Operator Interface Plus Control

CANopen HMI Solutions

Corporate Overview
Pro-face America

Operator Interface Touch Screen
CANopen Solutions
Total HMI Solutions Package

HMI Software
GP-Pro EX

HMI Connectivity
Drivers and Accessories
Third-Party Support

Operator Interface & Operator Interface Plus Control
LT3000 Series
AGP3000 Series
About Pro-face

Pro-face is a global supplier of a broad range of plant visualization and control solutions for industrial automation markets. We offer dedicated and PC-based open HMI solutions designed to increase machine and plant efficiency while reducing overall system costs. Our principal products include Pro-face brand operator interfaces, industrial PCs and HMI software plus Xycom brand industrial computers and monitors.

Pro-face America, headquartered in Saline, Michigan is the North American sales office. Pro-face products are supported by 17 major offices with over 1200 representatives around the world.

Innovative

• #1 in delivering lowest cost of product ownership
• #1 in maintaining panel cutout compatibility 20+ years
• #1 in HMI hardware and data connectivity
• First to deliver industrial flat panel operator interface touch screens
• Manufacturer of the original QuickPanel®

Proven

• 35+ years of industrial HMI solutions
• Over 1.5 million operator interfaces in use today
• Installed in more than 300,000 factory-floor systems worldwide
• Serving 50 countries and expanding

Trusted

Pro-face is installed in the world’s most recognized manufacturing facilities.

Find us here (and other places):
Industrial Automotive  Food & Beverage  Agriculture
Packaging  Material Handling  Oil & Gas
Water/Wastewater  Semiconductor  Power Generation

Industry leading technology solving today’s toughest factory problems.
Our Commitment to You

Experience Pro-face Global Value, Service and Investment Protection

■ Outstanding Value and Service
- ONE development software for open and dedicated HMI products
- No charge for HMI communication drivers
- Conversion and product migration assistance

■ Exceptional Support
Phone-in Priority Tech Support
- No contracts, no hassles
- Direct connect to live product support specialists
- +95% problem resolution and callback in 24 hr

On-site HMI Application Assistance
- Highly trained field technical specialist
- Proof-of-concept assistance

Remote HMI Application Engineer
- Real-time HMI troubleshooting services
- HMI project file analysis with simulation

■ Expert Training and Online Resources
Instructor-led HMI Training
- On-site self-paced product training
- HMI competency skills building
- HMI efficiency tips and tricks

24/7 Knowledge-Base & Learning Center Access
- Extensive product resource center (Otasuke Pro)
- Manuals/datasheets/updates/demos/FAQs
- Self-paced training and learning resources

■ Unsurpassed Investment Protection
Phone-in Priority Tech Support
- Global product support network
- 20+ years cutout compatibility
- 7 year factory service and support
- 5-day repair turnaround (Priority 1-day upon request)
Flexibility, Reliability, and System Cost Reduction with Innovative all-in-one Operator Interface

**AGP3000 Series**
HMI Plus Control and Integrated CANopen Master

- 6” to 12” HMI Touch Controller
- Integrated CANopen Master communications
- Supports 3rd Party CANopen Slave Devices
- Supports HTB CANopen Slave and EXM modules
- Extensive Protocol Support
- Extensive Data Sharing networking
- Supports Remote Diagnostics and Monitoring
- Supports Video and Sound options
- USB and Compact Flash port for data storage
- Programs with GP-Pro EX HMI Software

**LT3000 Series**
HMI Plus Control with CANopen Master CA8 Module

- 3.8” and 6” Compact HMI Touch Controller
- CANopen Master when used with CA8-CANLT-01 Communication module
- Supports 3rd Party CANopen Slave Devices
- Includes High Speed Counters and Pulse Out
- Flexible I/O configuration using EXM modules
- Programs with GP-Pro EX HMI Software

**CANOpen Distributed I/O Slave Network**
HTB CANopen Slave Communication Module and EXM I/O modules

- Up to 63 HTB Slaves
- Up to 7 EXM Modules
- EXM modules are a variety of Pro-face I/O modules for use with LT3000 series or HTB CANopen Slave Communication Module

3rd Party CANOpen Devices
Motion, Drives, Sensors, Specialty I/O
Lose the PLC – Cut System Costs – Enhance Performance

Typical CANopen Solution

Pro-face AGP3000 CANopen Solution

Benefits
- Integrated CANopen Master
- Multiple simultaneous protocol support
- Highly flexible and expandable HMI solution
- Reliable communications networking and sharing
- One software for HMI and Control (GP-Pro EX)

Applications
- Food and beverage packaging machine
- Packaging form fill, seal bag filling machine
- Automotive pick and place machine
- Automotive in-line conveyor assembly
- Plastic blow molding applications

Pro-face LT3000 CANopen Solution

Benefits
- Cost effective solution
- Built-in high speed counters and pulse output
- Reliable communications network
- Reduce panel wiring
- Less devices to support
- One software for HMI and control

Applications
- Light railway systems
- Automated guided vehicles
- Plastic injection molding
- Drilling, grinders, and buffing machines

Easier Data Networking and Collection

Eliminate
- PLC Controller
- Supporting unnecessary extra protocols
- PLC software, support, maintenance
- Large cabinet size and panel build

Eliminate
- Multiple Databases
- HMI collects data from connected devices including PLC
- Stores data locally or uploads to server
- No need to synchronize data between databases
- Shares data with other devices
- More Secure, Simpler, Easier to Maintain
- Supports remote monitoring
One HMI Software Package

Includes:
All the Protocols +
HMI Development +
Logic Programming
Multiple Platform Support =

GP-Pro EX HMI Plus Control Application Software

Internet and remote maintenance, diagnostics and monitoring with these tools
• Pro-Server EX
• GP-Viewer EX
• Web Server
• RPA (Remote PC Access)
• FTP Server

* LT3000 Series only supports Pro-Server EX remote tools.

Dedicated HMI

Graphic Operator Interface
Touch screens equipped with Ethernet, USB, CompactFlash, serial, supporting simultaneously protocol support. Extensive data sharing and networking capability.

AGP3000 SERIES
AST3000 SERIES
LT3000 SERIES

Dedicated with Control All-In-One
Cost effective touch screen controller with integrated and expandable I/O, display and logic.

Open HMI

Industrial Panel Computer
Wide application range of Industrial PCs with UL Class 1 Div 2 certifications. Used with WinGP (GP-Pro EX open platform runtime) to create ON-Demand Operator Interface.

APL3000 SERIES
High Performance
PS3000 SERIES
Standard Performance

IPC runtime engine WinGP

Standardize your HMI application software with Pro-face GP-Pro EX

Drives
Motion Controls
Temperature Controllers
Scanners
PLC
One HMI software plus control logic programming software simplifies and reduces HMI application development

Added functionality to coordinate logic program and HMI development. Drag and drop parts or instructions between the logic and drawing editors to map symbols/variables to newly created instructions or parts. This coordination between the editors allows for efficient development of your HMI screens and logic programs, thereby reducing time of development.

Editing made easy!

Define PLC / Device Addresses
You can use device addresses of connected equipment directly in the logic program. This simplifies interlock and other features.

Subroutine blocks
You can set up the initialization logic, main logic, and subroutines as blocks so that editing proceeds smoothly.

Drag and drop
Drag and drop between the drawing and logic screens.

Number of steps
The program size is made obvious by displaying the number of steps. Normal capacity is 15,000 steps. By using the program area, you can increase this to 60,000 steps. However, this reduces the screen data capacity to 1 MB.

Displaying comments
Popping up comments as tool tips makes the logic easy to follow. Optionally, you can choose to display comments all the time.

“Drag and Drop” for Easy Settings

Mapping I/O with Drag and Drop
Drawing a switch / lamp on the screen
**Third-Party Device Support**

### Drivers

**PLC Drivers**

- **Rockwell Automation**
  - DF1
  - DH-485
  - EtherNet/IP (SLC500/PLC5/Logix)
  - EtherNet/IP (ControlLogix/CompactLogix Tag-Based)
  - DeviceNet Slave

- **Siemens AG**
  - SIMATIC S7 3964 (R)/RK512
  - SIMATIC S7 MPI Direct
  - SIMATIC S7 Ethernet
  - SIMATIC S5 CPU Direct
  - PROFIBUS DP Slave

- **GE Fanuc Automation**
  - Series 90 Ethernet (SRTP)
  - Series 90-30/70 SNP
  - Series 90-30/70 SNP-X

- **Schneider Electric**
  - Modbus Master (SIO or TCP)
  - Modbus Slave (SIO or TCP)
  - Modbus Plus
  - Uni-Telway

- **Modbus IDA**
  - General Modbus RTU Master (SIO)
  - General Modbus TCP Master (Ethernet)

- **Emerson Process Control**
  - Emerson ROC Plus (Eth/SIO)

- **FANUC**
  - Power Mate Series

- **FATEK Automation Corporation**
  - FB Series SIO

- **Fuji Electric Corp.**
  - MICREX-F Series SIO
  - MICREX-SX Series (Eth/SIO)

- **Hitachi Industrial Equipment Systems**
  - HIDIC H Series (Eth/SIO)

- **SAIA-Burgess Controls**
  - SAIA S-Bus SIO

- **Sanmei Electronics Co., Ltd.**
  - Si/CutyAxis Series SIO

- **Sharp MS Corp.**
  - JW Series Computer Link SIO
  - JW Series Computer Link Ethernet

- **Toshiba**
  - Computer Link (Eth/SIO)
  - PROCEX T-ethernet

- **Toyota Machine**
  - YOKOGA Electric Corp.  
  - Personal Computer Link (Eth/SIO)
  - FA-M3 (Ethernet)

### Bar-Code, 2-D Readers & Printers

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Type</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aimex Corp.</td>
<td>BR-530RS</td>
<td>Pen</td>
<td>Requires BB-60 power supply</td>
</tr>
<tr>
<td>OPT Electronics</td>
<td>OPT-6125-RS</td>
<td>Touch scanner (read wide: 65mm)</td>
<td>Requires DCS3900 for power</td>
</tr>
<tr>
<td>Denso Co.</td>
<td>HC-361TR</td>
<td>Touch scanner (read wide: 61mm)</td>
<td>Requires P-200 for power; also requires KRS-423-XF1K connector cable (from Sanwa Supply)</td>
</tr>
<tr>
<td>HHP</td>
<td>IT3800L-12</td>
<td>Linear image</td>
<td>Requires cable 42203758-03 (IT3800L-12 reader has been shown to work but is not fully tested)</td>
</tr>
<tr>
<td>Cognex</td>
<td>Daumap 7500</td>
<td>1-D and 2-D bar-code scanner</td>
<td>Requires cable 42206139-04E cable, also requires power supply</td>
</tr>
<tr>
<td>Any/All</td>
<td>Any</td>
<td>Printer</td>
<td>ASII text</td>
</tr>
<tr>
<td>Aimex Corp.</td>
<td>BR-530UK</td>
<td>Pen</td>
<td>Power supply not required</td>
</tr>
<tr>
<td>OPT Electronics</td>
<td>OPT-6125-USB</td>
<td>Touch scanner (read wide: 65 mm)</td>
<td>Power supply not required</td>
</tr>
<tr>
<td>Denso Co.</td>
<td>HC-361TR-K</td>
<td>Touch scanner (read wide: 61mm)</td>
<td>Power supply not required</td>
</tr>
<tr>
<td>HHP</td>
<td>IT3800</td>
<td>Hand-held industrial scanner</td>
<td>S300SRO50-0500 is complete with USB cable</td>
</tr>
<tr>
<td>Symbol</td>
<td>LS3408-FZ</td>
<td>Hand-held industrial scanner</td>
<td>Part #LS3408-FZ20005 needs cable CBA-U101-S072A</td>
</tr>
<tr>
<td>Symbol</td>
<td>LS2600</td>
<td>1-D bar-code scanner</td>
<td></td>
</tr>
<tr>
<td>Epson</td>
<td>Stylus Photo R200/R260</td>
<td>Inkjet printer</td>
<td>Use USB cable FP-US00 or commercial type</td>
</tr>
<tr>
<td>Epson</td>
<td>Any</td>
<td>ECS/P34-J84(C) compatible</td>
<td>Use USB conversion cable IEEE1284 (commercially available)</td>
</tr>
<tr>
<td>NEC</td>
<td>Any</td>
<td>PC-FR01-PL compatible</td>
<td>Use USB conversion cable IEEE1284 (commercially available)</td>
</tr>
<tr>
<td>Any/All</td>
<td>Any</td>
<td>Remote print server</td>
<td>Use ethernet network to connect to remote print server</td>
</tr>
<tr>
<td>Any/All</td>
<td>Any</td>
<td>Printer</td>
<td>ASII text</td>
</tr>
</tbody>
</table>

### Fieldbus Module

- **CC-Link Partner Association**
  - CC-Link Intelligent Device

- **ODVA**
  - DeviceNet Slave

- **PROFIBUS International**
  - PROFIBUS DP Slave

### Other Connections

- **Digital Electronics Corp.**
  - Memory Link (Eth/SIO)
  - General Ethernet (using Script)
  - General Serial (using Script)

- **Banner Engineering Corp.**
  - Presence Sensors (6/1/2009)
  - Banner Engineering Corp.
  - PresencePlus Ethernet Cameras

- **COGNEX**
  - Insight 5000 and Micro Ethernet Cameras

### Robot Controllers

- **GE Fanuc Automation**
  - Series 90 Ethernet (SRTP)

- **Hyundai Heavy Industries**
  - H14 Robot Driver

- **IAI Corporation**
  - Robo Cylinder Modbus SIO
  - X-Sel Controller

### Inverters

- **Hitachi IES Co., Ltd.**
  - Inverter ASCII SIO
  - Inverter Modbus RTU

- **Mitsubishi Electric Corporation**
  - Robot Controllers

- **YASKAWA Electric Corp.**
  - FREQROL Inverter (SIO)

- **YASKAWA Electric Corp.**
  - PROSEC-T Ethernet
LT3000 Plus CANopen Master Module Series Features

**Touch-Screen Display**
- **Ideal for:**
  - Tight spaces
  - Alternative to text displays

**USB**
- Data storage
- Barcode input

**Pulse Output**
- Stepper: pulse out to 65 kHz
- Speed: up to 7800 RPM
- Four-axis single-direction/
  Two-axis cw/ccw

**Ethernet**
- **(LT3300 only)**
  - **Ideal for:**
    - Data collection
    - Remote reporting

**Serial Port**
- **(LT330x only)**
  - **Ideal for:**
    - Temperature controllers
    - Drives and inverters
    - Multidrop communications
    - Sending/receiving ASCII

**CANopen Master**
- (Requires optional communication module)
  - **Ideal for:**
    - Interfacing to third-party CANopen devices
    - Enhancing your machine functionality

**Expandable I/O**
- 24 VDC
- Inputs for sensors, switches
- Outputs for
  - - lamps, stack lights, valves

**AGP3000 CANopen Series Features**

**Expansion Bus**
- Communication modules
  - DeviceNet™ slave
  - PROFIBUS DP slave
  - Others planned

**Ethernet 10/100 Base-T**
- Transfer screen data
- PLC and other controllers
  (see drivers list)

**AUX/Sound Output**
- **Ideal for:**
  - Speaker output

**Video Input/Output**
- Support for GP2000 VM module
- 4 inputs - NTSC or PAL

**CompactFlash® Card Socket**
- Storing images
- Storing recipe (filing) data
- Download via CF card
- Storing video
- And more...

**USB 1.1 Host Interface**
- (1 or 2 ports)
  - Transfer screen data
    (using CA3-USBCB-01)
  - Modbus Plus communication module
  - Barcode/2D readers
    (see bar-code/2D list)
  - Printers (see printers list)
  - USB flash memory
  - Modem transfer
  - And more...

**Video Input/Output**
- Support for GP2000 VM module
- 4 inputs - NTSC or PAL

**COM1**
- (115.2kbps max.)
  - RS-232C/422/485
  - PLC and other controllers
    (see drivers list)
  - Extended serial scripting to ASCII devices

**COM2**
- (115.2kbps max.)
  - RS-422/485
  - PLC and other controllers
    (see list)
  - Including MPI direct at 1875kbps
  - Extended serial scripting to ASCII devices

- These interfaces represent the entire line of AGP3000-CAN1M line of products. See data sheets for individual model specifications.
- USB - See driver list for supported third-party devices
- Up to four PLC protocols simultaneously (AGP33xx supports two)
- Please refer to documentation for allowable configurations.

---

2 AGP34xx, 35xx, 36xx and 37xx models include AUX/sound outputs
Sounds must be converted from .WAV format

3 Requires CA3-USBCB-01 for transfer of screen data

4 Not available on 3302B or 32xx

5 Compatible with AGP35xxT and 36xxT TFT display models only
Operator Interface CANopen Solutions

Control C Class:
Operator interface and PLC controller all-in-one solution. Simplify your machine design while reducing overall system cost.

LT Series:
OEM HMI touch controllers ideal for standalone machines.

### Feature Comparison

<table>
<thead>
<tr>
<th>Screen size</th>
<th>AGP3000-CA1M Series</th>
<th>LT3x00 with CANopen Master Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1”</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>10.4”</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>7.5”</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>5.7”</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>5.7”</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>3.8”</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Function</th>
<th>AGP3000-CA1M Series</th>
<th>LT3x00 with CANopen Master Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logic program</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>External I/O program</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Internal operation</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>RPA (Remote PC Access)</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Web server</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Multi Protocol Support</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Ladder Monitor</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Device Monitor</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Pass-through</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Logic Monitor</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Address Monitor</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Online Edit</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

*1 Function expansion memory is required  
*2 TFT type only  
*3 LT320x supports CANopen Master plus one additional protocol  
*4 LT320x supports CANopen Master but no additional protocols
### Feature and Comparison Chart

**AGP Series:**
Advance performance and communications HMI. Ideal for HMI standardization of the visually connected plant.

#### 7.5-inch

<table>
<thead>
<tr>
<th>VGA</th>
</tr>
</thead>
<tbody>
<tr>
<td>SID</td>
</tr>
</tbody>
</table>

- AGP3400-T1-D24-CA1M
- AGP3400-S1-D24-CA1M

#### 10.4-inch

<table>
<thead>
<tr>
<th>SVGA</th>
</tr>
</thead>
<tbody>
<tr>
<td>SID</td>
</tr>
</tbody>
</table>

- AGP3510-T1-AF-CA1M
- AGP3500-S1-AF-CA1M
- AGP3500-T1-AF-CA1M
- AGP3600-T1-D24-CA1M

#### 12-inch

<table>
<thead>
<tr>
<th>SVGA</th>
</tr>
</thead>
<tbody>
<tr>
<td>SID</td>
</tr>
</tbody>
</table>

- AGP3600-T1-AF-CA1M
- AGP3600-T1-D24-CA1M

### Ordering Information

#### AGP3

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>*</td>
<td>*</td>
<td>-</td>
</tr>
</tbody>
</table>

**A:** Display Size
- 3: 5.7” QVGA (320 x 240 dots), VGA (640 x 480 dots)
- 4: 7.5” VGA (640 x 480 dots)
- 5: 10.4” VGA (640 x 480 dots), SVGA (800 x 600 dots)
- 6: 12.1” SVGA (800 x 600 dots)

**B:** Display Resolution
- 00: Standard Screen Resolution
- 10: High Screen Resolution

**C:** Display Type
- A: Monochrome LCD
- L: STN Color LCD
- S: TFT Color LCD

**D:** Power Supply
- AF: AC Power Supply
- D24: DC Power Supply

### Expansion Unit Interface

For fieldbus networking modules, e.g., DeviceNet™, PROFIBUS communication.

### CF Card Interface

Use CF cards to support data logging, recipe data and “travel-free” field updates.

### Video Module Interface

BNC, RCA or DVI Video Modules are available, see accessories page for details.

### CANopen Interface

Integrated CANopen Master included with AGP3000 units. LT3000 units require CA8-CANLT-01 communication module to implement CANopen Master Communications.

#### LT3

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>*</td>
<td>*</td>
<td>-</td>
<td>*</td>
</tr>
</tbody>
</table>

**A:** Display Size
- 2: 3.8” QVGA (320 x 240 dots)
- 3: 5.7” QVGA (320 x 240 dots)

**B:** Machine Grade
- 00: Standard Machine
- 01: Basic Machine

**C:** Display Type
- A: Monochrome LCD
- L: STN Color LCD
- S: TFT Color LCD

**D:** Power Supply
- AF: AC Power Supply
- D24: DC Power Supply

**E:** Output
- C: Source Outputs
- K: Sink Outputs
**LT3000 Series**

### PERFORMANCE SPECIFICATIONS

<table>
<thead>
<tr>
<th>LT-3201A</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Display Type</strong></td>
<td>Monochrome</td>
</tr>
<tr>
<td><strong>Display Colors/Shades</strong></td>
<td>Black and White</td>
</tr>
<tr>
<td><strong>Backlight</strong></td>
<td>Amber / Red LED</td>
</tr>
<tr>
<td><strong>Display Resolution</strong></td>
<td>W320 x H240 pixels (QVGA)</td>
</tr>
<tr>
<td><strong>Effective Display Area</strong></td>
<td>78.8 [3.10] x 68.6mm [2.68&quot;]</td>
</tr>
<tr>
<td><strong>Brightness Control</strong></td>
<td>8 levels of adjustment available via touch panel</td>
</tr>
<tr>
<td><strong>Contrast Adjustment</strong></td>
<td>8 levels of adjustment available via touch panel</td>
</tr>
<tr>
<td><strong>Language Fonts</strong></td>
<td>Japanese: 6,862 (Includes 152 native characters)</td>
</tr>
<tr>
<td><strong>Character Sizes</strong></td>
<td>Standard font: 8x8, 8x16, 16x16, 32x32 dot fonts</td>
</tr>
<tr>
<td><strong>Font Sizes</strong></td>
<td>Standard width and height can be expanded up to 8 times (^\text{1})</td>
</tr>
<tr>
<td><strong>Touch Panel Type</strong></td>
<td>Resistive Film (Analogue)</td>
</tr>
<tr>
<td><strong>Touch Panel Resolution</strong></td>
<td>1024 x 1024</td>
</tr>
<tr>
<td><strong>Internal Memory</strong></td>
<td>FLASH EPROM 6MB (^\text{3})</td>
</tr>
<tr>
<td><strong>Backup Memory</strong></td>
<td>SRAM 64KB (^\text{4})</td>
</tr>
<tr>
<td><strong>Program Area</strong></td>
<td>FLASH EPROM 132KB (^\text{5})</td>
</tr>
<tr>
<td><strong>Number of Step</strong></td>
<td>15,000 steps (^\text{6})</td>
</tr>
</tbody>
</table>

### GENERAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>LT-3201A</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input Voltage</strong></td>
<td>DC24V</td>
</tr>
<tr>
<td><strong>Rated Voltage</strong></td>
<td>DC19.2 to 28.8V</td>
</tr>
<tr>
<td><strong>Allowable Voltage</strong></td>
<td>10V or less</td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
<td>15W or less</td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
<td>15W or less</td>
</tr>
<tr>
<td><strong>Voltage Endurance</strong></td>
<td>3000V</td>
</tr>
<tr>
<td><strong>Insulation Resistance</strong></td>
<td>500V</td>
</tr>
<tr>
<td><strong>Surrounding Air Temperature</strong></td>
<td>0 – 60 °C</td>
</tr>
<tr>
<td><strong>Ambient Humidity</strong></td>
<td>15% to 80% (Non-condensation, Wet bulb temperature 35°C or lower)</td>
</tr>
<tr>
<td><strong>Storage Temperature</strong></td>
<td>25 °C to 40 °C</td>
</tr>
<tr>
<td><strong>Storage Humidity</strong></td>
<td>10% to 80% (No condensation, Wet bulb temperature 35°C or lower)</td>
</tr>
<tr>
<td><strong>Pollution Degree</strong></td>
<td>Pollution Degree 2</td>
</tr>
<tr>
<td><strong>Atmosphere</strong></td>
<td>Fume of corrosive gases</td>
</tr>
<tr>
<td><strong>Air Pressure Resistance (Altitude Level)</strong></td>
<td>800 to 11414mPa (from sea level to 2000m max)</td>
</tr>
<tr>
<td><strong>Vibration Resistance</strong></td>
<td>JIS R 3502-1990, IEC 68-2-6 compliant</td>
</tr>
<tr>
<td><strong>Noise Immunity</strong></td>
<td>Noise Voltage: 100V, Pulse Duration: 4µs, Rise Time: 1µs</td>
</tr>
<tr>
<td><strong>Electrostatic Discharge Immunity</strong></td>
<td>6KV (Complies with IEC / EN61000-4-2 Level 3)</td>
</tr>
<tr>
<td><strong>Grounding</strong></td>
<td>Type D (Conventional to SG-FC)</td>
</tr>
<tr>
<td><strong>Ratings</strong></td>
<td>Equivalence: EN60950-1 (For panel and panel mounting) (^\text{1})</td>
</tr>
<tr>
<td><strong>External Dimensions</strong></td>
<td>81.3 [3.22] x 114.0 [4.49] x 23.4mm [0.92&quot;] (Unit only)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>1.0kg [2.20lb] or less (Unit only)</td>
</tr>
</tbody>
</table>

### INTERNATIONAL SAFETY STANDARDS

<table>
<thead>
<tr>
<th>LT-3201A</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conforming Standards</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Input Voltage</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Rated Voltage</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Allowable Voltage</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Voltage Endurance</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Insulation Resistance</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Surrounding Air Temperature</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Ambient Humidity</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Storage Temperature</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Storage Humidity</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Pollution Degree</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Atmosphere</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Air Pressure Resistance (Altitude Level)</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Vibration Resistance</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Noise Immunity</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Electrostatic Discharge Immunity</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Grounding</strong></td>
<td><strong>Certified</strong></td>
</tr>
<tr>
<td><strong>Ratings</strong></td>
<td><strong>Certified</strong></td>
</tr>
</tbody>
</table>

---

1. Korean, Chinese (Simplified) and Chinese (Traditional)/Cyrillic and Thai character support. For more information, see the operation environment for GP-Pro EX.
2. Using the software, you can resize characters.
3. User area.
4. Service life of lithium battery is 10 years or more at a battery ambient temperature of 40°C or less, 4.1 years or more at 50°C or less, 1.5 years at 60°C or less. The backup period is about 100 days after the initial charge (fully charged), and about 6 days up to the end of battery life.
5. Using Pro-face’s Step counting method.
6. Up to 60,000 steps can be made, but this reduces the capacity of the internal screen data memory by 1MB.
7. EX Module and CANopen Master Unit cannot be used at the same time.
8. Available this August.
9. Temperature in and around the panel.
10. **Confirm compatibility under conditions. This does not guarantee compatibility for all environments.**
**Input Specifications**

- **Rated Voltage**: DC24V
- **Maximum Allowable Voltage**: DC28.8V
- **Input Method**: Sink / Source input
- **Rated Current**: 6.5mA (DC24V) (IN0, IN1, IN2, IN4, IN6) 5mA (DC24V) (Other inputs)
- **Input Resistance**: Approx. 3.7kΩ (IN0, IN1, IN2, IN4, IN6) Approx. 4.7kΩ (Other inputs)
- **Input Points**: 12
- **Common Lines**: 1
- **Common Design**: 12 points / 1 common line
- **Operation Range**: Off voltage DC19V or more
- **Input Delay Time**: 0.5 to 20ms *12
- **Input Signal Display**: No LED indicators
- **Isolation Method**: Photocoupler isolation

**Output Specifications**

- **Output Delay Time**: 0.5ms or less (with output DC24V, 200mA)
- **OFF Voltage**: 0.5mA (Pulse / PWM Output Unavailable)
- **Output Voltage Dropout**: DC5.8V or less
- **Output Voltage Leakage (When OFF)**: 0.1mA or less
- **Clamp Voltage**: 39V ± 1V
- **Type of Output**: Transistor Output
- **Common Lines**: 1
- **Common Design**: 6 points / 1 common line
- **External Connection**: 22-pin connector (used with Output section)
- **External Power Supply**: For Signal: DC24V

**High-speed Counter / Pulse Catch Input Specifications**

- **Input Points**
  - CT0(40), CT1(112), CT2(114), CT3(40), CT5(116), CT6(117), CT9(120), CT10(118), CT11(121), CT12(119), CT13(122), CT14(123)
  - User Defined

- **Minimum Pulse Width (Pulse Input)**: 10μs
- **Input Signal ON width**: Spec or more

- **Count Speed (Rise, Fall Time)**: 1μs or less (100Kbps)

- **High Speed Count Frequency**: 100Kbps / 50Kbps
- **Phase**: 1 Phase
- **Counter Edge Designation**: Available
- **Counter Register**: 32-bit UP / DOWN Counter
- **Counter Mode Change**: Set through software
- **Upper / Lower Limit Settings**: Not Available
- **Preload / Presettable**: Available
- **Marker Input (Use Counter Value)**: None, IN0, IN1, IN2, IN3

**Pulse / PWM Output Specifications**

- **Output Points**
  - PL50 to PL53
  - PL60 to PL63
- **Output Method**: PL50 to PL53 (OUT0 to OUT3)
- **PWM0 to PWM3 (OUT0 to OUT3)**
- **Load Voltage**: DC24V
- **Minimum Load Current**: 1mA
- **Maximum Output Frequency**: Max.65kHz (set through software) (Varies depending on the number of CH of High-speed counter, pulse output)
- **Pulse Acceleration**: Available

**Internal Circuit**

- **Output Protection Type**: N-channel MOSFET
- **Surge Control Circuit**: Zener diode
- **Internal Fuse**: 2.5A, 125V (not replaceable)
- **Output Signal Display**: No LED indicators
- **Isolation Method**: Photocoupler isolation
- **External Power Supply**: For Signal: DC24V

* For faster response with light load use an external dummy resistance.
LT3000 Series

LT3300S/L • LT3300/01L

<table>
<thead>
<tr>
<th>PERFORMANCE SPECIFICATIONS</th>
<th>LT3300S</th>
<th>LT3300L</th>
<th>LT33001L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display Type</td>
<td>STN Color LCD</td>
<td>Monochrome LCD</td>
<td>Backlight</td>
</tr>
<tr>
<td>Display Resolution</td>
<td>320 × 240 pixels (QVGA)</td>
<td>128 × 64 pixels (8 shades)</td>
<td>White LED (Contact Pro-face for replacement)</td>
</tr>
<tr>
<td>Effective Display Area</td>
<td>19.2&quot; [490mm] × 11.28&quot; [285mm]</td>
<td>7.6&quot; [195mm] × 4.57&quot; [117mm]</td>
<td>1.3&quot; [33mm] × 0.7&quot; [18mm]</td>
</tr>
<tr>
<td>Brightness Control</td>
<td>8 levels of adjustment available via touch panel</td>
<td>8 levels of adjustment available via touch panel</td>
<td>8 levels of adjustment available via touch panel</td>
</tr>
<tr>
<td>Control Adjustment</td>
<td>8 levels of adjustment available via touch panel</td>
<td>8 levels of adjustment available via touch panel</td>
<td>8 levels of adjustment available via touch panel</td>
</tr>
<tr>
<td>Character Sizes</td>
<td>Standard font: 8×8, 8×16, 16×16, 32×32 dot fonts, Stroke font: 6 to 127 dot fonts</td>
<td>Standard font: 8×8, 8×16, 16×16, 32×32 dot fonts, Stroke font: 6 to 127 dot fonts</td>
<td>Standard font: 8×8, 8×16, 16×16, 32×32 dot fonts, Stroke font: 6 to 127 dot fonts</td>
</tr>
<tr>
<td>Font Sizes</td>
<td>Standard font: Increase Width and Height up to 8 times.</td>
<td>Standard font: Increase Width and Height up to 8 times.</td>
<td>Standard font: Increase Width and Height up to 8 times.</td>
</tr>
<tr>
<td>Text</td>
<td>8×16 dots</td>
<td>40 char. x 15 rows</td>
<td>10 char. x 7 rows</td>
</tr>
<tr>
<td>Touch Panel Type</td>
<td>Resistive Film (Analog)</td>
<td>Resistive Film (Analog)</td>
<td>Resistive Film (Analog)</td>
</tr>
<tr>
<td>Touch Panel Resolution</td>
<td>1024 × 1024</td>
<td>1024 × 1024</td>
<td>1024 × 1024</td>
</tr>
<tr>
<td>Internal Memory</td>
<td>FLASH EPROM 6MB</td>
<td>FLASH EPROM 6MB</td>
<td>FLASH EPROM 6MB</td>
</tr>
<tr>
<td>Backup Memory</td>
<td>SRAM 128KB</td>
<td>SRAM 256KB</td>
<td>SRAM 512KB</td>
</tr>
<tr>
<td>Control Memory</td>
<td>Variable Area: FLASH EPROM 64KB</td>
<td>Variable Area: FLASH EPROM 128KB</td>
<td>Variable Area: FLASH EPROM 256KB</td>
</tr>
<tr>
<td>Program Area</td>
<td>FLASH EPROM 128KB</td>
<td>FLASH EPROM 256KB</td>
<td>FLASH EPROM 512KB</td>
</tr>
<tr>
<td>Number of Step</td>
<td>12,000</td>
<td>250,000</td>
<td>500,000</td>
</tr>
<tr>
<td>Ethernet</td>
<td>IEEE802.3u, 10BASE-T/100BASE-TX, 802.3u, Media: Category 5e, UTP/STP cable, Connector: Modular Jack (RJ45)</td>
<td>Ethernet: 30m, 10BASE-T/100BASE-TX, 802.3u, Media: Category 5e, UTP/STP cable, Connector: Modular Jack (RJ45)</td>
<td>Ethernet: 30m, 10BASE-T/100BASE-TX, 802.3u, Media: Category 5e, UTP/STP cable, Connector: Modular Jack (RJ45)</td>
</tr>
<tr>
<td>Serial</td>
<td>RS-232C/422/485, Asynchronous Transmission: Data Length: 8 bit / 7 bit Stop Bit: 1 bit / 1 bit, Parity: Odd / Even, Communication Distance: 500m (max.)</td>
<td>RS-232C/422/485, Asynchronous Transmission: Data Length: 8 bit / 7 bit Stop Bit: 1 bit / 1 bit, Parity: Odd / Even, Communication Distance: 500m (max.)</td>
<td>RS-232C/422/485, Asynchronous Transmission: Data Length: 8 bit / 7 bit Stop Bit: 1 bit / 1 bit, Parity: Odd / Even, Communication Distance: 500m (max.)</td>
</tr>
<tr>
<td>AUX 1 Expansion Unit (EXT2)</td>
<td>To mount EX Module “7”</td>
<td>To mount EX Module “7”</td>
<td>To mount EX Module “7”</td>
</tr>
</tbody>
</table>

**GENERAL SPECIFICATIONS**

- **International Standards**
  - UL60950, SASI-61010-2-037 Rev.1. No.14341, IEC61800-5-2
- **Input Voltage**
  - DC24V
- **Rated Voltage**
  - DC12.2 to 28.8V
- **Allowable Voltage**
  - 3.3V or less
- **Power Consumption**
  - 27W or less
- **Voltage Endurance**
  - AC 100V/204A for 1 minute (between chassis and FG terminals)
- **Insulation Resistance**
  - DC 500V / 10G ohm or higher (between chassis and FG terminals)
- **Surrounding Air Temperature**
  - 0 to 50°C (14 to 122°F)
- **Humidity**
  - 10 to 90% RH (No condensation, No cold temperature 30°C or lower)
- **Storage Temperature**
  - 20 to -60°C
- **Storage Humidity**
  - 20 to 95% RH (No condensation, No cold temperature 30°C or lower)
- **Pollution Degree**
  - Pollution Degree 2
- **Atmosphere**
  - Free of corrosive gases
- **Air Pressure Resistance (Attestation Altitude)**
  - 800 to 11413hPa (from sea level to 2000m max.)
- **Vibration Resistance**
  - JIS B 3346-2002, IEC61153-2 compliant 5 to 9 Hz, amplitude: 3.5 mm 9 to 160 Hz constant-accelerated velocity: 9.8 m/s² X, Y, Z directions for 10 cycles (100 cycles)
- **Noise Immunity**
  - Noise: 80dB(A) or less, Pulse Duration: 1ms to 10ms
- **Electrostatic Discharge Immunity**
  - ±8kV (Contact Pro-face for replacement)
  - ±15kV (Via nose simulator)

**Dimensions**

- **Weight**
  - 1.3kg (2.86lb) or less (unit only)
- **Cooling Method**
  - Natural air circulation

**Options**

- **Ethernet Interface** (for internal memory)
- **Isolated Interface** (for USB interface)
- **Cable Attached Dimensions**
- **Panel Cut-Out**
- **External Dimensions**

**LT3300S/L does not support Ethernet Interface. Depending on type of connector cable used the dimensions shown above will change. The dimensions given here are representative values and are intended for reference only.**
LT3000 Series

Input Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Voltage</td>
<td>DC24V</td>
</tr>
<tr>
<td>Maximum Allowable Voltage</td>
<td>DC28.8V</td>
</tr>
<tr>
<td>Input Method</td>
<td>Sink / Source Input</td>
</tr>
<tr>
<td>Rated Current</td>
<td>6.5mA (DC24V), (IN0, IN2, IN4, IN6), 4.1mA (DC24V) (Other inputs)</td>
</tr>
<tr>
<td>Input Resistance</td>
<td>Approx. 3.7kΩ (IN0, IN2, IN4, IN6) Approx. 5.1kΩ (Other inputs)</td>
</tr>
<tr>
<td>Input Points</td>
<td>16</td>
</tr>
<tr>
<td>Common Lines</td>
<td>16 points / 1 common line</td>
</tr>
<tr>
<td>Operation Range</td>
<td>ON voltage: DC18V or more</td>
</tr>
<tr>
<td>Input Delay Time</td>
<td>OFF voltage: DC5V or less</td>
</tr>
<tr>
<td>Input Signal Display</td>
<td>OFF to ON: 0.5 to 20ms *12</td>
</tr>
<tr>
<td>Input Signal Display</td>
<td>ON to OFF: 0.5 to 20ms *12</td>
</tr>
<tr>
<td>Input Signal Display</td>
<td>No LED indicators</td>
</tr>
<tr>
<td>Isolation Method</td>
<td>Photocoupler isolation</td>
</tr>
<tr>
<td>External Connection</td>
<td>38-pin connector (used with Output section)</td>
</tr>
<tr>
<td>External Power Supply</td>
<td>For Signal: DC24V</td>
</tr>
</tbody>
</table>

Output Specifications

| Output Range                     | OUT0 to OUT3 | OUT4 to OUT15 |
| Rated Voltage                    | DC24V         |
| Allowable Voltage                | DC21.4 to 28.8V |
| Output Method                    | Sink Output |
| Output Protection Type           | Internal Fuse |
| Surge Control Circuit            | Zener diode |
| Output Protection Type           | Transistor Output |
| Common Lines                     | 8 points / 1 common line * 2 |
| Output Points                    | 16            |
| Output Signal Display            | No LED indicators |
| Isolation Method                 | Photocoupler isolation |
| External Power Supply            | For Signal: DC24V |

High-speed Counter / Pulse Catch Input Specifications

<table>
<thead>
<tr>
<th>Input Points</th>
<th>DC24V Open Collector</th>
<th>DC24V</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTO (IN8)</td>
<td>Used CT8 (IN6), CT7 (IN5) in pairs.</td>
<td></td>
</tr>
<tr>
<td>CT1 (IN2)</td>
<td>User Defined</td>
<td></td>
</tr>
<tr>
<td>CT2 (IN4)</td>
<td>CT2: Phase A, CT3: Phase B</td>
<td></td>
</tr>
<tr>
<td>CT3 (IN6)</td>
<td>User Defined</td>
<td></td>
</tr>
</tbody>
</table>

| Minimum Pulse Width (Pulse Input) | Input signal On with 5μs or less |

<table>
<thead>
<tr>
<th>Count Speed (Rise, Fall Time)</th>
<th>1 Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTO</td>
<td>250μs, Pulse Width Approx. 2μs (for rise time) / 1μs (for fall time)</td>
</tr>
<tr>
<td>CT1</td>
<td>250μs, Pulse Width Approx. 2μs (for rise time) / 1μs (for fall time)</td>
</tr>
<tr>
<td>CT2</td>
<td>250μs, Pulse Width Approx. 2μs (for rise time) / 1μs (for fall time)</td>
</tr>
<tr>
<td>CT3</td>
<td>250μs, Pulse Width Approx. 2μs (for rise time) / 1μs (for fall time)</td>
</tr>
</tbody>
</table>

| High Speed Count Frequency | 100Kbps |
| Count Edge Designation     | Available |
| Count Register             | 32-bit UP / DOWN Counter |
| Upper/Lower Limit Settings | Not Available |
| Preload/Preset            | Available |

Pulse/PWM Output Specifications

<table>
<thead>
<tr>
<th>Output Points</th>
<th>4 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Method</td>
<td>PL50 to PL3 (OUT0 to OUT3), User Defined</td>
</tr>
<tr>
<td>PWM0 to PWM3 (OUT0 to OUT5), User Defined</td>
<td></td>
</tr>
<tr>
<td>Load Voltage</td>
<td>DC24V</td>
</tr>
<tr>
<td>Minimum Load Current</td>
<td>1mA</td>
</tr>
<tr>
<td>Pulse Acceleration</td>
<td>Available</td>
</tr>
<tr>
<td>ON Duty</td>
<td>50% to 10% (at 65kHz) *13</td>
</tr>
</tbody>
</table>

[Input Circuit]

[Output Circuit (Sink Type)]

*For faster response with light load use an external dummy resistance.

*For faster response with light load use an external dummy resistance.

Pin Connection

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Signal Name</th>
<th>Pin No.</th>
<th>Signal Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>IN7</td>
<td>A2</td>
<td>IN6</td>
</tr>
<tr>
<td>A2</td>
<td>IN5</td>
<td>A3</td>
<td>IN4</td>
</tr>
<tr>
<td>A3</td>
<td>IN3</td>
<td>A4</td>
<td>IN2</td>
</tr>
<tr>
<td>A4</td>
<td>IN1</td>
<td>A5</td>
<td>IN0</td>
</tr>
<tr>
<td>A5</td>
<td>IN2</td>
<td>A6</td>
<td>IN11</td>
</tr>
<tr>
<td>A6</td>
<td>IN10</td>
<td>A7</td>
<td>IN13</td>
</tr>
<tr>
<td>A7</td>
<td>IN12</td>
<td>A8</td>
<td>IN15</td>
</tr>
<tr>
<td>A8</td>
<td>IN8</td>
<td>A9</td>
<td>IN14</td>
</tr>
<tr>
<td>A9</td>
<td>IN9</td>
<td>A10</td>
<td>IN10</td>
</tr>
<tr>
<td>A10</td>
<td>IN11</td>
<td>A11</td>
<td>IN12</td>
</tr>
<tr>
<td>A11</td>
<td>IN13</td>
<td>A12</td>
<td>IN14</td>
</tr>
<tr>
<td>A12</td>
<td>IN15</td>
<td>A13</td>
<td>IN0</td>
</tr>
<tr>
<td>A13</td>
<td>IN7</td>
<td>A14</td>
<td>IN6</td>
</tr>
<tr>
<td>A14</td>
<td>IN5</td>
<td>A15</td>
<td>IN3</td>
</tr>
<tr>
<td>A15</td>
<td>IN2</td>
<td>A16</td>
<td>IN1</td>
</tr>
<tr>
<td>A16</td>
<td>IN4</td>
<td>A17</td>
<td>IN10</td>
</tr>
<tr>
<td>A17</td>
<td>IN8</td>
<td>A18</td>
<td>IN13</td>
</tr>
<tr>
<td>A18</td>
<td>IN12</td>
<td>A19</td>
<td>IN15</td>
</tr>
</tbody>
</table>

*11 I/O count differs for combinations.

*12 Digital filter can be set intervals of 0.5ms.

*13 The ON duty error (10%) reduces as the output frequency setting is lower.

*14 ON duty (effective range) increases as the output frequency setting is lower.
### FUNCTIONAL SPECIFICATION

<table>
<thead>
<tr>
<th>AGP-3300T</th>
<th>AGP-3300S</th>
<th>AGP-3300U</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Display Type</strong></td>
<td>TFT Color LCD</td>
<td>STN Color LCD</td>
</tr>
<tr>
<td><strong>Display Colors</strong></td>
<td>65,536 Colors (4 bits/16)</td>
<td>16,894 Colors (4 bits/16)</td>
</tr>
<tr>
<td><strong>Display Resolution</strong></td>
<td>320 x 240 pixels</td>
<td>VGA</td>
</tr>
<tr>
<td><strong>Backlight</strong></td>
<td>CCFL</td>
<td>(Contact Pro-face for replacement)</td>
</tr>
<tr>
<td><strong>Brightness Control</strong></td>
<td>16-levels</td>
<td>2 levels of adjustable available by touch panel</td>
</tr>
<tr>
<td><strong>Contrast Adjustment</strong></td>
<td>32-levels</td>
<td>12-levels of adjustable available by touch panel</td>
</tr>
<tr>
<td><strong>Language Fonts</strong></td>
<td>Japanese: 682 (15 Standard sizes and 80 non-Japanese characters)</td>
<td>ANK: 158</td>
</tr>
<tr>
<td><strong>Character Sizes</strong></td>
<td>Standard: 8 x 8, 8 x 16, 16 x 16, 32 x 32 dot fonts</td>
<td>Stroke font: 6 to 127 dot fonts *3</td>
</tr>
<tr>
<td><strong>Font Sizes</strong></td>
<td>Standard: Width can be expanded up to 8 times</td>
<td>Height can be expanded up to 8 times</td>
</tr>
</tbody>
</table>

### GENERAL SPECIFICATION

<table>
<thead>
<tr>
<th><strong>Models:</strong></th>
<th>CANopen (master)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Display:</strong></td>
<td>5.7&quot; QVGA</td>
</tr>
<tr>
<td><strong>Panel Resolution:</strong></td>
<td>1024 x 1024</td>
</tr>
<tr>
<td><strong>Parts:</strong></td>
<td><strong>DATA BACKUP MEMORY</strong></td>
</tr>
<tr>
<td></td>
<td><strong>APPLICATION MEMORY</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Contrast Adjustment</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Brightness Control</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Dispay Resolution</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Touch Panel Type</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Touch Panel Resolution</strong></td>
</tr>
<tr>
<td><strong>Serial (COM1):</strong></td>
<td>Asynchronous Transmission: RS-232C/422/485</td>
</tr>
<tr>
<td><strong>Data Length:</strong></td>
<td>7/8 bits</td>
</tr>
<tr>
<td><strong>Stop Bit:</strong></td>
<td>1/2 bits</td>
</tr>
<tr>
<td><strong>Parity:</strong></td>
<td>None, Even, Odd *6</td>
</tr>
<tr>
<td><strong>Data Transmission Speed:</strong></td>
<td>2400bps to 115,200bps</td>
</tr>
<tr>
<td><strong>Flow Control:</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>Expansion Unit:</strong></td>
<td>For Communication Unit x 1</td>
</tr>
<tr>
<td><strong>Ethernet:</strong></td>
<td>IEEE802.3u, 10BASE-T/100BASE-TX</td>
</tr>
<tr>
<td><strong>USB:</strong></td>
<td>USB1.1, (USB Type A socket) x 1</td>
</tr>
<tr>
<td><strong>CF Card:</strong></td>
<td>CF Card Slot (Type II) x 1</td>
</tr>
<tr>
<td><strong>Control:</strong></td>
<td>CANopen (master type)</td>
</tr>
</tbody>
</table>

### External Dimensions

<table>
<thead>
<tr>
<th><strong>Cable Attached Dimensions</strong></th>
</tr>
</thead>
</table>

### Panel-cut out

- **Panel Thickness area:** 1.6 [0.06] ± 0.04[0.015] (23)
- **Screen Contrast area:** 156.4 [6.14] ± 0.04[0.015] (23)

### Note

- *1 Changing the Colors setting to "8,192 colors" will disable the blinking feature on all screens in your project. If you wish to use the blinking feature, do not select "8,192 colors".
- *2 Korean, Simplified and traditional Chinese, Cufon, and Thai fonts are downloadable. For details, refer to the SP-Pre EX Operation Environment.
- *3 Font Scales can be set up by software.
- *4 User area
- *5 Air pressure
- *6 Casing method

### Specifications

- **Operating temperature:** -20°C to +60°C
- **Storage temperature:** -20°C to +80°C
- **Humidity:** 10%RH to 90%RH (Non-condensing, wet bulb temperature: 39°C max.)
- **Pollution Degree:** Pollution Degree 2
- **Vibration Resistance:** IECS105A-1 compliant SRT to RTE |
- **Shock Resistance:** Protection Type II (Commercial)  |
- **External Dimensions:** W167, H116, D123 |
- **Weight:** 1.3kg (2.84lb) |
- **Ambient Humidity:** 10%RH to 60%RH
- **Ambient Temperature:** 0°C to 60°C

### Dimensions

| **Panel Thickness area:** | 1.6 [0.06] ± 0.04 [0.015] |
| **Screen Contrast area:** | 156.4 [6.14] ± 0.04 [0.015] |

* *1 Depending on the type of connection cable used the dimensions above will change. The dimensions given are representative values and are intended for reference only.*
Depending on the type of connection cable used the dimensions shown above will change. The dimensions given here are representative values and are intended for reference only.
### Functional Specification

<table>
<thead>
<tr>
<th>AGP 3500/3510T</th>
<th>AGP 3500-T1-AF-CA1M</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Display Type</strong></td>
<td>TFT Color LCD</td>
</tr>
<tr>
<td><strong>Display Colors</strong></td>
<td>85,536 Colors (no 8 bits), 16,384 Colors (enable 8 bit nature)</td>
</tr>
<tr>
<td><strong>Display Resolution</strong></td>
<td>640 x 480 pixels (VGA)</td>
</tr>
<tr>
<td><strong>Backlight</strong></td>
<td>CCFL (re-allocable)</td>
</tr>
<tr>
<td><strong>Effective Display Area</strong></td>
<td>211.3mm x 253.8mm</td>
</tr>
<tr>
<td><strong>Brightness Control</strong></td>
<td>8 levels of adjustment available via touch panel</td>
</tr>
<tr>
<td><strong>Languages Supported</strong></td>
<td>Japanese: 850 Characters (8/16 bits) (including 607 nonalkan), AN/K, 158 Characters</td>
</tr>
<tr>
<td><strong>Character Sizes</strong></td>
<td>Standard: 8 x 8, 16 x 16, 16 x 32, 32 x 32 dot fonts, Stroke font: 6 to 127 dot fonts</td>
</tr>
<tr>
<td><strong>Font Sizes</strong></td>
<td>Standard Font: Width can be expanded up to 8 times. Height can be expanded up to 8 times</td>
</tr>
<tr>
<td><strong>Serial (COM1)</strong></td>
<td>Asynchronous Transmission: RS-232C/422/485</td>
</tr>
<tr>
<td><strong>Data Length</strong></td>
<td>7/8 bits, Stop Bit: 1/2 bits, Parity: none, Odd or Even, Data transmission speed: 2400bps to 115.2kbps, Communication: D-sub 9pin plug</td>
</tr>
<tr>
<td><strong>Ethernet</strong></td>
<td>IEEE802.3u, 10BASE-T/100BASE-TX, Modular jack connector (RJ-45) x 1</td>
</tr>
<tr>
<td><strong>CF Card</strong></td>
<td>Access LED</td>
</tr>
<tr>
<td><strong>CF Card (1)</strong></td>
<td>Equipment by: IP65, F/G-A32 TYPE 42/13</td>
</tr>
<tr>
<td><strong>Variable Area</strong></td>
<td>64KB SRAM (uses lithium battery) *5</td>
</tr>
<tr>
<td><strong>Serial Interface COM1</strong></td>
<td>50/60Hz</td>
</tr>
<tr>
<td><strong>DIO(Sink/Source)</strong></td>
<td>2.7±(5%) max (unit only)</td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
<td>50W or less</td>
</tr>
<tr>
<td><strong>Input Voltage</strong></td>
<td>AC100V to AC240V</td>
</tr>
<tr>
<td><strong>Rated Voltage</strong></td>
<td>DC24V</td>
</tr>
<tr>
<td><strong>Rated Frequency</strong></td>
<td>DC19.2 to DC28.8V</td>
</tr>
<tr>
<td><strong>Insulation Resistance</strong></td>
<td>1000Ω or higher at DC300V (measured between charging and FG terminals)</td>
</tr>
<tr>
<td><strong>Ambient Temperature</strong></td>
<td>0°C to 55°C</td>
</tr>
<tr>
<td><strong>Storage Temperature</strong></td>
<td>-40°C to 85°C</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>10% to 90% (non-condensing), and test temperature: 30°C max.</td>
</tr>
<tr>
<td><strong>Pollution Degree</strong></td>
<td>Pollution Degree 2</td>
</tr>
<tr>
<td><strong>Rated Frequency</strong></td>
<td>50/60Hz</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>External Dimensions: W270.5mm [10.65in.] x H212.5mm [8.37in.] x D57mm [2.24in.]</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>2.7kg (5.9lb) max. (Unit Only)</td>
</tr>
</tbody>
</table>

### General Specification

**AC**

- **Input Voltage**: AC100V to AC240V
- **Rated Voltage**: AC24V
- **Rated Frequency**: DC19.2 to DC28.8V
- **Insulation Resistance**: 1000Ω or higher at DC300V (measured between charging and FG terminals)
- **Ambient Temperature**: 0°C to 55°C
- **Storage Temperature**: -40°C to 85°C
- **Humidity**: 10% to 90% (non-condensing), and test temperature: 30°C max.
- **Pollution Degree**: Pollution Degree 2

**DC**

- **Rated Frequency**: 50/60Hz
- **Dimensions**: External Dimensions: W270.5mm [10.65in.] x H212.5mm [8.37in.] x D57mm [2.24in.]
- **Weight**: 2.7kg (5.9lb) max. (unit only)

### Notes

1. Changing the colors setting to “65,536 colors” will disable the blinking features on all screens in your project. If you wish to use the blinking feature, do not select “65,536 colors”.
2. Roman, Simplified and Traditional Chinese, Katakana, and stroke windows are downloadable.
3. For details, refer to the AGP-Pro EX Operation Environment.
4. Foot Sizes can be set up by software.
5. The external dimensions may vary slightly, depending on the model and accessories.
6. This unit can be used with any AC power supply within the specified range.
7. Pulse Duration: 1μs
8. Rise Time: 1μs
9. The degree of protection provided by these products is equivalent to IP65f, however their performance may be affected by installation.
10. The degree of protection provided by these products is equivalent to IP65f, however their performance may be affected by installation.
11. Refer to the “AGP3000 Series Hardware Manual” for installation instructions.
AGP3000 Series

C Class

10.4" VGA

AGP3500S

Models:
- CANopen (master)
- AC: AGP3500-S1-AF-CA1M
- DC: AGP3500-S1-D24-CA1M

**FUNCTIONAL SPECIFICATION**

<table>
<thead>
<tr>
<th>Display</th>
<th>AGP-3500S</th>
<th>AGP-3500L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>STN Color LCD</td>
<td>Monochrome LCD</td>
</tr>
<tr>
<td>Colors</td>
<td>4,096 Colors</td>
<td>Black and White (16 shades)</td>
</tr>
<tr>
<td>Resolution</td>
<td>840 x 480 pixels (VGA)</td>
<td></td>
</tr>
</tbody>
</table>

**EXTERNAL DIMENSIONS**

<table>
<thead>
<tr>
<th>Width (mm)</th>
<th>Height (mm)</th>
<th>Depth (mm)</th>
</tr>
</thead>
</table>

**INTERIOR DIMENSIONS**

<table>
<thead>
<tr>
<th>Width (mm)</th>
<th>Height (mm)</th>
<th>Thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.06</td>
<td>6.60</td>
<td>1.6 [0.06] to 10.0 [0.39]</td>
</tr>
</tbody>
</table>

**GENERAL SPECIFICATION**

**AC**

- **International Safety Standards**
  - UL60950-1, UL1604, CAN/CSA-C22.2 No.60950-1-03 (c-UL approval), UL508, UL1604, CSA-C22.2 No.14-M95, CSA-C22.2 No.213-M1987, EN55011 Class A, EN61000-6-2, EN60950-1

**DC**

- **Allowable Voltage**
  - Shunt-type fuse: 250V for 1s or less
  - 10mA or less

**Input Voltage**

- AC100V to AC240V
  - DC24V

**Rated Voltage**

- AC85V to AC265V
  - DC24V
  - DC48V

**Rated Frequency**

- 50/60Hz - Rated Frequency
  - 50Hz

**Power Consumption**

- AC100V 0.3A or less
  - DC24V 0.2A or less

**Ratings (for front panel of installed unit)**

- Equivalent to IP65f NEMA #250 TYPE 4X/13
- EN55011 Class A
- EN61000-6-2
- CSA-C22.2 No.213-M1987 (c-UL approval)

**Ambient Temperature**

- 0°C to +50°C

**Ambient Humidity**

- 10%RH to 90%RH (Non-condensing)

**Vibration Resistance**

- 0.5 g at 10 to 500 Hz (for screen data)

**Humidity Resistance**

- 10%RH to 90%RH (Non-condensing)

**Electrostatic Discharge Immunity**

- 6kV (complies with EN 61000-4-2 Level 3)

**Noise Immunity**

- 1500Vp-p

**Protective Type**

- Type 4 (Conforms to IP54)
- Type 13 (Conforms to IP65)

**Weight**

- 3.2kg (7.0lb) max.

**Panel Thickness**

- 1.9 [0.07] (max. 1.0 [0.04] for CANopen)

**Cooling Method**

- Natural air circulation
## AGP3000 Series

### Functional Specification

#### Display Type
- EFT Color LCD

#### Display Colors
- 85.536 Colors (Color/Black) + 16.348 Colors (Black/White) [Enable Black Note] [1]

#### Display Resolution
- 860 x 600 pixels (SVGA)

#### Backlight
- CCFL (Replaceable)

#### Effective Display Area
- 248.0mm [9.76in.] x 186.5mm [7.34in.]

#### Brightness Control
- 6 levels of adjustment available via touch panel

#### Language Fonts

#### Character Sizes
- Standard font: 8 x 8, 8 x 16, 16 x 16 and 32 x 32 dot fonts, Stroke font: 8 to 127 dot fonts

#### Font Sizes
- Standard font: Width can be expanded up to 8 times, Height can be expanded up to 8 times [3]

<table>
<thead>
<tr>
<th>Touch Panel Resolution</th>
<th>1024 x 1024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Length: 7/8 bits, Stop Bit: 1/2 bits, Parity: none, Odd or Even, Data transmission speed: 2400bps to 115,200bps, Connector: D-SUB 9pin plug</td>
<td></td>
</tr>
<tr>
<td>Serial (COM2)</td>
<td>Asynchronous transmission: RS-422/485 (Max)</td>
</tr>
<tr>
<td>Data Length: 7/8 bits, Stop Bit: 1/2 bits, Parity: none, Odd or Even, Data transmission speed: 2400bps to 115,200bps, Connector: D-SUB 9pin plug</td>
<td></td>
</tr>
<tr>
<td>Ethernet</td>
<td>IEEE802.3u, 10BASE-T, 10BASE-TX, network jack connector (RL-4G)</td>
</tr>
<tr>
<td>Expansion Unit(s)</td>
<td>For Communication unit x 1</td>
</tr>
<tr>
<td>USB</td>
<td>USB1.1 Type-A(x2)</td>
</tr>
<tr>
<td></td>
<td>Power voltage 30VDC(2V), Data transmission distance 10m</td>
</tr>
<tr>
<td>CF Card</td>
<td>Rating: 1.02mm (1bit)</td>
</tr>
<tr>
<td>Sound Output</td>
<td>Speaker Output 70W RMS (Rated Load: 8Ω, Frequency: 1kHz)</td>
</tr>
<tr>
<td>Control</td>
<td>Power inlet/terminal voltage: 200-240VAC, 50-60Hz, Input voltage range: 100-240V, Input current range: 0.5-1.5A</td>
</tr>
</tbody>
</table>

#### Panel Expansion Memory
- Installed on function expansion memory interface cover

### General Specification

#### Dimensions
- AGP-3600T
  - External Dimensions: W313mm [12.32in.] x H239mm [9.41in.] x D56mm [2.20in.]
  - Panel Thickness area: 1.6 [0.06]~10.0 [0.39]
  - Accommodates the panel cutout dimensions

#### Panel Cut-out
- AGP-3600T
  - Panel Thickness area: 1.6 [0.06]~10.0 [0.39]

#### Cable Attached Dimensions
- AGP-3600T
  - Video Output Interface (AUX)
  - Voice Output Interface (AUX)

### Parts Number
- 1 Display
- 2 Touch Panel
- 3 Status LED
- 4 Power Input Terminal Block (AC model)
- 5 Power Plug Connector (DC model)
- 6 Serial Interface(COM1)
- 7 Serial Interface(COM2)
- 8 Ethernet Interface (LAN)
- 9 Expansion Unit Interface (AUX)
- 10 USB Interface (Huart)
- 11 CF Card Cover (CF Card Interface, Dip Switches)
- 12 CF Card Access LED
- 13 Auxiliary input/output/Sound Output Interface (AUX)
- 14 CANopen interface
- 15 Function expansion memory interface cover

### External Dimensions

### Panel-cutout

---

1. Changing the Colors setting to "RO.54 colors" will slightly the blinking feature on all screens in your project. If you wish to use the blinking feature, do not select "RO.54 colors.
2. K-Men: Simplified and Traditional Chinese, CJK, and Thai fonts are downloadable. For details, refer to the OP-Pro EX Operation Environment.
3. Font sizes can be set up by software.
4. Depending on the FLEX NETWORK unit, the amount of dedicated channels will change.
5. The degree of protection provided by these products is equivalent to IP65f, however their performance to installation.
6. If you wish to use the blinking feature, do not select "65,536 colors".
7. Operating temperature refers to temperature inside mounting enclosure and on the side of the display.
8. Depending on the FLEX NETWORK unit, the amount of dedicated channels will change.
9. The degree of protection provided by these products is equivalent to IP65f, however their performance to installation.
10. If you wish to use the blinking feature, do not select "65,536 colors".
### Powerful Ladder Logic Instructions

#### Instruction Name | Instruction Landon | Ladder Symbol
--- | --- | ---
**Basic Instruction**
- Normally Open
- Normally Closed
- Out
- Negative Out
- Set
- Reset
- Positive Transition
- Negative Transition
- Jump to Subroutine
- Return
- Repeated number of times (POT)
- Repeated number of times (NEXT)
- Inverse
- Exit
- Power Bar Control
- Power Bar Real
- Logic Wait Instruction

**Timer Instruction**
- On Delay Timer
- Off Delay Timer
- Pulse Timer
- Accumulate On Delay Timer
- Accumulate Off Delay Timer

**Counter Instruction**
- Up Counter
- Down Counter
- Up/Down Counter

**Time Read/Write**
- Time Read
- Time Set
- Data Read
- Data Set
- Add
- Subtract
- Multiplication

**Program Control**
- Arithmetic operation Bit Basic
- Program Control
- Read/Write
- Power Bar
- Transition
- Off Delay
- On Delay

#### Instruction Name | Instruction Landon | Ladder Symbol
--- | --- | ---
**Arithmetic Operation**
- Division
- Modulation
- Increment
- Decrement
- Time Addition
- Time Subtraction
- Logical AND
- Logical OR
- Logical XOR
- Logical NOT
- Move (Copy)
- Block Move (Block Copy)
- Fill Move
- Exchange
- Rotate Left
- Rotate Right
- Rotate Left with Carry Over
- Rotate Right with Carry Over
- Logical AND
- Logical OR
- Logical XOR
- Logical NOT
- Move (Copy)
- Block Move (Block Copy)
- Fill Move
- Exchange
- Rotate Left
- Rotate Right
- Rotate Left with Carry Over
- Rotate Right with Carry Over

#### Instruction Name | Instruction Landon | Ladder Symbol
--- | --- | ---
**Logical Operation**
- Decrement
- Increment
- Time Addition
- Time Subtraction
- Logical AND
- Logical OR
- Logical XOR
- Logical NOT
- Move (Copy)
- Block Move (Block Copy)
- Fill Move
- Exchange
- Rotate Left
- Rotate Right
- Rotate Left with Carry Over
- Rotate Right with Carry Over

#### Instruction Name | Instruction Landon | Ladder Symbol
--- | --- | ---
**Time Operation**
- Time Add
- Time Sub
- Logical AND
- Logical OR
- Logical XOR
- Logical NOT
- Move (Copy)
- Block Move (Block Copy)
- Fill Move
- Exchange
- Rotate Left
- Rotate Right
- Rotate Left with Carry Over
- Rotate Right with Carry Over

#### Instruction Name | Instruction Landon | Ladder Symbol
--- | --- | ---
**Logical Compare**
- Date Compare
- Greater Than
- Greater Than Or Equal To
- Less Than
- Less Than Or Equal To
- Not Equal
- Equal

#### Instruction Name | Instruction Landon | Ladder Symbol
--- | --- | ---
**Convert Instruction**
- Convert Integer to Float
- Convert Float to Integer
- Convert Integer to Hex
- Convert Float to Hex
- Convert Integer to BCD
- Convert Float to BCD
- Convert Integer to ASCII
- Convert Float to ASCII

#### Instruction Name | Instruction Landon | Ladder Symbol
--- | --- | ---
**Function Instruction**
- Average
- Square Root
- Bit Count
- P Dempsey
- PID
- Sine

### How to think scan time

Scan times are composed of a logic program with time for operation and display added because operation displays and logic processing are executed simultaneously by one CPU.

*Instructions with <P> correspond to positive transition instructions (differential transition). By adding P to the end of each instruction notation (LMP, etc.), you can use the instruction as a positive transition instruction (e.g., JMPP, JSRP, etc.).

*Including scan time error 0.3%
### Software and Accessories

**GP-Pro EX - LICENSE**  
HMI development software to create HMI application and control logic. Supports dedicated and Open-HMI operator interfaces.

**Pro-Server EX - LICENSE**  
Cost effective Data Connectivity Server Software to connect factory floor data to Excel, MRP, ERP, MES business systems.

**GP-Viewer EX - LICENSE**  
Remote maintenance tool monitor and/or control HMI remotely. Perform background diagnostics and updates without disrupting the machine operator.

**USB Transfer Cable (1m) CA3-USBCB-01**  
Downloads project data created with GP-Pro EX from PC’s USB port to AGP’s USB port.

**Ethernet Crossover Cable HMI-CAB-ETH**  
6-ft. HMI to PLC ethernet port or to program HMI.

**CompactFlash® card**  
Inserts into the unit’s CF card slot.  
- 512MB CA3-CFCALL/512MB-01  
- 1GB CA6-CFCALL/1GB-01

**USB Front Cable (1m) CA5-USBEXT-01**  
Panel mount USB allows front panel access to AGP USB functions.

**Web Server - FREE**  
Use Internet to view Alarm status, Read/Write to AGP unit, subscribe to RSS feeds.

**FTP Server - FREE**  
Use FTP client to upload diagnostics data, operation log, event recorder video. Upload/download operation data, training videos, recipe data, security settings, etc.

**Memory Loader - FREE**  
Use a CF card or USB device to update HMI project, drivers, and system updates. No field PC required. Great Solution for customer to update their HMI in the field.

**Logic Monitor - FREE**  
Monitor logic control execution and status while running. Great diagnostics tool.

**GP-Pro Server EX**  
HMI development software to create HMI application and control logic. Supports dedicated and Open-HMI operator interfaces.

**Pro-Server EX**  
Cost effective Data Connectivity Server Software to connect factory floor data to Excel, MRP, ERP, MES business systems.

**GP-Viewer EX**  
Remote maintenance tool monitor and/or control HMI remotely. Perform background diagnostics and updates without disrupting the machine operator.

**Pro-Server EX**  
Cost effective Data Connectivity Server Software to connect factory floor data to Excel, MRP, ERP, MES business systems.

**GP-Viewer EX**  
Remote maintenance tool monitor and/or control HMI remotely. Perform background diagnostics and updates without disrupting the machine operator.

**Ask about our wide variety of Device / PLC connection cables and adapters**

---

**GP3000-VM01**  
Video Module (4x BNC IN, 1x DVI IN, 1x DVI OUT) for AGP35x0/36x0/3750-T

**GP3000-DVI01**  
Video Module (1x DVI IN) for AGP35x0/36x0/3750-T

**GP3000-RGB201**  
Video Module (2x RGB IN) for AGP35x0/36x0/3750-T

**GP2000-VM41**  
Video Mix unit for select AGP, GP/GLC Operator Interfaces

**GP3000-EXDM01**  
8MB Expansion Memory for AGP34x0/35x0/36x0/3750

**USB Cable Clamp (2-port) CA5-USBATL-01**  
USB cable clamp for 2-port HMI units to prevent disconnection.

**USB Cable Clamp (1 port) CA5-USBATM-01**  
USB cable clamp for 1-port HMI units to prevent disconnection.

**Installation Fastener CA3-AFFALL-01**  
Used to install the AGP3000 Series into a solid panel (included with unit).

**Protection Sheets**  
Disposable, dirt-resistant cover for screen (5 sheets/set)  
- 12” for AGP3600 series CA3-DFS12-01  
- 10” for AGP3500 series CA3-DFS10-01  
- 8” for AGP3400 series PS400-DF08  
- 6” for AGP/LT3xx series CA3-DFS6-01  
- 3.8” for AGP/LT 32xx series CA6-DFS3-01

**DC Power Supply Connector for AGP33xx and AGP34x0 models CA5-DCCNM-01**

**DC Power Supply Connector for AGP35xx and AGP36xx models CA5-DCCNL-01**
Communication and I/O Options for CANopen

CANopen (master) Type

CANopen Data Transfer Settings

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Type</td>
<td>1:1</td>
</tr>
<tr>
<td>Connection Method</td>
<td>Bus type</td>
</tr>
<tr>
<td>Transfer Method</td>
<td>CSMA/IEEE, Half-duplex serial transmission.</td>
</tr>
<tr>
<td>Transfer Specifications</td>
<td>Asynchronous + phase correction</td>
</tr>
<tr>
<td>Communication Type</td>
<td>1:1</td>
</tr>
<tr>
<td>Transfer Method</td>
<td>CSMA/IEEE, Half-duplex serial transmission.</td>
</tr>
<tr>
<td>Transfer Specifications</td>
<td>Asynchronous + phase correction</td>
</tr>
<tr>
<td>No. of Stations</td>
<td>80 modules</td>
</tr>
<tr>
<td>Bit variable input/output</td>
<td>512 points</td>
</tr>
<tr>
<td>Integer variable input/output</td>
<td>128 points</td>
</tr>
<tr>
<td>Bit variable input/output</td>
<td>512 points</td>
</tr>
<tr>
<td>Integer variable input/output</td>
<td>128 points</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>19W (When the max. of 7 EX modules are connected)</td>
</tr>
<tr>
<td>Connection Method</td>
<td>Bus type</td>
</tr>
<tr>
<td>Transfer Method</td>
<td>CSMA/IEEE, Half-duplex serial transmission.</td>
</tr>
<tr>
<td>Transfer Specifications</td>
<td>Asynchronous + phase correction</td>
</tr>
<tr>
<td>No. of Stations</td>
<td>80 modules</td>
</tr>
<tr>
<td>Bit variable input/output</td>
<td>512 points</td>
</tr>
<tr>
<td>Integer variable input/output</td>
<td>128 points</td>
</tr>
<tr>
<td>Bit variable input/output</td>
<td>512 points</td>
</tr>
<tr>
<td>Integer variable input/output</td>
<td>128 points</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>19W (When the max. of 7 EX modules are connected)</td>
</tr>
<tr>
<td>Connection Method</td>
<td>Bus type</td>
</tr>
<tr>
<td>Transfer Method</td>
<td>CSMA/IEEE, Half-duplex serial transmission.</td>
</tr>
<tr>
<td>Transfer Specifications</td>
<td>Asynchronous + phase correction</td>
</tr>
<tr>
<td>No. of Stations</td>
<td>80 modules</td>
</tr>
<tr>
<td>Bit variable input/output</td>
<td>512 points</td>
</tr>
<tr>
<td>Integer variable input/output</td>
<td>128 points</td>
</tr>
<tr>
<td>Bit variable input/output</td>
<td>512 points</td>
</tr>
<tr>
<td>Integer variable input/output</td>
<td>128 points</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>19W (When the max. of 7 EX modules are connected)</td>
</tr>
</tbody>
</table>

CANopen Remote I/O Unit

Common Specifications

- No. of EX Module Connections: A max. of 7 devices can be connected to the HTB1
- Rated Voltage: DC24V
- Allowable Voltage: DC20.4V to 26.4V (Includes ripple)
- Power Consumption: 19W (When the max. of 7 EX modules are connected)
- Weight: 185g (0.4lb) max. (HTB Only)

Input Specifications

- Input Points: 12 (Common wiring)
- Input Method: Sink/Source Input
- Rated Current: 5mA (I2-I5, I8-I11)
- Operation Range:
  - OFF Voltage: 35µs or less (Not including bounds time)
  - ON Voltage: 10ms or less (Not including bounds time)
- Input Delay Time:
  - OFF: 5ms or less (Not including bounds time)
  - ON: 10ms or less (Not including bounds time)
- Isolation Method:
  - Between input terminal and internal circuits: Photocoupler insulation (Up to AC 500Vrms insulation protection)
  - Input terminal: No insulation

Output Specifications

- Output Points: 2
- Output Method: Transistor source output
- Common Design: 2 points/1 common line
- Maximum Load Voltage: 1A common
- Allowable Voltage Drop: 5mA (I2-I5, I8-I11)

- Output Points: 6
- Output Method: Relay Output
- Common Design: 3 points/1 common, 2 points/1 common
- Maximum Load Voltage: 1A common
- Allowable Voltage Drop: 7mA/1 point (DC24V) (I2-I5, I8-I11)

Pin Connection

- Pin Arrangement: Pin No.
- Signal Name: Description

Module

- CA8-CANLT-01: CANopen Master Module for LT3000 Series
- HTB1CODM9LP: “HTB” Communication Module for Pro-face EXM I/O Modules
- CA9-CANALL/EX-01: CANopen Slave Communication Module for AGP3000
- EXM-DD18DT: 8pt Sink/Source Input, DC24V (On DC15V, Off DC4V)
- EXM-DD16DT: 16pt Sink/Source Input, DC24V (On DC15V, Off DC4V)
- EXM-DDA8RT: 8pt Relay Output, 240VAC/DC30V 2.0A, Common 2 (8.0A)
- EXM-DD08UT: 8pt Sink Input, DC24V 0.1A, Common 1 (3.0A)
- EXM-DD016UK: 16pt Sink Input, DC24V 0.1A, Common 1 (1.0A)
- EXM-DD016DK: 16pt Source Output, DC24V 0.1A, Common 1 (1.0A)
- EXM-DM98BR: 4pt Sink/Source Input, DC24V (On DC15V, Off DC4V)
- EXM-AM12HT: 2ch Input, 12bit, 0 to 10 VDC/4 to 20mA
- EXM-AM33LT: 2ch Temperature Input, IC (Type K/J/T)/RTD (3wire Pt 100)
- EXM-AMO-1HT: 1ch Output, 12bit, 0 to 10 VDC/4 to 20mA
- CA-CN00-TRM: CANopen, 9Pin DSub, No connectors, 10 Meters
- CA-CN90-TRM: CANopen, 9Pin DSub, 90° with Term. Switch
- CA-CABLE-010M: CANopen Cable, No connectors, 10 Meters
- CA-CABLE-050M: CANopen Cable, No connectors, 50 Meters
- CA-CABLE-100M: CANopen Cable, No connectors, 100 Meters
- CA8-CANLT-01
- CA9-CANALL/EX-01 (Q2/09)
- HTB1CODM9LP
- CA-CN00-TRM
- CA-CN90-TRM
- CA-CABLE-010M
- CA-CABLE-050M
- CA-CABLE-100M

CA8-CANLT-01

HTB1CODM9LP

CA9-CANALL/EX-01 (Q2/09)

EX Modules