<td>15” XGA</td>
<td>15” XGA</td>
<td>15” XGA</td>
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<tr>
<td>12.1” SVGA</td>
<td>12.1” SVGA</td>
<td>12.1” SVGA</td>
<td>12.1” SVGA</td>
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<tr>
<td>Power Supply</td>
<td>AC100 to 240V</td>
<td>DC24V</td>
<td>DC24V</td>
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<tr>
<td>Expansion Slots</td>
<td>2 slot</td>
<td>2 slot</td>
<td>4 slot</td>
</tr>
</tbody>
</table>

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**Panel Cut-Out Dimensions**

- Under 4-R3: 419.5 [16.52”]
- Allowable Panel Thickness: 1.6 to 10.0

---

**External Dimensions**

<table>
<thead>
<tr>
<th>APL-3900T</th>
<th>APL-3700T</th>
<th>APL-3600T</th>
</tr>
</thead>
<tbody>
<tr>
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**External Interfaces**

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<tr>
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<td>DVI-I Interface</td>
<td>DVI-I Interface</td>
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<td>HDD Slot (Serial ATA)</td>
<td>HDD Slot (Serial ATA)</td>
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<td>Serial (RS-232C) Interface</td>
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<td>RAS Interface</td>
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<tr>
<td>CF Card Slot (IDE Interface)</td>
<td>CF Card Slot (IDE Interface)</td>
<td>CF Card Slot (IDE Interface)</td>
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<td>Front USB Interface</td>
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<td>Front USB Interface</td>
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<tr>
<td><em>DVD-RW</em> (Unit drawings are shown without DVD-RW)</td>
<td><em>DVD-RW</em> (Unit drawings are shown without DVD-RW)</td>
<td><em>DVD-RW</em> (Unit drawings are shown without DVD-RW)</td>
<td><em>DVD-RW</em> (Unit drawings are shown without DVD-RW)</td>
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**Allowable Panel Thickness**: 1.6 to 10.0
### Performance Specifications

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<tr>
<td>Display Dots (Pixels)</td>
<td>1280 x 1024 pixels (SXGA)</td>
<td>1280 x 1024 pixels (SXGA)</td>
<td>1024 x 768 pixels (XGA)</td>
<td>1024 x 768 pixels (XGA)</td>
<td>800 x 600 pixels (SVGA)</td>
<td>800 x 600 pixels (SVGA)</td>
</tr>
<tr>
<td>Effective Display Area</td>
<td>W376.32 x H301.056mm [11.83in.]</td>
<td>W376.32 x H301.056mm [11.83in.]</td>
<td>W260.2 x H192.1mm [7.64in.]</td>
<td>W248.0 x H186.5mm [7.43in.]</td>
<td>W248.0 x H186.5mm [7.43in.]</td>
<td>W248.0 x H186.5mm [7.43in.]</td>
</tr>
<tr>
<td>Brightness Control</td>
<td>4 levels (adjustment using software)</td>
<td>4 levels (adjustment using software)</td>
<td>4 levels (adjustment using software)</td>
<td>4 levels (adjustment using software)</td>
<td>4 levels (adjustment using software)</td>
<td>4 levels (adjustment using software)</td>
</tr>
</tbody>
</table>

#### General Specifications

- **CPU**: Intel® Core™ i7 2.0GHz / Core™ i5 1.6GHz (built in the CPU)
- **Chip Set**: Intel 945GME + ICH7M
- **Built-in Computer (built-in the CPU)**: Intel® Core Duo 2.0GHz 2MB / Intel Celeron M440 1.86GHz 1MB
- **Chip Function**: RS-232C / RS-232C / 422 / 485 / RI *5 / 5V switchable

#### Options

- **Panel Computer DC Power Supply**: Phoenix® TrustedCore™ BIOS
- **Option Menu**: Touch Panel Type: Resistive Film (Analogue)

#### Expansion Slots

<table>
<thead>
<tr>
<th>Item</th>
<th>2 slot</th>
<th>4 slot</th>
<th>Board Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st slot</td>
<td>PCI Rev. 2.3 (SV)</td>
<td>PCI Rev. 2.3 (SV)</td>
<td>174.63 [8.88] x 106.68mm [4.20in.]</td>
</tr>
<tr>
<td>2nd slot</td>
<td>PCI Rev. 2.3 (SV)</td>
<td>PCI Rev. 2.3 (SV)</td>
<td>174.63 [8.88] x 106.68mm [4.20in.]</td>
</tr>
<tr>
<td>3rd slot</td>
<td>PCI Rev. 2.3 (SV)</td>
<td>PCI Rev. 2.3 (SV)</td>
<td>250.84 [9.89] x 106.68mm [4.20in.]</td>
</tr>
<tr>
<td>4th slot</td>
<td>PCI Rev. 2.3 (SV)</td>
<td>PCI Rev. 2.3 (SV)</td>
<td>250.84 [9.89] x 106.68mm [4.20in.]</td>
</tr>
</tbody>
</table>

#### Option Menu

- **CD2G**: 2 slot / 4 slot, 4GB / 8GB
- **XM250**: 2 slot / 4 slot, 4GB / 8GB
- **XM16S**: 2 slot / 4 slot, 2GB / 4GB
- **XM250**: 2 slot / 4 slot, 4GB / 8GB
- ** integrating function**: Vortex® for Win GP
- **2D/3D**: for Win GP
- **3D/4D**: for Win GP

**Notes**

1. Can switch between master and slave according to the settings.
2. The analog RGB output is supported.
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

---

*The AP Pro SS is inserted with an 8 GB Flash card supports English, French, Spanish, Brazilian Portuguese, Japanese, Simplified and Traditional Chinese languages.*
Dual HDD supported  
Mirror utility software supported (Optional)  
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

---

**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

**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**

**APL-3700K (2 slot)**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Units: mm/in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>486 19.21</td>
</tr>
<tr>
<td>Height</td>
<td>441.5 17.36</td>
</tr>
<tr>
<td>Thickness</td>
<td>289 11.38</td>
</tr>
</tbody>
</table>

- Units are shown without DVD-RW: add 37.5 mm (1.47") to the depth (D).
- Allowable Panel Thickness: 1.6 to 10.0

**APL-3600K (2 slot)**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Units: mm/in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>425 16.73</td>
</tr>
<tr>
<td>Height</td>
<td>383.5 15.06</td>
</tr>
</tbody>
</table>

- Units are shown without DVD-RW: add 37.5 mm (1.47") to the depth (D).
- Allowable Panel Thickness: 1.6 to 10.0

**APL-3000B (2 slot)**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Units: mm/in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>243 9.57</td>
</tr>
<tr>
<td>Height</td>
<td>227 9.02</td>
</tr>
<tr>
<td>Thickness</td>
<td>243 9.57</td>
</tr>
</tbody>
</table>

**Parts Names**

1. DVI-I Interface
2. Ethernet Interface (10 Base-T/100 Base-TX Auto change)
3. Ethernet Interface (100BASE-TX/100BASE-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
11. IDE Interface
12. Power Connector (European Terminal)
13. Power Switch
14. System Fan
15. Front USB Interface
16. DVD-R/W (part drawings are shown with DVD-RW)
## General Specifications

### Performance Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>APL3700-KA</th>
<th>APL3700-KD</th>
<th>APL3700-BA</th>
<th>APL3700-BD</th>
<th>APL3000-KA</th>
<th>APL3000-KD</th>
<th>APL3000-BA</th>
<th>APL3000-BD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display Type</td>
<td>15&quot; TFT Color LCD</td>
<td>12.1&quot; TFT Color LCD</td>
<td>15&quot; TFT Color LCD</td>
<td>12.1&quot; TFT Color LCD</td>
<td>15&quot; TFT Color LCD</td>
<td>12.1&quot; TFT Color LCD</td>
<td>15&quot; TFT Color LCD</td>
<td>12.1&quot; TFT Color LCD</td>
</tr>
<tr>
<td>Display Size</td>
<td>19&quot;</td>
<td>19&quot;</td>
<td>19&quot;</td>
<td>19&quot;</td>
<td>19&quot;</td>
<td>19&quot;</td>
<td>19&quot;</td>
<td>19&quot;</td>
</tr>
<tr>
<td>Display Colors</td>
<td>262,144 colors</td>
<td>262,144 colors</td>
<td>262,144 colors</td>
<td>262,144 colors</td>
<td>262,144 colors</td>
<td>262,144 colors</td>
<td>262,144 colors</td>
<td>262,144 colors</td>
</tr>
<tr>
<td>Display Dots (Pixels)</td>
<td>1024 x 768 pixels (XGA)</td>
<td>1024 x 768 pixels (XGA)</td>
<td>800 x 600 pixels (SVGA)</td>
<td>800 x 600 pixels (SVGA)</td>
<td>1024 x 768 pixels (XGA)</td>
<td>1024 x 768 pixels (XGA)</td>
<td>800 x 600 pixels (SVGA)</td>
<td>800 x 600 pixels (SVGA)</td>
</tr>
<tr>
<td>Brightness Control</td>
<td>4 levels (adjustment using software)</td>
<td>4 levels (adjustment using software)</td>
<td>4 levels (adjustment using software)</td>
<td>4 levels (adjustment using software)</td>
<td>4 levels (adjustment using software)</td>
<td>4 levels (adjustment using software)</td>
<td>4 levels (adjustment using software)</td>
<td>4 levels (adjustment using software)</td>
</tr>
<tr>
<td>Effective Display Area</td>
<td>W306.2 x H230.1mm [12.06 x 9.06in.]</td>
<td>W248.0 x H186.5mm [9.76 x 7.34in.]</td>
<td>W248.0 x H186.5mm [9.76 x 7.34in.]</td>
<td>W248.0 x H186.5mm [9.76 x 7.34in.]</td>
<td>W306.2 x H230.1mm [12.06 x 9.06in.]</td>
<td>W248.0 x H186.5mm [9.76 x 7.34in.]</td>
<td>W248.0 x H186.5mm [9.76 x 7.34in.]</td>
<td>W248.0 x H186.5mm [9.76 x 7.34in.]</td>
</tr>
</tbody>
</table>

### CPU

- Intel® Core™ 2 Duo 2.13 GHz or Intel Core2 Duo 2.53 GHz
- AMD Opteron™ 1200 Series 2.2 GHz or AMD Opteron™ 1200 Series 2.5 GHz
- Intel® Core™ i7-870 2.93 GHz or Intel® Core™ i7-870 3.26 GHz

### Memory

- 4GB or 8GB DDR3 Memory
- 8GB or 16GB DDR3 Memory

### Video Memory

- Max 64MB UMA type
- Max 64MB UMA type

### BIOS

- Phoenix® TrustedCore™ BIOS
- Phoenix® TrustedCore™ BIOS

### Interface

- RS-232 (RI / + 5V switchable) Connector: D-Sub 9-pin Plug
- RS-232 (RI / + 5V switchable) Connector: D-Sub 9-pin Plug
- RS-232 (RI / + 5V switchable) Connector: D-Sub 9-pin Plug

### Expansion Slots

- 2 slots: W488mm [19.21in.] x H367mm [14.45in.] x D203mm [7.98in.]
- 2 slots: W488mm [19.21in.] x H367mm [14.45in.] x D203mm [7.98in.]
- 2 slots: W488mm [19.21in.] x H367mm [14.45in.] x D203mm [7.98in.]

### Power Consumption

- 145VA or less
- 145VA or less
- 145VA or less

### Cooling Method

- Contact Discharge Method: 6kV (IEC/EN 61000-4-2 Level 3)
- Contact Discharge Method: 6kV (IEC/EN 61000-4-2 Level 3)
- Contact Discharge Method: 6kV (IEC/EN 61000-4-2 Level 3)

### Weight (with DVD-R/W)

- 4G: 14.45kg [31.8lb]
- 4G: 14.45kg [31.8lb]
- 4G: 14.45kg [31.8lb]

### Display Colors

- CCFL (Replaceable)
- CCFL (Replaceable)
- CCFL (Replaceable)

### Display Type

- TFT Color LCD
- TFT Color LCD
- TFT Color LCD

### Touch Panel Type

- Resistive Film (Analog)
- Resistive Film (Analog)
- Resistive Film (Analog)

### Software Options

- Windows® XP ML / XP Pro
- Windows® XP ML / XP Pro
- Windows® XP ML / XP Pro

### Other Functional Items

- Attached 10/100BASE-T Ethernet (LAN1)
- Attached 10/100BASE-T Ethernet (LAN1)
- Attached 10/100BASE-T Ethernet (LAN1)

### Choice Menu

- WinGP
- WinGP
- WinGP

### Note

- *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.
- *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 (IAC) model only.
- *5 AC model only

### Contact Information

- APL-3000 Series
- APL-3000 Series
- APL-3000 Series

### Dimensions

- 2 slots: W306.2 x H230.1mm [12.06 x 9.06in.]
- 4 slots: W306.2 x H230.1mm [12.06 x 9.06in.]
- 2 slots: W248.0 x H186.5mm [9.76 x 7.34in.]
- 4 slots: W248.0 x H186.5mm [9.76 x 7.34in.]

###备注

- *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 (IAC) model only.
Industrial Computer Selected for High Usability  
**PS3000 SERIES**

High-speed Processing Available with a Large, Thin Screen

**PS-3710A/PS-3711A**

**15” XGA**

- Pentium® M 1.6GHz
- ULV Celeron M 1.0GHz
- 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)

### PS-3710A

- 15” XGA
- Pentium® M 1.6GHz
- ULV Celeron M 1.0GHz
- 1GB or 2GB DDR memory
- 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
- Windows XP Pro
- Windows XP ML
- Windows XP Embedded
- 24VDC or 100-240 VAC

### PS-3711A

- ULV Celeron M 1.0GHz
- 512MB or 1GB DDR memory
- CF Card X 1
- Serial X 2
- Ethernet X 2
- USB X 5
- PS/2 X 1
- PCMCIA X 2
- Windows XP Pro
- Windows XP ML
- Windows XP Embedded
- 24VDC or 100-240 VAC

### External Dimensions/Interfaces

#### PS-3710A-TA2

<table>
<thead>
<tr>
<th>Part</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>410 (16.13)</td>
</tr>
<tr>
<td>2</td>
<td>389 (15.31)</td>
</tr>
<tr>
<td>3</td>
<td>294 (11.57)</td>
</tr>
<tr>
<td>4</td>
<td>282 (11.10)</td>
</tr>
<tr>
<td>5</td>
<td>100 (3.94)</td>
</tr>
<tr>
<td>6</td>
<td>5 (0.20)</td>
</tr>
</tbody>
</table>

#### PS-3711A-T42

<table>
<thead>
<tr>
<th>Part</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>395 (15.55)</td>
</tr>
<tr>
<td>2</td>
<td>383 (15.08)</td>
</tr>
<tr>
<td>3</td>
<td>294 (11.57)</td>
</tr>
<tr>
<td>4</td>
<td>282 (11.10)</td>
</tr>
<tr>
<td>5</td>
<td>5 (0.20)</td>
</tr>
<tr>
<td>6</td>
<td>5 (0.20)</td>
</tr>
</tbody>
</table>

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

---

### Parts Names

1. Ethernet Interface
2. Mic Input Interface
3. DVD-ROM Drive
4. Power Connector (European Terminal)
5. System Fan
6. Front USB Interface
7. Line Input Interface
8. CD-ROM Drive
9. Front USB Interface (available only on T42 models)
10. Serial (RS-232C) Interface
11. Floppy Drive
12. Printer Interface
13. RAS Interface
14. Mouse Keyboard Interface (PS/2)
15. CF Card Slot
16. AC Power Interface
17. Speaker Output Interface
18. Expansion Slot
19. USB Interface
20. Rear USB Interface
21. Speaker Interface

---

Class I Div 2
*Under 4-R3*
### Performance Specifications

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Display Type</td>
<td>TFT Color LCD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display Size</td>
<td>15&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display Colors</td>
<td>262,144 colors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display Data/Pixels</td>
<td>1024 x 768 pixels (XGA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backlight</td>
<td>CCFL (Replaceable)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective Display Area</td>
<td>W304.1 x 197.7 mm (8.8&quot;, 8.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brightness Control</td>
<td>4 levels (adjustment using software)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supported OS</td>
<td>Windows XP / XP ML / XP Embedded ML</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPU</td>
<td>Intel Pentium M 1.6GHz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L2 Cache Memory</td>
<td>1MB (Built in CPU)</td>
<td>1MB (Built in CPU)</td>
<td>512MB (Built in CPU)</td>
<td>512MB (Built in CPU)</td>
</tr>
<tr>
<td>Main Memory</td>
<td>DDR SDRAM (PC2700)</td>
<td>10GB / 2GB (SO-DIMM x 2 slots)</td>
<td>512MB / 1GB (SO-DIMM x 1 slot)</td>
<td>512MB / 1GB (SO-DIMM x 1 slot)</td>
</tr>
<tr>
<td>Chip Set</td>
<td>Intel 855GMCH4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video Memory</td>
<td>Built-in Intel 855GM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphics</td>
<td>XGA (1024 x 768 pixels)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOS</td>
<td>Phoenix First BIOS Embedded Pro</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touch Panel Resolution</td>
<td>Resistive Film (Analog)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touch Panel Resolution</td>
<td>(1024 x 1024)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDE</td>
<td>HDD or SSD (1 primary master), CF Card slot (Type II) x 1 (primary slave), DVD drive (secondary master)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial (COM1)</td>
<td>RS-232C (RI+ / RI- switchable)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial (COM2)</td>
<td>RS-232C (RI+ / RI- switchable)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial (COM3)</td>
<td>RS-232C (RI+ / RI- switchable)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial (COM4)</td>
<td>RS-232C (RI+ / RI- switchable)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethernet (LAN1)</td>
<td>IEEE802.3u, 10 Base-T100 Base-TX Auto change, Connector: Modular Jack (RJ-45) x 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethernet (LAN2)</td>
<td>IEEE802.3u, 1000Base-T Auto change, Connector: Modular Jack (RJ-45) x 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USB</td>
<td>USB2 Connector: USB Type A x 5 (T42 is only model with Front USB x 1, All models have rear ports x 4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Voltage</td>
<td>DC5V ±5%, Output Current: 500mA (Max), Maximum Communication Distance: 5m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touch Panel Resolution</td>
<td>(without HDD (SSD or CF card))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouse</td>
<td>Support Speaker Output, Line Input, Mic Input</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keyboard</td>
<td>PS2, Connector: Max DIN 8pin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAS</td>
<td>Input (usable as an external reset input): 4 points, Output: 5 points, Rated Voltage: DC5V, Maximum Rated Current: 100mA, Connector: D-Sub 25-pin socket x 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound</td>
<td>Speaker Output, Line Input, Mic Input</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floppy Drive</td>
<td>Floppy Drive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDDVD-ROM Drive</td>
<td>DVD-ROM Drive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCCMCIA</td>
<td>PC card slot, Connector compatible with CardBus (*Zoomed Video and Sound functions excluded): Type II, Type II x 2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

### General Specifications

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>International Safety Standards</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conforming to Standards</td>
<td>UL508, CSA-C22.2 No. 143 M1867 (UL Approval), EN55011, EC1231-2000, CSM2-C22.2 No.213 M1996 (c-UL Approval), EN50501 Class A, EN60068-4-2, EN60950-1 (AC models only), 6 CPR Part 15 Class A, KCC<em>2</em>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supply</td>
<td>Rated Voltage: AC100 to 240V DC24V DC100 to 240V DC24V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rated Frequency: 50 / 60Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Allowable Voltage Drop: Shorter than 1 cycle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power Consumption: 15W (max.) 70W (max.) 90W (max.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Voltage Endurance: AC1,500V (10kV) for 1 minute (between charging and FG terminals) AC1,000V (10kV) for 1 minute (between charging and FG terminals) AC1,500V (10kV) for 1 minute (between charging and FG terminals) AC1,000V (10kV) for 1 minute (between charging and FG terminals)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Insulation Resistance: DC 950V 1000M (min.) (between charging and FG terminals)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambient Operating Temperature: +5°C to +50°C (Without HDD) –5°C to 40°C (With HDD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storage Temperature: -20°C to +60°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storage Humidity: 10 to 90%RH (not Condensing, Wet bulb temperature: 29°C max.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pollution Degree: For use in Pollution Degree 2 or lower max.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Atmosphere: Dust-free, Corrosive gases free</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure / Vacuum Resistance: 800 to 1114kPa (2,000m or lower altitude sea level)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vibration Resistance: With HDD: 10 to 25Hz Single amplitude: 0.075mm (0.003in.), 57 to 150Hz Fixed acceleration: 4.9m/s², X, Y, Z 10 cycles (for 30 minutes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Without HDD [SSD or CF card]: IEC 61311-2 compliant 5 to 9Hz Single amplitude: 3.5mm (0.14in) to 150Hz Fixed acceleration: 9.8m/s², X, Y, Z 10 cycles (for 100 minutes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Noise Immunity: AC model: Noise voltage: 1.500V p-p, Pulse duration: 50ns, 500ns, 1us, Rise time: 1ns (via noise simulator) OC model: Noise voltage: 1.000V p-p, Pulse duration: 50ns, 500ns, 1us, Rise time: 1ns (via noise simulator)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrostatic Discharge Immunity: 11kV (IEC 61000-4-2 Level 3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>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)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>External Dimensions: 262 x 197.7 x 30mm (W10.3 x H7.8 x D1.2in.) 262 x 197.7 x 30mm (W10.3 x H7.8 x D1.2in.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weight approx.: 8kg (17.6lb) (main unit only)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cooling Method: Natural air cooling by Heat Sink</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Model</th>
<th>PS-3710A</th>
<th>PS-3710A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st slot</td>
<td>PCI Rev. 2.2 (16bit)</td>
<td>PCI Rev. 2.2 (16bit)</td>
</tr>
<tr>
<td>Power Supply</td>
<td>DC5V: 1.5A, DC12V: 0.5A, DC-12V: 0.1A, DC-3.3V: 0.5A</td>
<td>DC5V: 1.5A, DC12V: 0.5A, DC-12V: 0.1A, DC-3.3V: 0.5A</td>
</tr>
</tbody>
</table>

13
Industrial Computer Selected for High Usability  PS3000 SERIES

12.1” XGA with Rich Expression Screen Display

PS-3650A/PS-3651A

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
- IP65
- Compliant with the RoHS directive
- NEMA 4/4X/12 Rated
- WinGP option available

External Dimensions/Interfaces

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

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


dimension

External Dimensions

Panel Cut-Out Dimensions

Allowable Panel Thickness: 1.6 to 10.0

<table>
<thead>
<tr>
<th>Item Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Starts each backup mode operation, going into &quot;blackout&quot; state after over one second of blackout.</td>
</tr>
<tr>
<td>2. Dimensions for battery unit only.</td>
</tr>
</tbody>
</table>

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.

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

External Dimensions

Panel Cut-Out Dimensions

Allowable Panel Thickness: 1.6 to 10.0

Part Names

1. Ethernet Interface
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

<table>
<thead>
<tr>
<th>External Dimensions/Interfaces</th>
<th>Units: mm [in.]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS-3650A</td>
<td></td>
</tr>
<tr>
<td>Fits precisely into the PC expansion unit.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Units: mm [in.]</td>
</tr>
</tbody>
</table>

| PS-3651A                      |                 |
| A compact unit with a thickness of approx. 20mm. |
|                  | Units: mm [in.] |

<table>
<thead>
<tr>
<th>Panel Cut-Out Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 4-R3</td>
</tr>
<tr>
<td>301.5 [11.87 in]</td>
</tr>
</tbody>
</table>

| Allowable Panel Thickness: 1.6 to 10.0 |

<table>
<thead>
<tr>
<th>Panel Cut-Out Dimensions</th>
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<tbody>
<tr>
<td>Under 4-R3</td>
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<td>301.5 [11.87 in]</td>
</tr>
</tbody>
</table>

| Allowable Panel Thickness: 1.6 to 10.0 |

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<tr>
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</tr>
</thead>
<tbody>
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<td>1. Starts each backup mode operation, going into &quot;blackout&quot; state after over one second of blackout.</td>
</tr>
<tr>
<td>2. Dimensions for battery unit only.</td>
</tr>
</tbody>
</table>

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.
### Performance Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Display Type</th>
<th>Display Size</th>
<th>Display Colors</th>
<th>Graphics</th>
<th>Backlight</th>
<th>Effective Display Area</th>
<th>Brightness Control</th>
<th>Supported DS</th>
<th>CPU</th>
<th>L2 Cache Memory</th>
<th>Main Memory</th>
<th>L1 Cache Memory</th>
<th>RAS Interface</th>
<th>GPU</th>
<th>Memory</th>
<th>Display Colors</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS3650A-T42</td>
<td>TFT Color LCD</td>
<td>12.1&quot;</td>
<td>262,144 colors</td>
<td>XGA (1024 x 768 pixels)</td>
<td>CCFL (Replaceable)</td>
<td>W245.75 x H184.32mm [W9.68 x H7.26in.]</td>
<td>4 levels (adjusted with the software)</td>
<td>Windows/XP / XP Mode / XP Embedded Mode</td>
<td>Intel® Celeron® M 1.5GHz</td>
<td>1MB (Built in the CPU)</td>
<td>DDR SDRAM (PC2700) 1GB (SO-DIMM x 1 slot)</td>
<td>Intel® 855GME</td>
<td>Only on the built-in RAS I/F model.</td>
<td>Phoenix First BIOS Embedded Pro</td>
<td>8MB</td>
<td>262,144 colors</td>
<td>XGA (1024 x 768 pixels)</td>
</tr>
<tr>
<td>PS3650A-T42S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Intel® ULV Celeron® M 1.0GHz</td>
<td>512KB (Built in the CPU)</td>
<td>DDR SDRAM (PC2700) 1GB (SO-DIMM x 1 slot)</td>
<td>Intel® 855GME</td>
<td>Only on the built-in RAS I/F model.</td>
<td>Phoenix First BIOS Embedded Pro</td>
<td>8MB</td>
<td>262,144 colors</td>
<td>XGA (1024 x 768 pixels)</td>
</tr>
<tr>
<td>PS3650A-T42-24V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Intel® Celeron® M 1.5GHz</td>
<td>1MB (Built in the CPU)</td>
<td>DDR SDRAM (PC2700) 1GB (SO-DIMM x 1 slot)</td>
<td>Intel® 855GME</td>
<td>Only on the built-in RAS I/F model.</td>
<td>Phoenix First BIOS Embedded Pro</td>
<td>8MB</td>
<td>262,144 colors</td>
<td>XGA (1024 x 768 pixels)</td>
</tr>
<tr>
<td>PS3650A-T42S-24V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Intel® ULV Celeron® M 1.0GHz</td>
<td>512KB (Built in the CPU)</td>
<td>DDR SDRAM (PC2700) 1GB (SO-DIMM x 1 slot)</td>
<td>Intel® 855GME</td>
<td>Only on the built-in RAS I/F model.</td>
<td>Phoenix First BIOS Embedded Pro</td>
<td>8MB</td>
<td>262,144 colors</td>
<td>XGA (1024 x 768 pixels)</td>
</tr>
<tr>
<td>PS3651A-T42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Intel® Celeron® M 1.5GHz</td>
<td>1MB (Built in the CPU)</td>
<td>DDR SDRAM (PC2700) 1GB (SO-DIMM x 1 slot)</td>
<td>Intel® 855GME</td>
<td>Only on the built-in RAS I/F model.</td>
<td>Phoenix First BIOS Embedded Pro</td>
<td>8MB</td>
<td>262,144 colors</td>
<td>XGA (1024 x 768 pixels)</td>
</tr>
<tr>
<td>PS3651A-T42S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Intel® ULV Celeron® M 1.0GHz</td>
<td>512KB (Built in the CPU)</td>
<td>DDR SDRAM (PC2700) 1GB (SO-DIMM x 1 slot)</td>
<td>Intel® 855GME</td>
<td>Only on the built-in RAS I/F model.</td>
<td>Phoenix First BIOS Embedded Pro</td>
<td>8MB</td>
<td>262,144 colors</td>
<td>XGA (1024 x 768 pixels)</td>
</tr>
<tr>
<td>PS3651A-T42-24V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Intel® Celeron® M 1.5GHz</td>
<td>1MB (Built in the CPU)</td>
<td>DDR SDRAM (PC2700) 1GB (SO-DIMM x 1 slot)</td>
<td>Intel® 855GME</td>
<td>Only on the built-in RAS I/F model.</td>
<td>Phoenix First BIOS Embedded Pro</td>
<td>8MB</td>
<td>262,144 colors</td>
<td>XGA (1024 x 768 pixels)</td>
</tr>
<tr>
<td>PS3651A-T42S-24V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Intel® ULV Celeron® M 1.0GHz</td>
<td>512KB (Built in the CPU)</td>
<td>DDR SDRAM (PC2700) 1GB (SO-DIMM x 1 slot)</td>
<td>Intel® 855GME</td>
<td>Only on the built-in RAS I/F model.</td>
<td>Phoenix First BIOS Embedded Pro</td>
<td>8MB</td>
<td>262,144 colors</td>
<td>XGA (1024 x 768 pixels)</td>
</tr>
</tbody>
</table>

### General Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>International Safety Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS3650A-T42</td>
<td>UL508, CSA-C22.2 No.142-M1987B, EN55011 Class A, EN61000-6-2, EN60950 (AC models only), 47 CFR Part 15 Class A, KCC.</td>
</tr>
<tr>
<td>PS3650A-T42S</td>
<td></td>
</tr>
<tr>
<td>PS3650A-T42-24V</td>
<td></td>
</tr>
<tr>
<td>PS3650A-T42S-24V</td>
<td></td>
</tr>
<tr>
<td>PS3651A-T42</td>
<td></td>
</tr>
<tr>
<td>PS3651A-T42S</td>
<td></td>
</tr>
<tr>
<td>PS3651A-T42-24V</td>
<td></td>
</tr>
<tr>
<td>PS3651A-T42S-24V</td>
<td></td>
</tr>
</tbody>
</table>

### Power Supply

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Voltage</td>
<td>AC100 to 240V DC, AC100 to 240V AC, DC12V to 28.8V AC</td>
</tr>
<tr>
<td>Rated Frequency</td>
<td>50 / 60Hz</td>
</tr>
<tr>
<td>Voltage Endurance</td>
<td>AC1500V 20mA for 1 minute</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>DC 500V, 100g (min.) (between charging and FG terminals)</td>
</tr>
<tr>
<td>Ambient Operating Temperature</td>
<td>&lt;With HDD&gt; 5 to 50°C / &lt;Without HDD&gt; 0 to 50°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>&lt;Without HDD&gt; 0 to 50°C / &lt;With HDD&gt; 5 to 45°C</td>
</tr>
<tr>
<td>Storage Humidity</td>
<td>10 to 90%RH (not Condensing, Wet bulb temperature: -20°C)</td>
</tr>
<tr>
<td>Pollution Degree</td>
<td>10 to 90%RH (not Condensing, Wet bulb temperature: -20°C)</td>
</tr>
<tr>
<td>Airflow</td>
<td>0.88 to 1.11NPa</td>
</tr>
<tr>
<td>Vibration Resistance</td>
<td>&lt;With HDD&gt; 10 to 57Hz, Max. single amplitude: 0.0375m (0.007in) 57 to 150Hz fixed acceleration: 4.9m/s², X, Y, Z directions 10 cycles (for 80 minutes)</td>
</tr>
<tr>
<td>Noise Immunity</td>
<td>&lt;AC mode&gt; Noise voltage: 1.500V/µp, Pulse duration: 50s, 500s, 1µs, Rise time: 1ms (via noise simulator)</td>
</tr>
<tr>
<td>Electrostatic Discharge Immunity</td>
<td>6kV ESD/C112C61000-4-2 Level 3</td>
</tr>
<tr>
<td>Grounding</td>
<td>&lt;AC model&gt; Protective grounding, D box (Same for FG and SG terminals)</td>
</tr>
<tr>
<td>External Dimensions</td>
<td>W313 x H239 x D60mm [W12.32 x H9.41 x D2.36in.]</td>
</tr>
<tr>
<td>Weight approx.</td>
<td>About 3.8g (3.96g) max. (Main unit only)</td>
</tr>
<tr>
<td>Cooling Method</td>
<td>Forced Air Cooling by the CPU fan Natural Air Cooling</td>
</tr>
</tbody>
</table>

### Expansion Slots

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Unit</td>
<td>PS3650A-T42 / PS3650A-T42-S24V / PS3651A-T42 / PS3651A-T42-24V</td>
</tr>
<tr>
<td>Power Supply</td>
<td>DC5V: 1.5A, DC12V: 0.5A, -DC12V: 0.1A, DC3.3V: 0.5A</td>
</tr>
</tbody>
</table>

### Option Menu

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS3650A-T42</td>
<td>1 Serial port and 1 RAS port model</td>
</tr>
<tr>
<td>PS3650A-T42S</td>
<td>2 Serial ports and No RAS port model</td>
</tr>
<tr>
<td>PS3651A-T42</td>
<td>1 Serial port and 1 RAS port model</td>
</tr>
<tr>
<td>PS3651A-T42S</td>
<td>2 Serial ports and No RAS port model</td>
</tr>
<tr>
<td>PS3651A-T42-24V</td>
<td>1 Serial port and 1 RAS port model</td>
</tr>
<tr>
<td>PS3651A-T42S-24V</td>
<td>2 Serial ports and No RAS port model</td>
</tr>
</tbody>
</table>
Industrial Computer Selected for High Usability  **PS3000 SERIES**

Perfectly Suited for Space Saving and Diskless Operation

**PS-3450A / PS-3451A / PS-3000B / PS-3001B**

### 8.4" SVGA

**ULV Celeron® M 1.0GHz**

- Touch-panel mouse emulation (Except for PS-3000B and PS-3001B)
- Rugged aluminum body
- IP66 (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)

<table>
<thead>
<tr>
<th>Model</th>
<th>Size</th>
<th>CPU</th>
<th>Supported OS</th>
<th>Memory</th>
<th>PC/AT Standard Interface</th>
<th>Power Supply</th>
<th>Fanless</th>
<th>Expansion Slots</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS-3450A</td>
<td></td>
<td>ULV Celeron® M 1.0GHz</td>
<td>Windows® XP Pro</td>
<td>DDR</td>
<td>AC100 to 240V</td>
<td>DC24V</td>
<td>—</td>
<td>1 slot</td>
</tr>
<tr>
<td>(AC Model)</td>
<td></td>
<td>SVGA</td>
<td>ML</td>
<td>1GB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PS-3450A</td>
<td></td>
<td>ULV Celeron® M 1.0GHz</td>
<td>Embedded</td>
<td>512MB or 1GB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(DC Model)</td>
<td></td>
<td></td>
<td></td>
<td>DDR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PS-3451A</td>
<td>Node PC</td>
<td>ULV Celeron® M 1.0GHz</td>
<td>Windows® XP Pro</td>
<td>DDR</td>
<td>AC100 to 240V</td>
<td>DC24V</td>
<td>—</td>
<td>1 slot</td>
</tr>
<tr>
<td>(DC Model)</td>
<td></td>
<td></td>
<td>ML</td>
<td>1GB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PS-3000B</td>
<td></td>
<td>ULV Celeron® M 1.0GHz</td>
<td>Embedded</td>
<td>DDR</td>
<td>AC100 to 240V</td>
<td>DC24V</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>PS-3001B</td>
<td></td>
<td>ULV Celeron® M 1.0GHz</td>
<td>Embedded</td>
<td>DDR</td>
<td>AC100 to 240V</td>
<td>DC24V</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

**External Dimensions/Interfaces**

- Ethernet Interface: 1.6 to 10.0 mm
- USB Interface: 0.5 to 5.5 mm
- CF Card Slot: 0.5 to 5.5 mm
- COM Interface: 0.5 to 5.5 mm
- Cooling Fan: 0.5 to 5.5 mm
- Analog RGB Connector: 0.5 to 5.5 mm

- (When HDD is installed)

- Allowable Panel Thickness: 1.6 to 10.0 mm

---

**Panel Cut-Out Dimensions**

- Allowable Panel Thickness: 1.6 to 10.0 mm
### Performance Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Display Type</th>
<th>Display Size</th>
<th>Graphics</th>
<th>Backlight</th>
<th>Effective Display Area</th>
<th>Brightness Control</th>
<th>Supported OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS3450A-T41</td>
<td>TFT LCD color</td>
<td>8.4&quot;</td>
<td>SVGA</td>
<td>CCFL (User non-replaceable parts, return system to distributor)</td>
<td>W72.4 x H129.8mm [W:72 x H:125.1mm]</td>
<td>4 levels (adjusted with the software)</td>
<td>Windows XP/XP Pro/XP ML/XP Embedded ML</td>
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<tr>
<td>PS3450A-T42-24V</td>
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<td>CCFL (Removable)</td>
<td>W72.4 x H129.8mm [W:72 x H:125.1mm]</td>
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<td>Windows XP/XP Embedded ML</td>
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<tr>
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<td></td>
<td>W72.4 x H129.8mm [W:72 x H:125.1mm]</td>
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<td>Windows XP/XP Embedded ML</td>
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<tr>
<td>PS3300-BA</td>
<td></td>
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<td>W72.4 x H129.8mm [W:72 x H:125.1mm]</td>
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<td>Windows XP/XP Embedded ML</td>
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<td>PS3301-BD</td>
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<td>W72.4 x H129.8mm [W:72 x H:125.1mm]</td>
<td></td>
<td>Windows XP/XP Embedded ML</td>
</tr>
</tbody>
</table>

### General Specifications

#### International Safety Standards

- UL508, CSA-C22.2 no.143-M1987, EN6051 Class A, EN61000-6-2, EN60950-1-AC models only), 47 CFR Part 15 Class A, 47 CFR Part 15 Class B.

#### Power Supply

- Rated Voltage: AC100 to 240V
- Rated Voltage Range: AC85 to 264V
- Rated Frequency: 50 / 60Hz
- Allowable Voltage Drop: Shorter than 1 cycle
- Power Consumption: 120VA (max.)
- Voltage Endurance: AC1500V 20mA for 1 minute,

#### Insulation Resistance

- AC500V 20mA for 1 minute
- AC1500V 20mA for 1 minute
- AC500V 20mA for 1 minute
- AC1500V 20mA for 1 minute

#### Ambient Operating Temperature

- <Without HDD>: 5 to 50°C
- <Without HDD>: 5 to 50°C
- <With HDD>: 5 to 50°C
- <With HDD>: 5 to 50°C

#### Storage Temperature

- <Without HDD>: -20 to 60°C
- <Without HDD>: 35°C max.
- <Without HDD>: 50°C max.
- <Without HDD>: 50°C max.

#### Storage Humidity

- <Without HDD>: 5% to 95%RH
- <Without HDD>: 95%RH (not Condensing, Wet bulb temperature)
- <Without HDD>: 5% to 95%RH
- <Without HDD>: 95%RH (not Condensing, Wet bulb temperature)

#### Pollution Degree

- Accordance: Free of corrosive gases
- IEC 61000-6-2 Level 3
- IEC 61000-6-2 Level 3
- IEC 61000-6-2 Level 3
- IEC 61000-6-2 Level 3

#### Vibration Resistance

- <Without HDD>: 10 to 20Hz, Single amplitude: 0.075mm(0.003in) ±5 to 150Hz
- <With HDD>: 10 to 20Hz, Single amplitude: 0.075mm(0.003in) ±5 to 150Hz

#### Noise Immunity

- Noise Voltage: 1.50Vp-p
- Pulse duration: 50ms, 500ms, 1ms Rise time: 1ms (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 NEMA250 TYPE4X / 12 (When embedding the panel and not using the front panel USB port.)

#### External Dimensions

- PS3450A: W255 x H164 x D124mm [W10.04 x H6.46 x D4.88in]
- PS3450B: W255 x H164 x D68.8mm [W10.04 x H6.46 x D2.71in]

#### Cooling Method

- Forced Air Cooling by the CPU Fan
- Natural Air Circulation

### Expansion Slots

<table>
<thead>
<tr>
<th>Item</th>
<th>Board size</th>
<th>Description</th>
<th>Board size</th>
<th>Description</th>
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<tr>
<td>1st slot</td>
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<td>PS3450A</td>
<td>PS3000-BA</td>
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<tr>
<td>Power Supply</td>
<td>DC5V: 1.5A, DC12V 0.25A, DC-12V: 0.6A, DC12V: 0.1A, DC3V: 0.5A</td>
<td>DC5V: 1.5A, DC12V 0.25A, DC12V: 0.1A, DC3V: 0.5A</td>
<td>PS3000-BA</td>
<td></td>
</tr>
</tbody>
</table>
High Visibility Plus Maintenance Efficacy

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

<table>
<thead>
<tr>
<th>Size</th>
<th>Graphics</th>
<th>DVI</th>
<th>Analog RGB</th>
<th>Display Colors</th>
<th>Power Supply</th>
<th>USB I/F</th>
<th>Backlight Replacement</th>
<th>Housing</th>
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<tbody>
<tr>
<td>FP-3900T</td>
<td>19” SXGA</td>
<td></td>
<td></td>
<td></td>
<td>AC 100 to 240V</td>
<td>USB x 1 (Front Slot)*1</td>
<td>Resin</td>
<td>Rugged aluminum body</td>
</tr>
<tr>
<td>FP-3710T</td>
<td>15” XGA</td>
<td></td>
<td></td>
<td></td>
<td>DC12V</td>
<td>USB x 1 (Bottom Slot)</td>
<td>Resin</td>
<td>Rugged aluminum body</td>
</tr>
<tr>
<td>FP-3650T</td>
<td>12.1” SVGA</td>
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<td>DC12V</td>
<td></td>
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<td>Resin</td>
</tr>
<tr>
<td>FP-3600T</td>
<td>10.4” VGA</td>
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<td>DC12V</td>
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<td>Resin</td>
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<td>FP-3500T</td>
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<td></td>
<td>AC 100 to 240V</td>
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<td></td>
<td>Resin</td>
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<tr>
<td>FP-3710K</td>
<td>15” XGA</td>
<td></td>
<td></td>
<td></td>
<td>AC 100 to 240V</td>
<td>USB x 1 (Front Slot)*1</td>
<td>Resin</td>
<td>Rugged aluminum body</td>
</tr>
</tbody>
</table>

- 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)

External Dimensions/Interfaces

Units: mm [in.]

---

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

Parts Names:

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

---

The front photo is for FS-36**
A USB device can be connected using the USB-HUB function. Connect the touch panel USB cable (Type B) to the host.

A USB port can be set on the panel using a USB front cable (option). Either one of them is used.

Meets applicable testing requirements. Operation is not, however, guaranteed in every environment.

Hazardous Location Class I, Division 2 Groups A, B, C, and D.

**International Safety Standards**

- UL listed per UL 60950 (US/Canada), CSA C22.2 No. 60950-1-1:2002, EN 60950
- CE Marking
- FCC Class B, VCCI Class B
- EN 61000-4-3:2001 + Amendment 1:2002
- EN 61000-4-4:2004
- EN 61000-4-5:1995 + Amendment 1:1996
- EN 61000-4-6:2002
- EN 61000-4-8:2005
- EN 61000-4-11:1994 + Amendment 1:2001
- IEC 61000-4-2:1995 + Amendment 1:1997
- IEC 61000-4-3:2004
- IEC 61000-4-4:1995 + Amendment 1:1996
- IEC 61000-4-5:1995 + Amendment 1:1996
- IEC 61000-4-6:2002
- IEC 61000-4-8:2005
- IEC 61000-4-11:1994 + Amendment 1:2001

**Power Supply**

- Rated Voltage: 5VDC ±5%
- Output Current: 500mA (Max.), Maximum Communication Distance: 5m
- Power Consumption: 5W

**Video**

- Connector: DVI-D
- Input Signal Characteristic: Analog RGB
- Scanning Mode: Non-interlaced
- Synchronous Signal: TTL level, negative true or positive true
- Rise Time: 1ns
- Noise Voltage: 1000Vp-p, Pulse Duration: 1s for 1 minute (via noise simulator)
- FG terminals

**Interface Specifications**

- USB 2.0 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

**General Specifications**

- Model: FP3900-T41-U
- Touch Panel Resolution: 1024 x 768 pixels (SXGA)
- USB Type A x 1
  - Power Voltage: 5VDC ±5%
  - Output Current: 500mA (Max.), Maximum Communication Distance: 5m

**Touch Panel Interface**

- RS-232C or USB2.0 (Type B)
- Communication Distance: 5m
- Synchronous Signal: TTL level, negative true or positive true
- Rise Time: 1ns
- Noise Voltage: 1000Vp-p, Pulse Duration: 1s for 1 minute (via noise simulator)
- FG terminals

**Performance Specifications**

- Model: FP3900-T41-U
- Touch Panel Type: Resistive Film (Analog)
- Number of Key Switches: 7(6)
- Weight: About 2.5kg (5.5lb) or less (Main unit only)

**Input Signal Type**

- DVI-D
- Analog RGB

**Input Signal Characteristic**

- DVI-D
- Synchronous Signal: TTL level, negative true or positive true
- Scanning Mode: Non-interlaced

**Screen Adjustment Function**

- Display Position, 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)

**Storage Specification**

- Ambient Operating Temperature: 0°C to 50°C (within 30°C from the installing angle vertical direction)
- Ambient 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 1 minute (via noise simulator)
- Noise Immunity: Noise Voltage: 1500Vp-p, Pulse Duration: 50ns, 500ns, 1μs, Rise Time: 1ns (via noise simulator)
- Electrostatic Discharge Immunity: 6kV (IEC/EN 61000-4-2 Level 3)

**Package**

- Model: FP3900-T41-U
- Weight: About 7.0kg (15.4lb) or less

**Technical Information**

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.
## Optional Items List

### Software

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP-Pro EX Ver.2.8</td>
<td>EX-ED-V26</td>
<td>Screen creation software</td>
</tr>
<tr>
<td>Pro-Server EX Ver.1.2 Developer</td>
<td>EX-SDV-V12</td>
<td>License for connecting an IPC to a PC via the Ethernet</td>
</tr>
<tr>
<td>Pro-Server EX Ver.1.2 Runtime License</td>
<td>EX-SD LICENSE</td>
<td>License for Pro-Server EX Runtime</td>
</tr>
<tr>
<td>M3S Action License</td>
<td>EX-M3S LICENSE-V10</td>
<td>License key to connect Pro-Server EX and database</td>
</tr>
</tbody>
</table>

*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

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIM Module DDR</td>
<td>1GB</td>
<td>CA7-DDR2-1GB-01</td>
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<td></td>
<td>2GB</td>
<td>CA7-DDR2-2GB-01</td>
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<tr>
<td>RAID Kit</td>
<td>16GB</td>
<td>RAIDKIT-01</td>
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<tr>
<td>HDD Unit</td>
<td>250GB</td>
<td>APL3000-HD250</td>
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<tr>
<td></td>
<td>320GB</td>
<td>APL3000-S32A</td>
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<tr>
<td></td>
<td>640GB</td>
<td>APL3000-S64A</td>
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<td>128GB</td>
<td>APL3000-S128A</td>
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<td></td>
<td>16GB</td>
<td>APL3000-S16A</td>
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<tr>
<td>SSD unit *1</td>
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<td>CA6-CFCALL/1GB-01</td>
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<td>2GB</td>
<td>CA6-CFCALL/2GB-01</td>
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<td>16GB</td>
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<td>USB Front Cable</td>
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<td>CA7-CBLCVDVI-D/RGB-01</td>
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<td>RS-232C Cable</td>
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<td>DVI Cable</td>
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<td>CA3-DFS15-01</td>
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<td>CA7-DFS19-01</td>
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<td>DVI-D/RGB Conversion Cable</td>
<td>3m</td>
<td>CA5-USBEXT-01</td>
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<td>DVI-D/RGB Branch Cable</td>
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<td>CA7-WPG12-01</td>
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<td>9000-USBF</td>
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<td>145053 (for 4715T cutout)</td>
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<td>10m</td>
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</tbody>
</table>

*1 The operating system has not been installed.  *2 Standard attachments for all models. Order for replacement when they 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-3710A/3711A)

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Model</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>DIM Module DDR</td>
<td>1GB</td>
<td>PSA-DDR1G</td>
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<tr>
<td>HDD Unit</td>
<td>1GB</td>
<td>PS3710A-HDD1GB</td>
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<td>PS3710A-HDD4GB</td>
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</tbody>
</table>

*1 The operating system has not been installed.  *2 Standard attachments for all models. Order for replacement 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.
Industrial Personal Computer Option

■ PS3000 SERIES (PS-3650A/3651)

<table>
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<tr>
<th>Accessory Options</th>
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<th>Model</th>
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<th>PS-356A</th>
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<td>1GB</td>
<td>PSA-DDR1G</td>
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</tr>
<tr>
<td>HDO Unit 1</td>
<td>250GB</td>
<td>PSA-DDR250</td>
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<td>CF Card</td>
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<td>PSA-DDR1G</td>
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<td>RS-232C/485 Conversion Unit</td>
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</tr>
<tr>
<td>Installation Gasket</td>
<td></td>
<td>PSA-DDR1G</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Accessory Options</th>
<th>Product Name</th>
<th>Model</th>
<th>PS-3450A</th>
<th>PS-3451A</th>
<th>PS-3000B</th>
<th>PS-3001B</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIM Module DDR</td>
<td>1GB</td>
<td>PSA-DDR1G</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDO Unit 1</td>
<td>250GB</td>
<td>PSA-DDR250</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSD unit</td>
<td>16GB</td>
<td>PSA-DDR16A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF Card</td>
<td>1GB</td>
<td>PSA-DDR1G</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USB Front Cable</td>
<td>1m</td>
<td>PSA-DDR1G</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installation Gasket</td>
<td></td>
<td>PSA-DDR1G</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

■ FP3000 SERIES

<table>
<thead>
<tr>
<th>Accessory Options</th>
<th>Product Name</th>
<th>Model</th>
<th>FP-3900T</th>
<th>FP-3700T</th>
<th>FP-3600T</th>
<th>FP-3500T</th>
<th>FP-3710K</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIM Module DDR</td>
<td>1GB</td>
<td>PSA-DDR1G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDO Unit 1</td>
<td>250GB</td>
<td>PSA-DDR250</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSD unit</td>
<td>16GB</td>
<td>PSA-DDR16A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF Card</td>
<td>1GB</td>
<td>PSA-DDR1G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS-232C/485 Conversion Unit</td>
<td>250GB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USB Front Cable</td>
<td>1m</td>
<td>PSA-DDR1G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td>PSA-DDR1G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

---

**Note:**
- *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 (CAT-RCVLRG-01) is required. *4 Standard attachment for all models. Order for replacement when they are damaged or lost.
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.

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

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

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

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

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.

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

Screen Data

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

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
- Graphic Operator Interface
- PLC

Industrial Panel Computer + WinGP
- Industrial Panel Computer
- 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 Language
- 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

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!

<table>
<thead>
<tr>
<th>Remote RAS Function</th>
<th>WinGP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various remote environments can be constructed using API-DLL.</td>
<td></td>
</tr>
<tr>
<td>Remote Monitor</td>
<td>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.</td>
</tr>
<tr>
<td>Remote Boot</td>
<td></td>
</tr>
<tr>
<td>Remote Shutdown</td>
<td></td>
</tr>
<tr>
<td>Remote Reboot</td>
<td></td>
</tr>
</tbody>
</table>

Data Utilization in Various Applications

- Parade chart, Analysis chart, ABC analysis
- OPC
- DDE
- DLL API
- ODBC
- SMTP
- Actions

Remotely monitoring is also available.

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.

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!".

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 data was transmitted successfully.)*
- RAS function supported.
- The CF card can be easily recovered using the recovery tool.

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

**Alarm symptom monitor**
- Power voltage alarm, Internal temperature alarm
- Cooling fan speed alarm
- Watch dog timer time up
- Touch panel alarm (Orange LED III)
- 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

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

**S-M-A-R-T Function**
Monitoring HDD status, this function warns of and logs a HDD failure signal. (Included in the system monitor.)

**RAS Function**
RAS prevents costly system crashes and downtime.

**For example,** Internal Temperature Increases!!

**Inside panel computer**
- Buzzer
- Pop-up messages
- Automatic OS shutdown
- Power source cooling fan
- Temperature increase
- CPU temperature
- Internal temperature

**Alarm output software**
- Fan slows

**RAS connector output**
- Lamp
- Alarm

**Input**
- External event
- System error signal, etc.

**External event**
- Alarm detection
- External equipment
- Sensors, etc.
Reliability and Operability "Exclusive to Pro-face"

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

<table>
<thead>
<tr>
<th>Pattern 1</th>
<th>Normal operation</th>
<th>To standby condition</th>
<th>OS recovery</th>
<th>To hibernation condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern 2</td>
<td>Normal operation</td>
<td>To standby condition</td>
<td>OS recovery</td>
<td>Shutdown</td>
</tr>
<tr>
<td>Pattern 3</td>
<td>Normal operation</td>
<td>To hibernation condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pattern 4</td>
<td>Normal operation</td>
<td>Shutdown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 user of the time to replace the battery.
  *1 Settable time: 0 to 60 sec.

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.

Easy 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.
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.

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.

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.

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.

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