Pro-face

Your HMI and Industrial PC Authority

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

CELEBRATING 35+ Years of Industrial Automation Solutions

About Pro-face

Pro-face offers you the best solutions for all your application needs

- ✓ Low Maintenance Industrial Computers
- ✓ Remote Maintenance and Monitoring HMI Solutions
- ✓ Factory and Office HMI Data Sharing Solutions
- ✓ Machine Cost Reduction HMI Solutions
- ✓ Ultra-clear Long-life Touch Screen Monitors

About Us

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

The Pro-face Product Value

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)

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

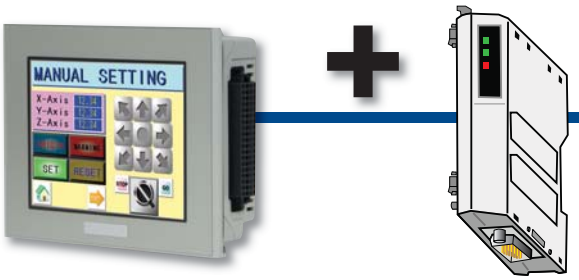
Flexibility, Reliability, and System Cost Reduction with Innovative all-in-one Operator Interface

AGP3000 Series

HMI Plus Control and Integrated CANopen Master

LT3000 Series

HMI Plus Control with CANopen Master CA8 Module



CA8-CANLT-01

AGP3000 Features

- 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 Features

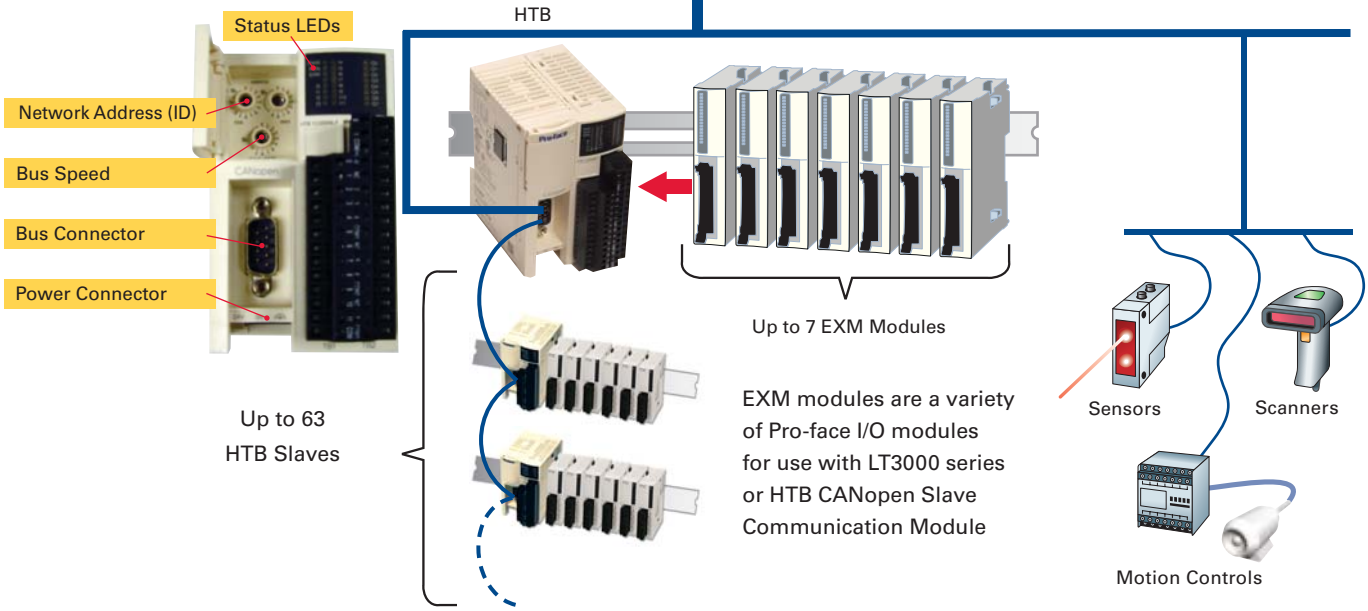
- 3.8″ and 6″ Compact HMI Touch Controller
- CANopen Master when used with CA8-CANLT-01 Communication module
- Supports 3rd Party CANopen Slave Devices
- Includes High Speed Counters and Pulse Out
- Flexible I/O configuration using EXM modules
- Programs with GP-Pro EX HMI Software

CANOpen Distributed I/O Slave Network

HTB CANopen Slave Communication Module and EXM I/O modules

3rd Party CANOpen Devices

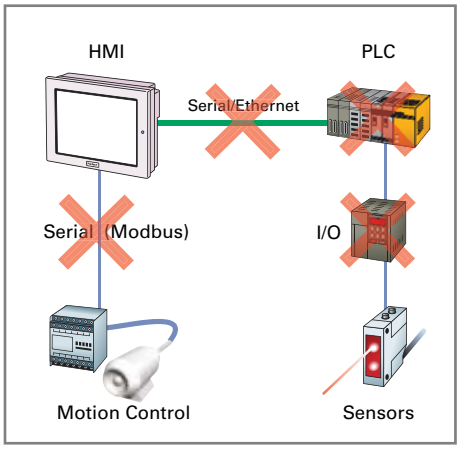
Motion, Drives, Sensors, Specialty I/O



Visual CANopen Networking

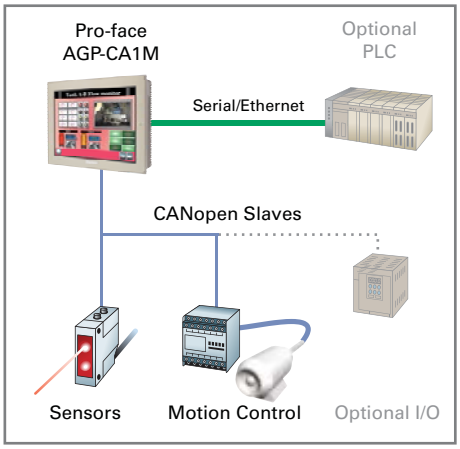
Lose the PLC – Cut System Costs – Enhance Performance

Typical CANopen Solution



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

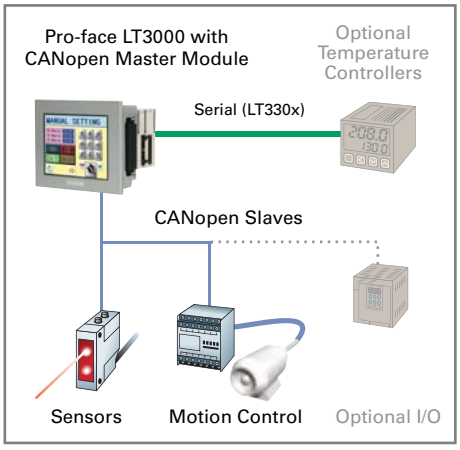
Pro-face AGP3000 CANopen Solution



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

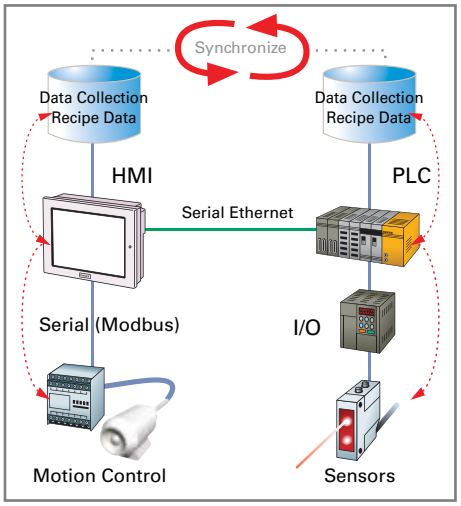
Pro-face LT3000 CANopen Solution

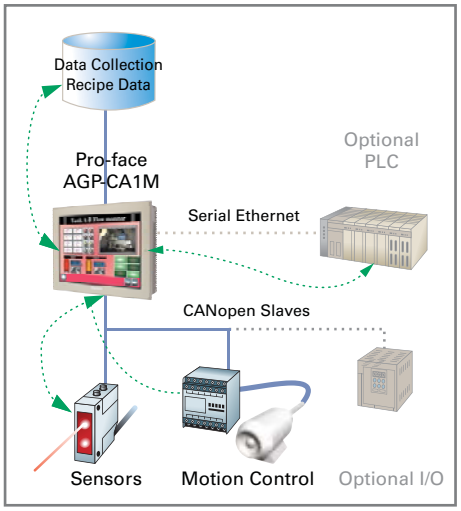


Benefits
- Cost effective solution
- Built-in high speed counters and pulse output
- Reliable communications network
- Reduce panel wiring
- Less devices to support
- One software for HMI and control

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

Easier Data Networking and Collection





Eliminate 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

Office and factory become seamless

Office

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.*

Factory

Factory

Dedicated HMI

Graphic Operator Interface

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

AGP3000SERIES

AST3000SERIES

Dedicated with Control All-In-One

Cost effective touch screen controller with integrated and expandable I/O, display and logic.

LT3000SERIES

HMI / Control

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.

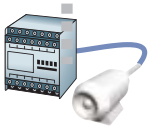
APL3000SERIES
High Performance

PS3000SERIES
Standard Performance

IPC runtime engine WinGP

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

Drives



Motion Controls

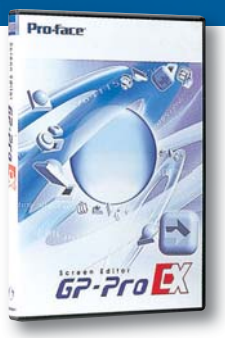
Temperature Controllers

Scanners

PLC

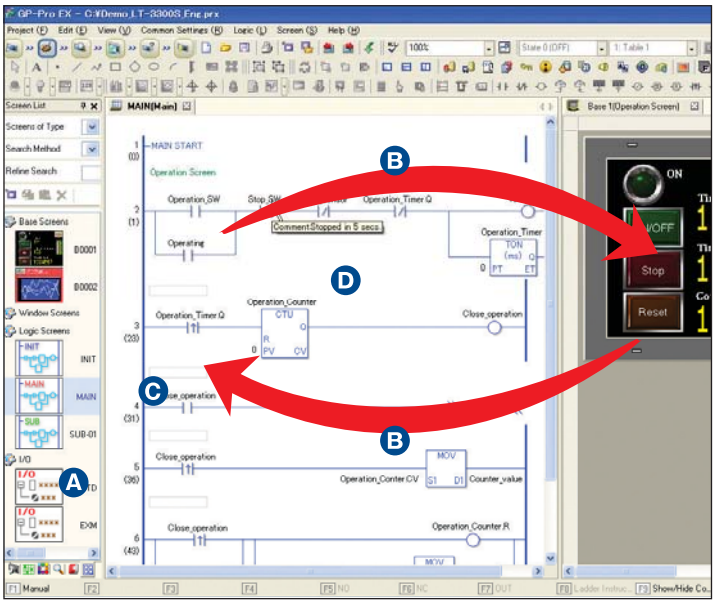
HMI Screen Development + Logic Programming

Screen Editor
GP-Pro EX



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.

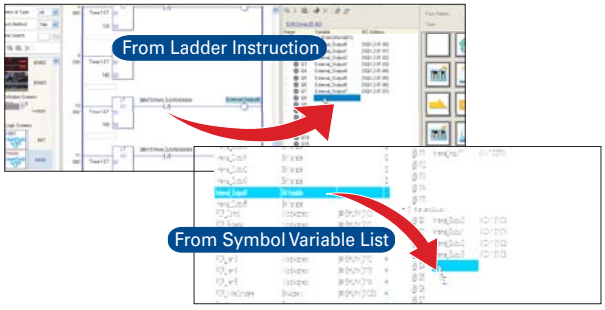
Ⓑ Drag and drop
Drag and drop between the drawing and logic screens.

Ⓒ 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.

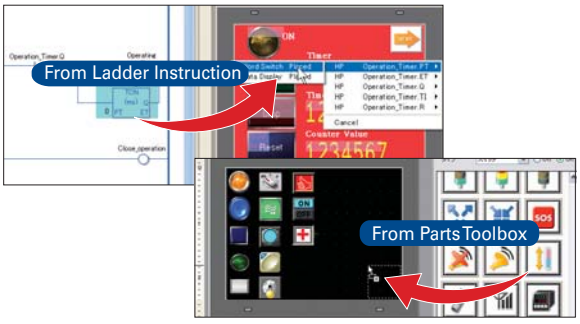
Ⓓ Displaying comments
Popping up comments as tool tips makes the logic easy to follow. Optionally, you can choose to display comments all the time.

"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/ MicroLogix)
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)
S10V Series Ethernet
S10 Series SIO

Hyundai Heavy Industries
Hi4 Robot Driver

JTEKT Corp. (Toyoda Machine Works)
TOYOPUC CMP-LINK (Eth/SIO)
TOYOPUC-PC3J Series

KEYENCE Corp.
KV-10 -80RW/ITW CPU Direct
KV700/1000/3000/5000 Ethernet
KV700/1000/3000/5000 CPU Direct
Visual KV Series CPU Direct

Koyo Electronics Co. Ltd.
KOSTAC/DL Series CCM SIO
KOSTAC/DL Series Modbus TCP

LS Industrial Systems
XGT Series FEnet (Ethernet)
Master-K Series Cnet

Matsushita Electric Works
FP Series Computer Link SIO
XGT Series Cnet (SIO)

Meidensha
UNISEQUE Series Ethernet

Mitsubishi Electric Corp.
A Series CPU Direct
A Series Ethernet
A Series Computer Link
FX Series CPU Direct
FX Series Computer Link
FX Series Ethernet (Q2/2009)
Q Series CPU Direct
Q/QnA Serial Communication
Q/QnA Series Ethernet
QnA Series CPU Direct
QUTE Series CPU Direct

Mitsubishi Heavy Industries
DIASYS Netmation Modbus TCP
MHI STEP3 Ethernet

OMRON Corp.
C/CV Series Host Link
CS/CJ Series Host Link
CS/CJ Series Ethernet

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)
PROSEC-T Ethernet

Toshiba Machine
PROVISOR TC200 (SIO)

Yamatake
DMC50, SDC45 SIO

YASKAWA Electric Corp.
MEMOBUS (Eth/SIO)
MP Series SIO (extension)

YOKOGAWA Electric Corp.
Personal Computer Link (Eth/SIO)
FA-M3 (Ethernet)

Temperature Controllers

CHINO Corporation
Temp. Controller Modbus SIO

Fuji Electric Systems Co., Ltd.
Temp. Controller Modbus SIO

OMRON Corp.
Temp. Controller CompoWay/F

RKC Instrument
Temp. Controller MODBUS SIO
Temp. Controller SIO

Shinko Technos Co. Ltd.
Indicating Controller SIO

Yamatake Corp.
Digital Controller SIO

Yokogowa M&C
Personal Computer Link SIO

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.
PresencePlus Ethernet Cameras

Vision 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
FREQROL Inverter (SIO)

YASKAWA Electric Corp.
Inverter SIO

Please visit our web site for the most updated list of device drivers.

Bar-Code, 2-D Readers & Printers

	Manufacturer	Model	Type	Comments
Serial	Aimex Corp.	BR-530RS	Pen	Requires BB-60 power supply
	OPT Electronics	OPT-6125-RS	Touch scanner (read width: 65mm)	Requires DC5300T for power
	Denso Co.	HC-36IITR	Touch scanner (read width: 61mm)	Requires P-200 for power; also requires KRS-423-XF1K connector cable (from Sanwa Supply)
	HHP	IT3800LR-12	Linear imager	Requires cable 42203758-03 (IT3800LR-12 reader has been shown to work but is not fully tested)
	Cognex	Dataman 7500	1-D and 2-D bar-code scanner	Requires cable 42206139-04E cable, also requires power supply
	Any/All	Any	Printer	ASCII text
USB	Aimex Corp.	BR-530UK	Pen	Power supply not required
	OPT Electronics	OPT-6125-USB	Touch scanner (read width: 65 mm)	Power supply not required
	Denso Co.	HC-36TU-K	Touch scanner (read width: 61mm)	Power supply not required
	HHP	IT5800	Hand-held industrial scanner	5800SR050-0F00 is complete with USB cable
	Symbol	LS3408-FZ	Hand-held industrial scanner	Part #LS3408-FZ20005 needs cable CBA-U01-S07ZA
	Symbol	LS2800	1-D bar-code scanner	
	Epson	Stylus Photo R200/R260	Inkjet printer	Use USB cable FP-US00 or commercial type
	Epson	Any	ECS/P24-J84(C) compatible	Use USB conversion cable IEE1284 (commercially available)
	NEC	Any	PC-PR201-PL compatible	Use USB conversion cable IEE1284 (commercially available)
ETH	Any/All	Any	Remote print server	Use ethernet network to connect to remote print server
	Any/All	Any	Printer	ASCII text

Operator Interface Connectivity Solutions

LT3000 Plus CANopen Master Module Series Features

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

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

USB
- Data storage
- Bar-code input

Pulse Output
- Stepper: pulse out to 65 kHz
- Speed: up to 7,800 RPM
- Four-axis single-direction/ Two-axis cw/ccw

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

High-Speed Counter
- 100 Kpps input

Ideal for:
- Encoder output

Built-in 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
- Speaker output[2]

Video Input/Output
- Support for GP2000 VM module[5]
- 4 inputs - NTSC or PAL

USB 1.1 Host Interface[3]
(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...

CANopen
- Featuring I/O expansion
- Space-saving, less wiring

CompactFlash® Card Socket[4]
- Storing images
- Storing recipe (filing) data
- Download via CF card
- Storing video
- And more...

COM1
(115.2kbps max.)
RS-232C/422/485
- PLC and other controllers (see drivers list)
- Extended serial scripting to ASCII devices
- Bar-code/2-D readers (see bar-code/2-D list)

COM2
(115.2kbps max.)
RS-422/485
- PLC and other controllers (see list) -Including MPI direct at 187.5kbps
- Extended serial scripting to ASCII devices

[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

- These interfaces represent the entire line of AGP3000-CA1M 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.

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.

	3.8-inch QVGA	5.7-inch QVGA	5.7-inch QVGA	
	SIO 2 Ch, USB (Host), CANopen*	SIO 2 Ch, Ethernet, Expansion Unit, USB (Host), CF Card, CANopen*	SIO 2 Ch, Expansion Unit, USB (Host), CF Card, CANopen*	
	**Serial ports not supported by LT3201 *LT3000 Series require CA8-CANLT-01 CANopen Master communication module sold separately.	[1]CF not supported; single SIO port only *LT3000 Series require CA8-CANLT-01 CANopen Master communication module sold separately.	*LT3000 Series require CA8-CANLT-01 CANopen Master communication module sold separately.	
AGP3000		TFT 65,536 colors / STN 4,096 colors DC AGP3300-T1-D24-CA1M AGP3300-S1-D24-CA1M	Mono 16 shades DC AGP3300-L1-D24-CA1M	
LT3000	Amber 16 shades AC LT3201-A1-D24-C** LT3201-A1-D24-K**	STN 4,096 colors DC LT3300-S1-D24-C[1] LT3300-S1-D24-K[1]	Mono 16 shades DC LT3300-L1-D24-C[1] LT3300-L1-D24-K[1]	Mono 16 shades DC LT3301-L1-D24-C LT3301-L1-D24-K

SIO 2ch Serial Interface
COM1: RS-232C/RS-422/RS-485 serial interface. D-SUB 9-pin male connector. Communication method can be switched via software.

COM2: RS-422/RS-422/RS485 serial interface. D-SUB 9-pin female connector.

USB (Host) USB Interface (Host)
USB interface. Can be connected to USB printers, USB bar-code readers, keyboards, memory and a mouse.

Ethernet Ethernet Interface (LAN)
Ethernet communications (10-BASE-T/100 BASE-TX) interface. IEEE 802.3u-compliant. Accepts RJ-45 modular jack connector (8-pin).

AUX Sound Out AUX/Sound Output Interface
This interface accommodates external reset, alarm output, buzzer output and sound output.

Feature Comparison

			AGP3000-CA1M Series				LT3x00 with CANopen Master Module	
	Screen size		***12.1"***	***10.4"***	***7.5"***	***5.7"***	***5.7"***	***3.8"***
Function	32,767 alarms*1		O	O	O	–	–	–
	Logicprogram	External I/O program	O	O	O	O	O	O
		Internal operation	O	O	O	O	O	O
	RPA (Remote PC Access)		O	*2	*2	–	–	–
	Web server		O	O	O	O	–	–
	Multi Protocol Support		4	4	4	2	1 *3	0 *4
PLC Program	Ladder Monitor		O	O	O	–	–	–
	Device Monitor		O	O	O	O	–	–
	Pass-through		O	O	O	O	–	–
GP Program	Logic Monitor		O	O	O	O	O	O
	Address Monitor		O	O	O	O	O	O
	Online Edit		O	O	O	O	O	O

*1 Function expansion memory is required *2 TFT type only *3 LT330x 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 VGA	10.4-inch VGA	10.4-inch SVGA	12-inch SVGA
	SIO 2 Ch, Ethernet, Expansion Unit, USB (Host), CF Card, AUX Sound Out, CANopen	SIO 2 Ch, Ethernet, Expansion Unit, USB (Host), CF Card, AUX Sound Out, VM Unit, CANopen	SIO 2 Ch, Ethernet, Expansion Unit, USB (Host), CF Card, AUX Sound Out, VM Unit, CANopen	SIO 2ch, Ethernet, Expansion Unit, USB (Host), CF Card, AUX Sound Out, VM Unit, CANopen
	TFT 65,536 colors, STN 4,096 colors DC AGP3400-T1-D24-CA1M AGP3400-S1-D24-CA1M	TFT 65,536 colors, STN 4,096 colors DC AC AGP3500-T1-AF-CA1M AGP3500-T1-D24-CA1M AGP3500-S1-AF-CA1M AGP3500-S1-D24-CA1M	TFT 65,536 colors AC AGP3510-T1-AF-CA1M	TFT 65,536 colors DC AC AGP3600-T1-AF-CA1M AGP3600-T1-D24-CA1M

CF Card Interface

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

Expansion Unit Interface

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

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.

Ordering Information

AGP3 * ** - *1 - * - CA1M**
A B C D

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

L	*Monochrome LCD*
S	*STN Color LCD*
T	*TFT Color LCD*

D: Power Supply

AF	*AC Power Supply*
D24	*DC Power Supply*

Ordering Information

LT3 * ** - *1 - * - **
A B C D E

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	*Amber Monochrome LCD*
L	*Monochrome LCD*
S	*STN Color LCD*

D: Power Supply

AF	*AC Power Supply*
D24	*DC Power Supply*

E: Output

C	*Source Outputs*
K	*Sink Outputs*

LT3000 Series

C Class
3.8"
QVGA

MONO
16 shades

BW
6 Shades

LT-3201A

Sink Output	Source Output	Ethernet	CANopen*
SIO 2 Ch	Expansion Unit	USB (Host)	CF Card

Models:
CANopen (master)
DC LT3201-A1-D24-C*
DC LT3201-A1-D24-K*

** Requires CA8-CANLT-01 CANopen Master communication module sold separately.*

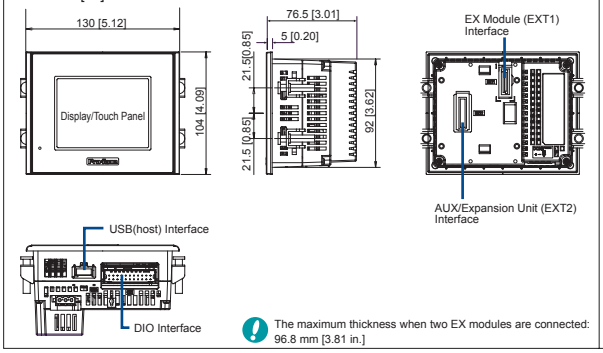
PERFORMANCE SPECIFICATIONS		LT-3201A
Display Type		Monochrome Amber / Red LCD
Display Colors/Shades		Black and White (8 shades)
Backlight		Amber / Red LED (Contact Pro-face for replacement)
Display Resolution		W320 × H240 pixels (QVGA)
Effective Display Area		78.8 [3.10] × 59.6mm [2.35in.]
Brightness Control		8 levels of adjustment available via touch panel
Contrast Adjustment		8 levels of adjustment available via touch panel
Language Fonts		Japanese: 6,962 (JIS Standards 1 & 2 including 607 non-kanji characters) ANK: 158 *1
Character Sizes		Standard font: 8×8, 8×16, 16×16, 32×32 dot fonts Stroke font: 6 to 127 dot fonts
Font Sizes		Standard font: Width and Height can be expanded up to 8 times.*2
Text	8×8 dots	40 Char. x 30 rows
	8×16 dots	40 Char. x 15 rows
	16×16 dots	20 Char. x 15 rows
	32×32 dots	10 Char. x 7 rows
Touch Panel Type		Resistive Film (Analog)
Touch Panel Resolution		1024 × 1024
Internal Memory		FLASH EPROM 6MB *3
Backup Memory		SRAM 128KB *4
Control Memory	Variable Area	SRAM 64KB *4
	Program Area	FLASH EPROM 132KB *5
	Number of Step	15,000 steps*6
Interface: Ethernet		–
Interface: Serial		–
Interface: USB		USB 1.1 Connector: Type A x 1, Power Supply Voltage: DC5V ± 5%, Output Current: 500mA (max.), Communication Distance: 5m (max.)
Interface: Control (Built-in DIO)	Sink Output (Model: LT3201-A1-D24-K)	Sink / Source Input: 12 points, Sink Output: 6 points Connector: 22 pins
	Source Output (Model: LT3201-A1-D24-C)	Sink / Source Input: 12 points, Sink Output: 6 points Connector: 22 pins
Interface: EX Module (EXT1)		To mount EX Modules *7
Interface: AUX / Expansion Unit (EXT2)		To mount CANopen Master Unit *7

GENERAL SPECIFICATIONS	
International Safety Standards	*8
Conforming Standards	UL508, ANSI / ISA-12.12.01-2000 Rev.B or later, CSA-22.2 No.142-M1987, CSA-C22.2 No.213-M1987, EN55011 Class A, EN61000-6-2
Input Voltage	DC24V
Rated Voltage	DC19.2 to 28.8V
Allowable Voltage	10ms or less
Power Consumption	18W or less
Voltage Endurance	AC 1000V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance	DC 500V 10MΩ or higher (between charging and FG terminals)
Surrounding Air Temperature	0 to 50 °C *9
Ambient Humidity	10 to 90%RH (No condensation, Wet bulb temperature: 39°C or lower)
Storage Temperature	-20 to +60 °C
Storage Humidity	10 to 90%RH (No condensation, Wet bulb temperature: 39°C or lower)
Pollution Degree	Pollution Degree 2
Atmosphere	Free of corrosive gasses
Air Pressure Resistance (Availment Altitude)	800 to 1114hPa (from sea level to 2,000m max)
Vibration Resistance	JIS B 3502, IEC / EN61131-2 JIS B 3502 compliant 5 to 9 Hz single-amplitude 3.5 mm 9 to 150 Hz constant-accelerated velocity 9 8 m/s² X,Y,Z directions for 10 cycles (100 min.)
Noise Immunity (via noise simulator)	Noise Voltage: 1000Vp-p, Pulse Duration: 1μs, Rise Time: 1ns
Electrostatic Discharge Immunity	6kV (complies with IEC / EN61000-4-2 Level 3)
Grounding	Function: Type D (Common to SG-FG)
Ratings	Equivalent to IP65f NEMA#250TYPE4X/13 (Front surface at panel embedding)*10
External Dimensions	W130 [5.12] × H104 [4.09] × D76.5mm [3.01in.] (unit only)
Weight	1.0Kg [2.2lb] or less (unit only)
Cooling Method	Natural air circulation

*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 Confirmed compatibility under conditions. This does not guarantee compatibility for all environments.

[External Dimensions / Interfaces]

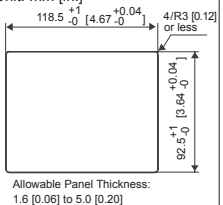
Unit : mm [in.]



The maximum thickness when two EX modules are connected: 96.8 mm [3.81 in.]

[Panel Cut-out]

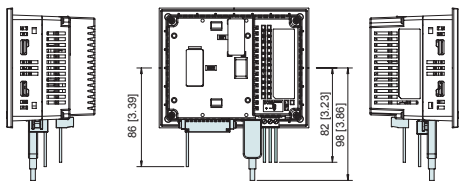
Unit: mm [in.]



Allowable Panel Thickness:
1.6 [0.06] to 5.0 [0.20]

[Cable Attached Dimensions]

Unit: mm [in.]



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

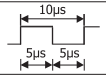
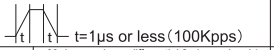
Input Specifications

Rated Voltage		DC24V
Maximum Allowable Voltage		DC28.8V
Input Method		Sink / Source Input
Rated Current		6.5mA (DC24V) (IN0, IN2, IN4, IN6) 5mA (DC24V) (Other inputs)
Input Resistance		Approx.3.7kΩ(IN0, IN2, IN4, IN6) Approx.4.7kΩ(Other inputs)
Input Points*11		12
Common Lines		1
Common Design		12 points / 1 common line
Operation Range	ON Voltage	DC19V or more
	OFF Voltage	DC5V or less
Input Delay Time	OFF to ON	0.5 to 20ms *12
	ON to OFF	0.5 to 20ms *12
Input Signal Display		No LED indicators
Isolation Method		Photocoupler Isolation
External Connection		22-pin connector (used with Output section)
External Power Supply		For Signal: DC24V

Output Specifications

		OUT0 to OUT3	OUT4 to OUT15
Rated Voltage		DC24V	
Allowable Voltage		DC20.4 to 28.8V	
Output Method	Sink Output	LT3201-A1-D24-K	
	Source Output	LT3201-A1-D24-C	
Maximum Load Voltage		200mA / 1 point, 1.2A / 1 common	
Minimum Load Current		1mA	1mA (Pulse / PWM Output Unavailable)
Output Voltage Drop		DC0 5V or less	
Output Delay Time	OFF to ON	5μs or less (with output DC24V, 200mA)	0.5ms or less (with output DC24V, 200mA)
	ON to OFF	5μs or less (with output DC24V, 200mA)	0.5ms or less (with output DC24V, 200mA)
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 Input section)	
Output Protection Type		Output is unprotected	
Internal Fuse		2.5A, 125V Chip fuse (not replaceable)	
Surge Control Circuit		Zener diode	
Output Points *11		6	
Output Signal Display		No LED indicators	
Isolation Method		Photocoupler Isolation	
External Power Supply		For Signal· DC24V	

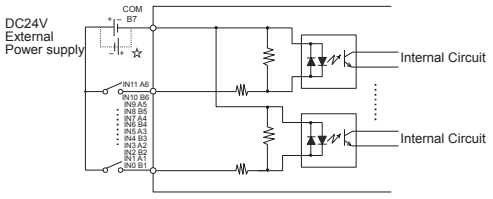
High-speed Counter / Pulse Catch Input Specifications

	High-speed Counter		Pulse Catch
Input *11	DC24V Open Collector		DC24V Open Collector
	Single phase (4 points)	Double phase (1 or 2 points)	
Input Points	CT0(IN0), CT1(IN2), CT2(IN4), CT3(IN6), User Defined	Use CT0 (IN0), CT1(IN2) in pairs. CT0: Phase A, CT1: Phase B CT2(IN4),CT3(IN6) in pairs. CT2: Phase A, CT3: Phase B User Defined	IN0, IN2, IN4, IN6 User Defined
Minimum Pulse Width (Pulse Input)			
Count Speed (Rise, Fall Time)			—
Phase	1 Phase	90 degree phase differential 2-phase signal / 1-phase +directional signal	—
High Speed Count Frequency	100Kpps	50Kpps	—
Count Edge Designation	Available	Not Available	—
Count Register	32-bit UP / DOWN Counter		—
Counter Mode Change	Set through software		—
Upper / Lower Limit Settings	Not Available		—
Preload/Prestrobe	Available		—
Marker Input (Clear Counter Value)	None	IN3, IN7	—

Pulse / PWM Output Specifications

	Pulse	PWM
Output Points*11	4 points	
Output Method	PLS0 to PLS3 (OUT0 to OUT3) User Defined	PWM0 to PWM3 (OUT0 to OUT3) User Defined
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	Not Available
ON Duty	50%±10% (at 65kHz) *13	19 to 81% (at 65kHz) *14

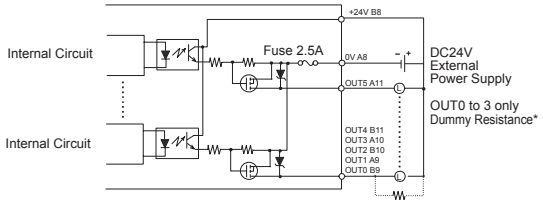
[Input Circuit]



☆ Dotted area indicates the cable diagram with sink output type devices.

[Output Circuit]

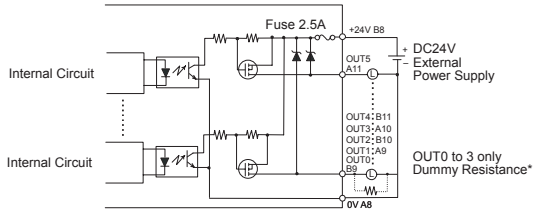
(Sink Type)



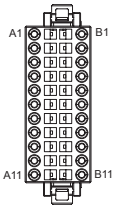
* For faster response with light load use an external dummy resistance.

[Output Circuit]

(Source Type)



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

Pin Connection	Pin No.	Signal Name	Pin No.	Signal Name
 (Cable Side)	A1	IN1	B1	IN0 (CT0)
	A2	IN3	B2	IN2 (CT1)
	A3	IN5	B3	IN4 (CT2)
	A4	IN7	B4	IN6 (CT3)
	A5	IN9	B5	IN8
	A6	IN11	B6	IN10
	A7	NC	B7	COM
	A8	0V	B8	+24V
	A9	OUT1 (PLS1, PWM1)	B9	OUT0 (PLS0, PMW0)
	A10	OUT3 (PLS3, PWM3)	B10	OUT2 (PLS2, PWM2)
	A11	OUT5	B11	OUT4

*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.

LT3000 Series

C Class
5.7"
QVGA

STN
4,096

MONO
16 shades

LT-3300S/L • LT-3300/01L

Sink Output	Source Output	Ethernet	CANopen*
SIO 2 Ch	Expansion Unit	USB (Host)	CF Card

Models:
CANopen (master)

DC LT3300-S1-D24-C*
DC LT3300-S1-D24-K*
DC LT3300-L1-D24-C*
DC LT3300-L1-D24-K*

** Requires CA8-CANLT-01 CANopen Master communication module sold separately.*

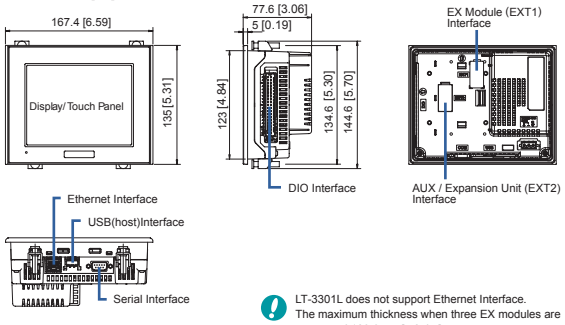
PERFORMANCE SPECIFICATIONS		LT-3300S	LT-3300L	LT-3301L
Display Type		STN Color LCD	Monochrome LCD	
Display Colors/Shades		4,096 colors (3-speed blink)	Black and White (16 shades) (3-speed blink)	
Backlight		White LED (Contact Pro-face for replacement)		
Display Resolution		W320 × H240 pixels (QVGA)		
Effective Display Area		W117.2 [4.61] × H88.4mm [3.48in.]		
Brightness Control		8 levels of adjustment available via touch panel		
Contrast Adjustment		8 levels of adjustment available via touch panel		
Language Fonts		Japanese: 6,962 (JIS Standards 1 & 2 including 607 non-kanji characters) ANK:158 *1		
Character Sizes		Standard font: 8×8, 8×16, 16×16, 32×32 dot fonts Stroke font: 6 to 127 dot fonts		
Font Sizes		Standard font: Increase Width and Height up to 8 times. *2		
Text	8×8 dots	40 char. x 30 rows		
	8×16 dots	40 char. x 15 rows		
	16×16 dots	20 char. x 15 rows		
	32×32 dots	10 char. x 7 rows		
Touch Panel Type		Resistive Film (Analog)		
Touch Panel Resolution		1024 × 1024		
Internal Memory		FLASH EPROM 6MB*3		
Backup Memory		SRAM 128KB*4		
Control Memory	Variable Area	SRAM 64KB*4		
	Program Area	FLASH EPROM 132KB*5		
	Number of Step	15,000 steps *6		
Interface	Ethernet	IEEE802.3u 10BASE-T/100BASE-TX Connector: Modular Jack (RJ-45)×1		—
	Serial	RS-232C / 422 / 485, Asynchronous Transmission, Data Length: 8 bit / 7 bit Stop Bit: 2 bit / 1 bit, Parity: Even / Odd / None, Data Transmission Speed: 2400bps-115.2kbps Connector: D-Sub 9pin plug		
	USB	USB 1.1 Connector: Type A x 1, Power Supply Voltage: DC5V ±5%, Output Current: 500mA (max.), Communication Distance: 5m (max.)		
	Control (DIO) DIO (Sink Type) (Model:LT330■-■1-D24-K)	Sink / Source Input: 16 points, Sink Output: 16 points Connector: 38 pins		
	Control (DIO) DIO (Source Type) (Model:LT330■-■1-D24-C)	Sink / Source Input: 16 points, Source Output: 16 points Connector: 38 pins		
	EX Module (EXT1)	To mount EX Module *7		
	AUX / Expansion Unit (EXT2)	To mount CANopen Master Unit *7		

GENERAL SPECIFICATIONS	
International Safety Standards	UL LISTED, c UL LISTED, SP *8, CE
Conforming Standards	UL508, ANSI / ISA-12. 12.01-2007 Rev.1 or later, No.142-M1987, CSA-22.2, No.213-M1987, EN55011 Class A, EN61000-6-2
Input Voltage	DC24V
Rated Voltage	DC19.2 to 28.8V
Allowable Voltage	3ms or less
Power Consumption	27W or less
Voltage Endurance	AC 1000V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance	DC 500V 10MΩ or higher (between charging and FG terminals)
Surrounding Air Temperature	0 to 50 °C *9
Humidity	10 to 90%RH (No condensation, Wet bulb temperature:39°C or lower)
Storage Temperature	-20 to +60 °C
Storage Humidity	10 to 90%RH (No condensation, Wet bulb temperature:39°C or lower)
Pollution Degree	Pollution Degree 2
Atmosphere	Free of corrosive gasses
Air Pressure Resistance (Availment Altitude)	800 to 1114hPa (from sea level to 2,000m max)
Vibration Resistance	JIS B 3502、IEC61131-2 compliant 5 to 9 Hz single-amplitude 3.5 mm 9 to 150 Hz constant-accelerated velocity 9.8 m/s² X,Y,Z directions for 10 cycles (100 min.)
Noise Immunity (via nose simulator)	Noise Voltage: 1000Vp-p, Pulse Duration: 1μs, Rise Time: 1ns
Electrostatic Discharge Immunity	6kV (complies with IEC/EN61000-4-2 Level 3)
Grounding	Function: Type D (Common to SG-FG)
Ratings	Equivalent to IP65f NEMA#250TYPE4X/13 (Front surface at panel embedding) *10
External Dimensions	W167.5 [6.59] × H135 [5.31] × D78.0mm [3.07in.] (unit only)
Weight	1.0Kg [2.2lb] or less (unit only)
Cooling Method	Natural air circulation

*1 Korean, Simplified Chinese, Traditional Chinese, 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 a 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 les, or 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. For STN color models, extended use in environments where the surrounding air temperature is 40°C or higher may degrade the display quality and could result in decreased contrast.
*10 Confirmed compatibility under conditions. This does not guarantee compatibility for all environments.

[External Dimensions/Interfaces]

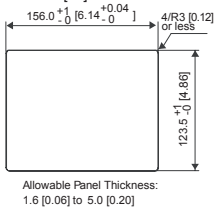
Unit: mm [in.]



LT-3301L does not support Ethernet Interface.
The maximum thickness when three EX modules are connected:123.0mm [4.84in.].

[Panel Cut-Out]

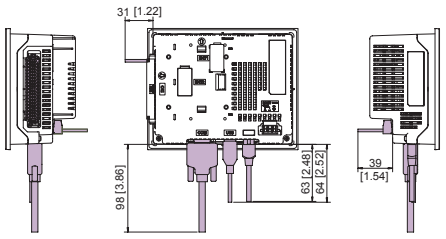
Unit: mm [in.]



Allowable Panel Thickness:
1.6 [0.06] to 5.0 [0.20]

[Cable Attached Dimensions]

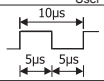
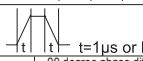
Unit: mm [in.]



LT-3301L does not support Ethernet Interface.
Depending on type of connection cable used the dimensions shown above will change.
The dimensions given here are representative values and are intended for reference only.

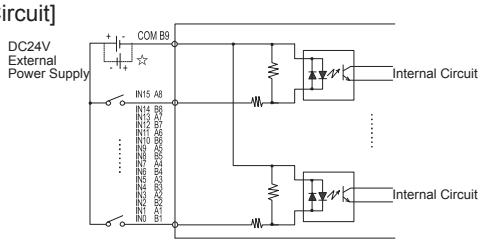
Input Specifications		
Rated Voltage		DC24V
Maximum Allowable Voltage		DC28.8V
Input Method		Sink / Source Input
Rated Current		6.5mA (DC24V) (IN0, IN2, IN4, IN6) 4.1mA (DC24V) (Other inputs)
Input Resistance		Approx.3.7kΩ(IN0, IN2, IN4, IN6) Approx.5.9kΩ(Other inputs)
Input Points*11		16
Common Lines		1
Common Design		16 points / 1 common line
Operation Range	ON Voltage	DC19V or more
	OFF Voltage	DC5V or less
Input Delay Time	OFF to ON	0.5 to 20ms *12
	ON to OFF	0.5 to 20ms *12
Input Signal Display		No LED indicators
Isolation Method		Photocoupler Isolation
External Connection		38-pin connector (used with Output section)
External Power Supply		For Signal: DC24V

Output Specifications			
		OUT0 to OUT3	OUT4 to OUT15
Rated Voltage		DC24V	
Allowable Voltage		DC20.4 to 28.8V	
Output Method	Sink Output	LT3300-S1-D24-K, LT3300-L1-D24-K, LT3301-L1-D24-K	
	Source Output	LT3300-S1-D24-C, LT3300-L1-D24-C, LT3301-L1-D24-C	
Maximum Load Voltage		200mA / 1 point 1.6A / 1 common	
Minimum Load Current		1mA	1mA (Pulse/PWM Output Unavailable)
Output Voltage Drop		DC0.5V or less	
Output Delay Time	OFF to ON	5μs or less (with output DC24V, 200mA)	0.5ms or less (with output DC24V, 200mA)
	ON to OFF	5μs or less (with output DC24V, 200mA)	0.5ms or less (with output DC24V, 200mA)
Voltage Leakage (When OFF)		0.1mA or less	
Clamp Voltage		39V ± 1V	
Type of Output		Transistor Output	
Common Lines		2	
Common Design		8 points / 1 common line × 2	
External Connection		38-pin connector (used with Input section)	
Output Protection Type		Output is unprotected	
Internal Fuse		3.5A,125V Chip fuse × 2 (not replaceable)	
Surge Control Circuit		Zener diode	
Output Points *11		16	
Output Signal Display		No LED indicators	
Isolation Method		Photocoupler Isolation	
External Power Supply		For Signal: DC24V	

High-speed Counter / Pulse Catch Input Specifications			
	High-speed Counter		Pulse Catch
Input *11	DC24V Open Collector		DC24V Open Collector
	Single phase (4 points)	Double phase (1 or 2 points)	
Input Points	CT0 (IN0), CT1 (IN2), CT2 (IN4), CT3 (IN6), User Defined	Use CT0 (IN0), CT1 (IN2) in pairs. CT0: Phase A, CT1: Phase B CT2 (IN4), CT3 (IN6) in pairs. CT2: Phase A, CT3: Phase B User Defined	IN0, IN2, IN4, IN6 User Defined
Minimum Pulse Width (Pulse Input)			Input signal ON width  5μs or more
Count Speed (Rise, Fall Time)			—
Phase	1 Phase	90 degree phase differential 2-phase signal / 1-phase +directional signal	—
High Speed Count Frequency	100Kpps	50Kpps	—
Count Edge Designation	Available	Not Available	—
Count Register	32-bit UP / DOWN Counter		—
Counter Mode Change	Set through software		—
Upper/Lower Limit Settings	Not Available		—
Preload/Prestrobe	Available		—
Marker Input (Clear Counter Value)	None	IN3,IN7	—

Pulse/PWM Output Specifications		
	Pulse	PWM
Output Points*11	4 points	
Output Method	PLS0 to PLS3 (OUT0 to OUT3) User Defined	PWM0 to PWM3 (OUT0 to OUT3) User Defined
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	Not Available
ON Duty	50%±10% (at 65kHz)*13	19 to 81% (at 65kHz)*14

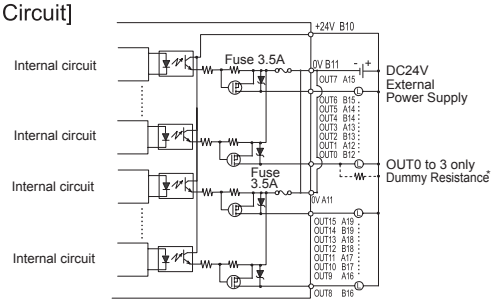
[Input Circuit]



☆Dotted area indicates the cable diagram with sink output type devices.

[Output Circuit]

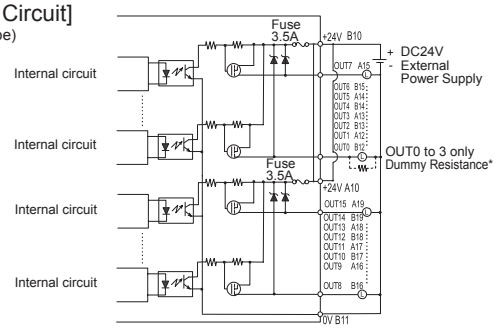
(Sink Type)



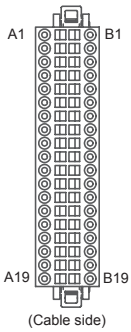
*For faster response with light load use an external dummy resistance.

[Output Circuit]

(Source Type)



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

Pin Connection	Pin No.	Signal Name	Pin No.	Signal Name
 (Cable side)	A1	IN1	B1	IN0 (CT0)
	A2	IN3	B2	IN2 (CT1)
	A3	IN5	B3	IN4 (CT2)
	A4	IN7	B4	IN6 (CT3)
	A5	IN9	B5	IN8
	A6	IN11	B6	IN10
	A7	IN13	B7	IN12
	A8	IN15	B8	IN14
	A9	NC	B9	COM
	A10	Sink output type: NC Source output type: +24V	B10	Sink output type: +24V Source output type: +24V
	A11	Sink output type: 0V Source output type: NC	B11	Sink output type: 0V Source output type: 0V
	A12	OUT1 (PLS1, PWM1)	B12	OUT0 (PLS0, PWM0)
	A13	OUT3 (PLS3, PWM3)	B13	OUT2 (PLS2, PWM2)
	A14	OUT5	B14	OUT4
	A15	OUT7	B15	OUT6
	A16	OUT9	B16	OUT8
	A17	OUT11	B17	OUT10
	A18	OUT13	B18	OUT12
	A19	OUT15	B19	OUT14

*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.

AGP3000 Series

C Class
5.7"
QVGA

TFT 65, 536
STN 4,096
MONO 16 shades

AGP-3300T/S/L

SIO2ch	Ethernet	Communication Unit	Video Unit
USB(Host)	CF Card	AUX Sound out	Video in
Sound in	DIO(Sink/Source)	FLEX NETWORK	CANopen

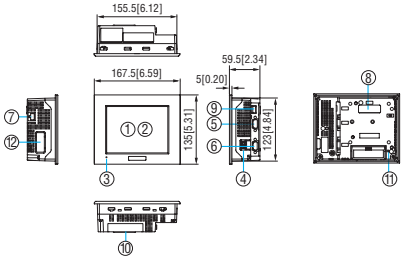
Models:
CANopen (master)
DC AGP3300-T1-D24-CA1M
DC AGP3300-S1-D24-CA1M
DC AGP3300-L1-D24-CA1M

FUNCTIONAL SPECIFICATION		AGP-3300T	AGP-3300S	AGP-3300L
Display Type		TFT Color LCD	STN Color LCD	Monochrome LCD
Display Colors		65,536 Colors (no blink) / 16,384 Colors (Enables blink feature)*1	4,096 Colors (Enables blink feature)	Black and White (16 Shades) (Enables blink feature)
Dispay Resolution		320 x 240 pixels (QVGA)		
Backlight		CCFL (Contact Pro-face for replacement)		
Effective Display Area		115.2mm[4.54in.] x 86.4mm[3.40in.]		
Brightness Control		8 levels of adjustment available via touch panel		
Contrast Adjustment		—	8 levels of adjustment available via touch panel	
Language Fonts		Japanese: 6962 (JIS Standards 1&2) (including 607 non-kanji characters), ANK: 158 *2		
Character Sizes		Standard font: 8 x 8, 8 x 16, 16 x 16 and 32 x 32 dot fonts, Stroke font: 6 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		
Text	8 x 8 dots	40 Char. x 30 rows		
	8 x 16 dots	40 Char. x 15 rows		
	16 x 16 dots	20 Char. x 15 rows		
	32 x 32 dots	10 Char. x 7 rows		
Application Memory		6MB FLASH EPROM *4		
Data Backup Memory		320KB SRAM (uses lithium battery) *5		
Control Memory	Variable Area	64 KB SRAM (uses lithium battery) *5		
	Program Area	132 KB FLASH EPROM		
	Number of Step	15,000steps*9		
Touch Panel Type		Resistive Film (analog)		
Touch Panel Resolution		1024 x 1024		
Interface	Serial (COM1)	Asynchronous Transmission: RS-232C/422/485 *6 Data Length: 7/8 bits, Stop Bit: 1/2 bits, Parity: none, Odd or Even, Data transmission speed: 2400bps to 115.2kbps, Connector: D-Sub 9pin plug		
	Serial (COM2)	Asynchronous Transmission: RS-422/485 Data Length: 7/8 bits, Stop Bit: 1/2 bits, Parity: none, Odd or Even, Data transmission speed: 2400bps to 115.2kbps 187.5kbps(MPI), Connector: D-Sub 9pin socket		
	Ethernet	IEEE802.3u, 10BASE-T/100BASE-TX, modular jack connector (RJ-45)		
	Expansion Unit	For Communication Unit x 1		
	USB	USB1.1 (USB Type-A conn.) x 1 Power voltage: DC5V±5%, Output current: 500mA (max.), Max. Communication distance: 5m		
	CF Card	CF Card Slot (Type-II) x 1		
	Control	CANopen (master) type Model: AGP3300-T1-■■■-CA1M	Bit variable input: 512 points, Bit variable output: 512 points, Integer variable input: 128 points, Integer variable output: 128 points, Connector:D-Sub 9pin plug	

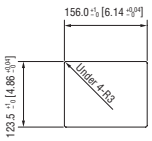
GENERAL SPECIFICATION	DC
International Safety Standards	UL, cUL, CSA, CE
Conforming Standards	UL508, UL1604,CSA-C22.2 No.14-M95, CSA-C22.2 No.213-M1987, EN55011 Class A, EN61000-6-2
Ship Standard Acquisition	—
Input Voltage	DC24V
Rated Voltage	DC19.2V to DC28.8V
Rated Frequency	—
Allowable Voltage	5ms or less
Power Consumption	26W or less
Voltage Endurance	AC1000V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance	10MΩ or higher at DC500V (min.)(between charging and FG terminals)
Ambient Temperature	0 °C to +50 °C *7
Storage Temperature	–20 °C to +60 °C
Ambient Humidity	10%RH to 90%RH (Non-condensing, wet bulb temperature: 39 °C max.)
Storage Humidity	10%RH to 90%RH (Non-condensing, wet bulb temperature: 39 °C max.)
Pollution Degree	Pollution Degree 2
Atmosphere	Free of corrosive gasses
Air Pressure Vibration Resistance (Availment altitude)	800hPa to 1114hPa (2000 meters or lower)
Vibration Resistance	IEC61131-2 compliant 5Hz to 9Hz Single-amplitude 3.5mm 9Hz to 150Hz Fixed acceleration 9.8m/s² X,Y,Z directions for 10 cycle (100min.)
Noise Immunity (via noise simulator)	Noise Voltage: 1000Vp-p Pulse Duration: 1µs Rise Time: 1ns
Electrostatic Discharge Immunity	6kV (complies with EN 61000-4-2 Level 3)
Grounding	Protection: Type D (Common to SG-FG)
Ratings (For front panel of installed unit)	Equivalent to IP65f NEMA #250 TYPE 4X/13 *8
External Dimensions	W167.5mm[6.59in.] x H135mm[5.31in.] x D59.5mm[2.34in.]
Weight	1.2kg (2.6lb) max.(Unit Only)
Cooling Method	Natural air circulation

*1 Changing the Colors setting to "65,536 colors" will disable the blinking feature on all screens in your project. If you wish to use the blinking feature, do not select "65,536 colors".
*2 Korean, Simplified and traditional Chinese, Cyrillic, and Thai fonts are downloadable. For details, refer to the GP-Pro EX Operation Environment.
*3 Font Sizes can be set up by software.
*4 User area
*5 A Lithium battery's lifetime is:
10 years when the battery's ambient temperature is 40 °C or less.
4.1 years when the battery's ambient temperature is 50 °C or less.
1.5 years when the battery's ambient temperature is 60 °C or less.
When used for back up: Approximately 100 days, with a fully charged battery.
Approximately 6 days, with a half-charged battery.
*6 RS-232C and RS-422/485 are software switchable.
*7 Operating temperature refers to temperature inside mounting enclosure and on the side of the display. When using STN Color LCD models in an environment where the temperature becomes or exceeds 40 °C for an extended period of time, the screen contrast level may decrease from its original level of brightness.
*8 The degree of protection provided by these products is equivalent to IP65f, however their performance cannot be guaranteed for every environment. Be sure to confirm your work environment requirements prior to installation.
*9 Up to 60,000 steps can be converted in software. However, this reduces internal memory capacity (for screen data) by 1 MB.

External Dimensions



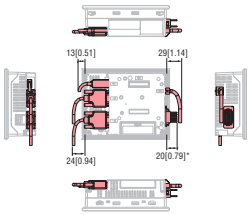
Panel Cut-out



Panel Thickness area 1.6 [0.06]~5.0 [0.20]

Accommodates the panel cutout dimensions of current models (156x123.5) GP-377R/ GP-230*

Cable Attached Dimensions



*127mm-space is necessary for the CANopen board type.

Unit:mm [in.]

Parts Names
①Display ②Touch Panel ③Status LED ④Power Input Terminal Block (AC model) Power Plug Connector (DC model) ⑤Serial Interface(COM1) ⑥Serial Interface(COM2) ⑦Ethernet Interface (LAN) ⑧Expansion Unit Interface ⑨USB Interface (Host) ⑩CF Card Cover (CF Card Interface, Dip Switches) ⑪CF Card Access LED ⑫CANopen Interface

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.

AGP3000 Series

C Class
7.5"
VGA

TFT
65, 536

STN
4,096

AGP-3400T/S

SIO2ch	Ethernet	Communication Unit	Video Unit
USB(Host)	CF Card	AUX Sound out	Video in
Sound in	DIO(Sink/Source)	FLEX NETWORK	CANopen

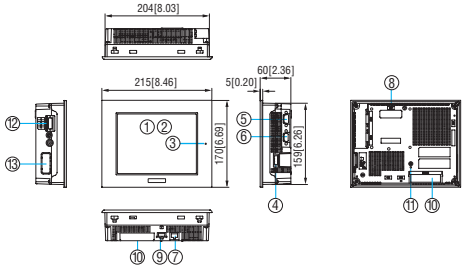
Models:
CANopen (master)
DC AGP3400-T1-D24-CA1M
DC AGP3400-S1-D24-CA1M

FUNCTIONAL SPECIFICATION		AGP-3400T	AGP-3400S
Display Type		TFT Color LCD	STN Color LCD
Display Colors		65,536 Colors (no blink) / 16,384 Colors (Enables blink feature) *1	4,096 Colors (Enables blink feature)
Dispay Resolution		640 x 480 pixels (VGA)	
Backlight		CCFL (Contact Pro-face for replacement)	
Effective Display Area		153.7mm[6.05in.] x 115.8mm[4.56in.]	
Brightness Control		8 levels of adjustment available via touch panel	
Contrast Adjustment		—	8 levels of adjustment available via touch panel
Language Fonts		Japanese: 6962 (JIS Standards 1&2) (including 607 non-kanji characters), ANK: 158 *2	
Character Sizes		Standard font: 8 x 8, 8 x 16, 16 x 16 and 32 x 32 dot fonts, Stroke font: 6 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	
Text	8 x 8 dots	80 Char. x 60 rows	
	8 x 16 dots	80 Char. x 30 rows	
	16 x 16 dots	40 Char. x 30 rows	
	32 x 32 dots	20 Char. x 15 rows	
Application Memory		8MB FLASH EPROM *4	
Data Backup Memory		320KB SRAM (uses lithium battery) *5	
Control Memory	Variable Area	64 KB SRAM (uses lithium battery) *5	
	Program Area	132 KB FLASH EPROM	
	Number of Step	15,000steps *10	
Touch Panel Type		Resistive Film (analog)	
Touch Panel Resolution		1024 x 1024	
Interface	Serial (COM1)	Asynchronous Transmission: RS-232C/422/485 *6 Data Length: 7/8 bits, Stop Bit: 1/2 bits, Parity: none, Odd or Even, Data transmission speed: 2400bps to 115.2kbps, Connector: D-Sub 9pin plug	
	Serial (COM2)	Asynchronous Transmission: RS-422/485 Data Length: 7/8 bits, Stop Bit: 1/2 bits, Parity: none, Odd or Even, Data transmission speed: 2400bps to 115.2kbps 187.5kbps(MPI), Connector: D-Sub 9pin socket	
	Ethernet	IEEE802.3u, 10BASE-T/100BASE-TX,modular jack connector (RJ-45)	
	Expansion Unit	For Communication Unit x 1	
	USB	USB1.1 (USB Type-A conn.) x 1 Power voltage: DC5V±5%, Output current: 500mA (max.), Max. Communication distance: 5m	
	CF Card	CF Card Slot (Type-II) x 1	
	Sound Output	Speaker Output 70mW (Rated Load: 8Ω, Frequency: 1kHz) Connector: Two piece type terminal block (also used for AUX) x 1	
	AUX Input/Output	[AUX Output] Alarm Output, RUN Output, Buzzer Output, Rated Voltage: DC24V, Max. Rated Current: 50mA, [AUX Input] Remote Reset Input, Input Voltage: DC24V, Input Current: 6mA, Operating Voltage: (When ON) Min:DC9V, (When OFF) Max:DC2.5V Connector: Two piece type terminal block x 1	
	Control	CANopen (master) type Model: AGP3400-T1-■■■-CA1M	Bit variable input: 512 points, Bit variable output: 512 points, Integer variable input: 128 points, Integer variable output: 128 points, Connector:D-Sub 9pin plug
	Function Expansion Memory	Attached to the internal PCB (memory can be installed by users) *9	

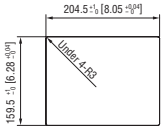
GENERAL SPECIFICATION	DC
International Safety Standards	cULus, cULus, CE
Conforming Standards	UL508, UL1604,CSA-C22.2 No.14-M95, CSA-C22.2 No.213-M1987, EN55011 Class A, EN61000-6-2
Ship Standard Acquisition	—
Input Voltage	DC24V
Rated Voltage	DC19.2V to DC28.8V
Rated Frequency	—
Allowable Voltage	10ms or less
Power Consumption	28W or less
Voltage Endurance	AC1000V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance	10MΩ or higher at DC500V (min.)(between charging and FG terminals)
Ambient Temperature	0 °C to +50 °C *7
Storage Temperature	−20 °C to +60 °C
Ambient Humidity	10%RH to 90%RH (Non-condensing, wet bulb temperature: 39 °C max.)
Storage Humidity	10%RH to 90%RH (Non-condensing, wet bulb temperature: 39 °C or max.)
Pollution Degree	Pollution Degree 2
Atmosphere	Free of corrosive gasses
Air Pressure Vibration Resistance (Availment altitude)	800hPa to 1114hPa (2000 meters or lower)
Vibration Resistance	IEC61131-2 compliant 5Hz to 9Hz Single-amplitude 3.5mm 9Hz to 150Hz Fixed acceleration 9.8m/s² X,Y,Z directions for 10 cycle (100min.)
Noise Immunity (via noise simulator)	Noise Voltage: 1000Vp-p Pulse Duration: 1μs Rise Time: 1ns
Electrostatic Discharge Immunity	6kV (complies with EN 61000-4-2 Level 3)
Grounding	Protection: Type D (Common to SG-FG)
Ratings (For front panel of installed unit)	Equivalent to IP65f NEMA #250 TYPE 4X/13 *8
External Dimensions	W215mm[8.46in.] x H170mm[6.69in.] x D60mm[2.36in.]
Weight	2.0kg (4.4lb) max.(Unit Only)
Cooling Method	Natural air circulation

*1 Changing the Colors setting to "65,536 colors" will disable the blinking feature on all screens in your project. If you wish to use the blinking feature, do not select "65,536 colors".
*2 Korean, Simplified and traditional Chinese, Cyrillic, and Thai fonts are downloadable. For details, refer to the GP-Pro EX Operation Environment.
*3 Font Sizes can be set up by software.
*4 User area.
*5 A Lithium battery's lifetime is:
10 years when the battery's ambient temperature is 40°C or less.
4.1 years when the battery's ambient temperature is 50°C or less.
1.5 years when the battery's ambient temperature is 60°C or less.
When used for back up: Approximately 100 days, with a fully charged battery.Approximately 6 days, with a half-charged battery.
*6 RS-232C and RS-422/485 are software switchable.
*7 Operating temperature refers to temperature inside mounting enclosure and on the side of the display. When using STN Color LCD models in an environment where the temperature becomes or exceeds 40 °C for an extended period of time, the screen contrast level may decrease from its original level of brightness.
*8 The degree of protection provided by these products is equivalent to IP65f, however their performance cannot be guaranteed for every environment. Be sure to confirm your work environment requirements prior to installation.
*9 Refer to the "AGP3000 Series Hardware Manual" for installation instructions.
*10 Up to 60,000 steps can be converted in software. However, this reduces internal memory capacity (for screen data) by 1 MB.

External Dimensions



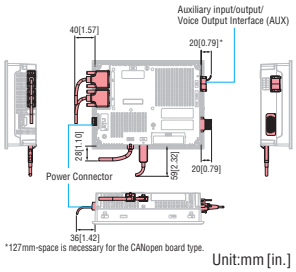
Panel Cut-out



Panel Thinkness area 1.6 [0.06]~10.0 [0.39]

Accommodates the panel cutout dimensions of current models (204.5x159.5) GP-240*

Cable Attached Dimensions



Unit:mm [in.]

Parts Names

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

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.

AGP3000 Series

C Class
10.4"
VGA

TFT
65, 536

AGP-3500/3510T

SIO2ch	Ethernet	Communication Unit	Video Unit
USB(Host)	CF Card	AUX Sound out	Video in
Sound in	DIO(Sink/Source)	FLEX NETWORK	CANopen

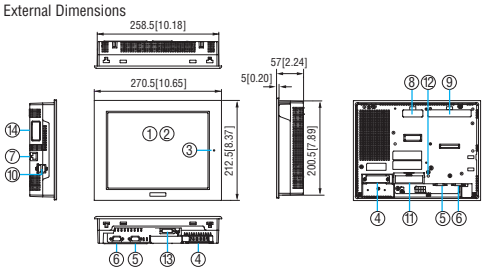
Models:
CANopen (master)
AC AGP3500-T1-AF-CA1M
DC AGP3500-T1-D24-CA1M
AC AGP3510-T1-AF-CA1M

FUNCTIONAL SPECIFICATION		AGP-3500T	AGP-3510T
Display Type		TFT Color LCD	
Display Colors		65,536 Colors (no blink) / 16,384 Colors (Enables blink feature) *1	
Display Resolution		640 x 480 pixels (VGA)	800 x 600 (SVGA)
Backlight		CCFL (Replaceable)	
Effective Display Area		211.2mm[8.31in.] x 158.4mm[6.24in.]	
Brightness Control		8 levels of adjustment available via touch panel	
Language Fonts		Japanese: 6962 (JIS Standards 1&2) (including 607 non-kanji characters), ANK: 158 *2	
Character Sizes		Standard font: 8 x 8, 8 x 16, 16 x 16 and 32 x 32 dot fonts, Stroke font: 6 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	
Text	8 x 8 dots	80 Char. x 60 rows	
	8 x 16 dots	80 Char. x 30 rows	
	16 x 16 dots	40 Char. x 30 rows	
	32 x 32 dots	20 Char. x 15 rows	
Application Memory		8MB FLASH EPROM *4	
Data Backup Memory		320KB SRAM (uses lithium battery) *5	
Control Memory	Variable Area	64KB SRAM (uses lithium battery) *5	
	Program Area	132KB FLASH EPROM	
	Number of Step	15,000steps*6	
Touch Panel Type		Resistive Film (analog)	
Touch Panel Resolution		1024 x 1024	
Interface	Serial (COM1)	Asynchronous Transmission: RS-232C/422/485 *7 Data Length: 7/8 bits, Stop Bit: 1/2 bits, Parity: none, Odd or Even, Data transmission speed: 2400bps to 115.2kbps, Connector: D-Sub 9pin plug	
	Serial (COM2)	Asynchronous Transmission: RS-422/485 Data Length: 7/8 bits, Stop Bit: 1/2 bits, Parity: none, Odd or Even, Data transmission speed: 2400bps to 115.2kbps 187.5kbps(MPI), Connector: D-Sub 9pin socket	
	Ethernet	IEEE802.3u, 10BASE-T/100BASE-TX,modular jack connector (RJ-45) x 1	
	Expansion Unit(1)*8	For Communication Unit x 1	
	Expansion Unit(2)*8	For Video Unit x 1	
	USB	USB1.1 (USB Type-A conn.) x 2 Power voltage: DC5V±5%, Output current: 500mA (max.), Max. Communication distance: 5m	
	CF Card	CF Card Slot (Type-II) x 1	
	Sound Output	Speaker Output 70mW (Rated Load: 8Ω, Frequency: 1kHz) Connector: Two piece type terminal block (also used for AUX) x 1	
	AUX Input/Output	[AUX Output] Alarm Output, RUN Output, Buzzer Output, Rated Voltage: DC24V, Max. Rated Current: 50mA, [AUX Input] Remote Reset Input, Input Voltage: DC24V, Input Current: 6mA, Operating Voltage: (When ON) Min:DC9V, (When OFF) Max:DC2.5V Connector: Two piece type terminal block x 1	
	Control	CANopen (master) type Model: AGP3500-T1-■■■-CA1M	Bit variable input: 512 points, Bit variable output: 512 points, Integer variable input: 128 points, Integer variable output: 128 points, Connector:D-Sub 9pin plug
	Function Expansion Memory	Attached to the internal PCB (memory can be installed by users)*11	

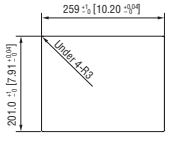
GENERAL SPECIFICATION	AC	DC
International Safety Standards	cULus, CE	cULus, cULus, CSA, CE
Conforming Standards	UL60950-1, UL1604, CAN/CSA-C22.2 No.60950-1-03 (c-UL approval), CSA-C22.2 No.213-M1987 (c-UL approval), EN55011 Class A, EN61000-6-2, EN60950-1	UL508, UL1604,CSA-C22.2 No.14-M95, CSA-C22.2 No.213-M1987, EN55011 Class A, EN61000-6-2
Ship Standard Acquisition	—	
Input Voltage	AC100V to AC240V	DC24V
Rated Voltage	AC85V to AC265V	DC19.2V to DC28.8V
Rated Frequency	50/60Hz	—
Allowable Voltage	Shorter than 1cycle (Voltage drop interval must be 1s or more)	10ms or less
Power Consumption	AC100V 0.9A or less AC240V 0.45A or less	50Wor less
Voltage Endurance	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC1000V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance	10MΩ or higher at DC500V (min.)(between charging and FG terminals)	
Ambient Temperature	0ºC to +50ºC *9	
Storage Temperature	−20ºC to +60ºC	
Ambient Humidity	10%RH to 90%RH (Non-condensing, wet bulb temperature: 39ºC max.)	
Storage Humidity	10%RH to 90%RH (Non-condensing, wet bulb temperature: 39ºC max.)	
Pollution Degree	Pollution Degree 2	
Atmosphere	Free of corrosive gasses	
Air Pressure Vibration Resistance (Availment altitude)	800hPa to 1114hPa (2000 meters or lower)	
Vibration Resistance	IEC61131-2 compliant 5Hz to 9Hz Single-amplitude 3.5mm 9Hz to 150Hz Fixed acceleration 9.8m/s² X,Y,Z directions for 10 cycle (100min.)	
Noise Immunity (via noise simulator)	Noise Voltage: 1500Vp-p Pulse Duration: 1μs Rise Time: 1ns	Noise Voltage: 1000Vp-p Pulse Duration: 1μs Rise Time: 1ns
Electrostatic Discharge Immunity	6kV (complies with EN 61000-4-2 Level 3)	
Grounding	Protection: Type D (Common to SG-FG)	Function: Type D (Common to SG-FG)
Ratings (For front panel of installed unit)	Equivalent to IP65f NEMA #250 TYPE 4X/13 *10	
External Dimensions	W270.5mm[10.65in.] x H212.5mm[8.37in.] x D57mm[2.24in.]	
Weight	2.7kg (5.9lb) max.(Unit Only)	
Cooling Method	Natural air circulation	

*1 Changing the Colors setting to "65,536 colors" will disable the blinking feature on all screens in your project. If you wish to use the blinking feature, do not select "65,536 colors".
*2 Korean, Simplified and traditional Chinese, Cyrillic, and Thai fonts are downloadable. For details, refer to the GP-Pro EX Operation Environment.
*3 Font Sizes can be set up by software.
*4 User area.
*5 A Lithium battery's lifetime is:
10 years when the battery's ambient temperature is 40ºC or less.
4.1 years when the battery's ambient temperature is 50ºC or less.
1.5 years when the battery's ambient temperature is 60ºC or less.
When used for back up: Approximately 100 days, with a fully charged battery.
Approximately 6 days, with a half-charged battery.
*6 Up to 60,000 steps can be converted in software. However, this reduces internal memory capacity (for screen data) by 1 MB.
*7 RS-232C and RS-422/485 are software switchable.
*8 The Expansion Unit (1) and (2) cannot be used simultaneously.
*9 Operating temperature refers to temperature inside mounting enclosure and on the side of the display.
*10 The degree of protection provided by these products is equivalent to IP65f, however their performance cannot be guaranteed for every environment. Be sure to confirm your work environment requirements prior to installation.
*11 Refer to the "AGP3000 Series Hardware Manual" for installation instructions.

External Dimensions



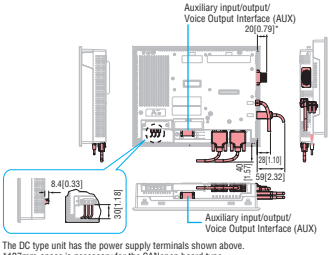
Panel Cut-out



Panel Thickness area 1.6 [0.06]–10.0 [0.39]

Accommodates the panel cutout dimensions of current models (259x201) GP-477RE

Cable Attached Dimensions



The DC type unit has the power supply terminals shown above.
*127mm-space is necessary for the CANopen board type.

Unit:mm [in.]

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

About 10.4-inch models with TFT color LCD. Replacing the GP2500 Series with the AGP-3500T requires an optional Panel Cutout Adapter (CA4-ATM10-01).
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.

AGP3000 Series

C Class
10.4"
VGA

STN
4,096

MONO
16 shades

AGP-3500S

SIO2ch	Ethernet	Communication Unit	Video Unit
USB(Host)	CF Card	AUX Sound out	Video in
Sound in	DIO(Sink/Source)	FLEX NETWORK	CANopen

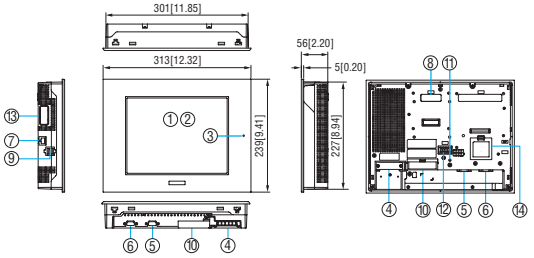
Models:
CANopen (master)
AC AGP3500-S1-AF-CA1M
DC AGP3500-S1-D24-CA1M

FUNCTIONAL SPECIFICATION		AGP-3500S	AGP-3500L
Display Type		STN Color LCD	Monochrome LCD
Display Colors		4,096 Colors	Black and White (16 Shades)
Dispay Resolution		640 x 480 pixels (VGA)	
Backlight		CCFL (Replaceable)	CCFL (Contact Pro-face for replacement)
Effective Display Area		211.2mm[8.31in.] x 162.3mm[6.39in.]	216.0mm[8.50in.] x 160.8mm[6.33in.]
Brightness Control		8 levels of adjustment available via touch panel	
Contrast Adjustment		8 levels of adjustment available via touch panel	
Language Fonts		Japanese: 6962 (JIS Standards 1&2) (including 607 non-kanji characters), ANK: 158 *1	
Character Sizes		Standard font: 8 x 8, 8 x 16, 16 x 16 and 32 x 32 dot fonts, Stroke font: 6 to 127 dot fonts	
Font Sizes		Standard font: Width can be expanded up to 8 times. Height can be expanded up to 8 times *2	
Text	8 x 8 dots	80 Char. x 60 rows	
	8 x 16 dots	80 Char. x 30 rows	
	16 x 16 dots	40 Char. x 30 rows	
	32 x 32 dots	20 Char. x 15 rows	
Application Memory		8MB FLASH EPROM *3	
Data Backup Memory		320KB SRAM (uses lithium battery) *4	
Control Memory	Variable Area	64KB SRAM (uses lithium battery) *4	
	Program Area	132KB FLASH EPROM	
	Number of Step	15,000steps*5	
Touch Panel Type		Resistive Film (analog)	
Touch Panel Resolution		1024 x 1024	
Interface	Serial (COM1)	Asynchronous Transmission: RS-232C/422/485 *6 Data Length: 7/8 bits, Stop Bit: 1/2 bits, Parity: none, Odd or Even, Data transmission speed: 2400bps to 115.2kbps, Connector: D-Sub 9pin plug	
	Serial (COM2)	Asynchronous Transmission: RS-422/485 Data Length: 7/8 bits, Stop Bit: 1/2 bits, Parity: none, Odd or Even, Data transmission speed: 2400bps to 115.2kbps 187.5kbps(MPI), Connector: D-Sub 9pin socket	
	Ethernet	IEEE802.3u, 10BASE-T/100BASE-TX,modular jack connector (RJ-45) x1	
	Expansion Unit	For Communication Unit x 1	
	USB	USB1.1 (USB Type-A conn.) x 2 Power voltage: DC5V±5%, Output current: 500mA (max.), Max. Communication distance: 5m	
	CF Card	CF Card Slot (Type-II) x 1	
	Sound Output	Speaker Output 70mW (Rated Load: 8Ω, Frequency: 1kHz) Connector: Two piece type terminal block (also used for AUX) x 1	
	AUX Input/Output	[AUX Output] Alarm Output, RUN Output, Buzzer Output, Rated Voltage: DC24V, Max. Rated Current: 50mA, [AUX Input] Remote Reset Input, Input Voltage: DC24V, Input Current: 6mA, Operating Voltage: (When ON) Min:DC9V, (When OFF) Max:DC2.5V Connector: Two piece type terminal block x 1	
	Function Expansion Memory	Installed on function expansion memory interface cover	

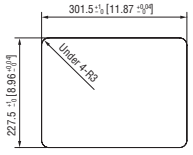
GENERAL SPECIFICATION	AC	DC
International Safety Standards		
Conforming Standards	UL60950-1, UL1604, CAN/CSA-C22.2 No. 60950-1-03 (c-UL approval), CSA-C22.2 No.213-M1987 (c-UL approval), EN55011 Class A, EN61000-6-2, EN60950-1	UL508, UL1604,CSA-C22.2 No.14-M95, CSA-C22.2 No.213-M1987, EN55011 Class A, EN61000-6-2
Ship Standard Acquisition	—	
Input Voltage	AC100V to AC240V	DC24V
Rated Voltage	AC85V to AC265V	DC19.2V to DC28.8V
Rated Frequency	50/60Hz	—
Allowable Voltage	Shorter than 1cycle (Voltage drop interval must be 1s or more)	10ms or less
Power Consumption	AC100V 0.9A or less AC240V 0.45A or less	50W or less
Voltage Endurance	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC1000V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance	10MΩ or higher at DC500V (min.)(between charging and FG terminals)	
Ambient Temperature	0ºC to +50ºC *7	
Storage Temperature	−20ºC to +60ºC	
Ambient Humidity	10%RH to 90%RH (Non-condensing, wet bulb temperature: 39ºC max.)	
Storage Humidity	10%RH to 90%RH (Non-condensing, wet bulb temperature: 39ºC max.)	
Pollution Degree	Pollution Degree 2	
Atmosphere	Free of corrosive gasses	
Air Pressure Vibration Resistance (Availment altitude)	800hPa to 1114hPa (2000 meters or lower)	
Vibration Resistance	IEC61131-2 compliant 5Hz to 9Hz Single-amplitude 3.5mm 9Hz to 150Hz Fixed acceleration 9.8m/s² X,Y,Z directions for 10 cycle (100min.)	
Noise Immunity (via noise simulator)	Noise Voltage: 1500Vp-p Pulse Duration: 1µs Rise Time: 1ns	Noise Voltage: 1000Vp-p Pulse Duration: 1µs Rise Time: 1ns
Electrostatic Discharge Immunity	6kV (complies with EN 61000-4-2 Level 3)	
Grounding	Protection: Type D (Common to SG-FG)	Function: Type D (Common to SG-FG)
Ratings (For front panel of installed unit)	Equivalent to IP65f NEMA #250 TYPE 4X/13 *8	
External Dimensions	W313mm[12.32in.] x H239mm[9.41in.] x D56mm[2.20in.]	
Weight	3.2kg (7.0lb) max.(Unit Only)	
Cooling Method	Natural air circulation	

*1 Korean, Simplified and traditional Chinese, Cyrillic, and Thai fonts are downloadable. For details, refer to the GP-Pro EX Operation Environment.
*2 Font Sizes can be set up by software.
*3 User area.
*4 A Lithium battery's lifetime is:
10 years when the battery's ambient temperature is 40ºC or less.
4.1 years when the battery's ambient temperature is 50ºC or less.
1.5 years when the battery's ambient temperature is 60ºC or less.
When used for back up: Approximately 100 days, with a fully charged battery.
Approximately 6 days, with a half-charged battery.
*5 Up to 60,000 steps can be converted in software. However, this reduces internal memory capacity (for screen data) by 1 MB.
*6 RS-232C and RS-422/485 are software switchable.
*7 Operating temperature refers to temperature inside mounting enclosure and on the side of the display. When using STN Color LCD models in an environment where the temperature becomes or exceeds 40 ºC for an extended period of time, the screen contrast level may decrease from its original level of brightness.
*8 The degree of protection provided by these products is equivalent to IP65f, however their performance cannot be guaranteed for every environment. Be sure to confirm your work environment requirements prior to installation.

External Dimensions



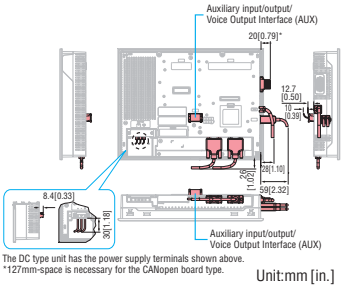
Panel Cut-out



Panel Thickness area 1.6 [0.06]~10.0 [0.39]

Accommodates the panel cutout dimensions of current models (301.5x227.5)
GP-577R/ GP-260*/ GP-250*

Cable Attached Dimensions



The DC type unit has the power supply terminals shown above.
*127mm-space is necessary for the CANopen board type.

Unit:mm [in.]

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

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.

AGP3000 Series

C Class
12.1"
SVGA

TFT
65, 536

AGP-3600T

SIO2ch	Ethernet	Communication Unit	Video Unit
USB(Host)	CF Card	AUX Sound out	Video in
Sound in	DIO(Sink/Source)	FLEX NETWORK	CANopen

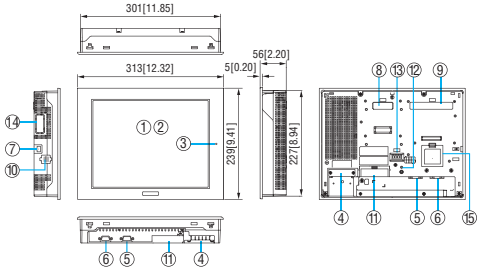
Models:
CANopen (master)
AC AGP3600-T1-AF-CA1M
DC AGP3600-T1-D24-CA1M

FUNCTIONAL SPECIFICATION		AGP-3600T	
Display Type		TFT Color LCD	
Display Colors		65,536 Colors (no blink) / 16,384 Colors (Enables blink feature) *1	
Dispay Resolution		800 x 600 pixels (SVGA)	
Backlight		CCFL (Replaceable)	
Effective Display Area		248.0mm[9.76in.] x 186.5mm[7.34in.]	
Brightness Control		8 levels of adjustment available via touch panel	
Language Fonts		Japanese: 6962 (JIS Standards 1&2) (including 607 non-kanji characters), ANK: 158 *2	
Character Sizes		Standard font: 8 x 8, 8 x 16, 16 x 16 and 32 x 32 dot fonts, Stroke font: 6 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	
Text	8 x 8 dots	100 Char. x 75 rows	
	8 x 16 dots	100 Char. x 37 rows	
	16 x 16 dots	50 Char. x 37 rows	
	32 x 32 dots	25 Char. x 18 rows	
Application Memory		8MB FLASH EPROM *4	
Data Backup Memory		320KB SRAM (uses lithium battery) *5	
Control Memory	Variable Area	64 KB SRAM (uses lithium battery) *5	
	Program Area	132KB FLASH EPROM	
	Number of Step	15,000steps*6	
Interface	Touch Panel Type	Resistive Film (analog)	
	Touch Panel Resolution	1024 x 1024	
	Serial (COM1)	Asynchronous Transmission: RS-232C/422/485 *7 Data Length: 7/8 bits, Stop Bit: 1/2 bits, Parity: none, Odd or Even, Data transmission speed: 2400bps to 115.2kbps, Connector: D-Sub 9pin plug	
	Serial (COM2)	Asynchronous Transmission: RS-422/485 Data Length: 7/8 bits, Stop Bit: 1/2 bits, Parity: none, Odd or Even, Data transmission speed: 2400bps to 115.2kbps 187.5kbps(MPI), Connector: D-Sub 9pin socket	
	Ethernet	IEEE802.3u, 10BASE-T/100BASE-TX, modular jack connector (RJ-45)	
	Expansion Unit(1)	For Communication Unit x 1	
	Expansion Unit(2)	For Video Unit x 1	
	USB	USB1.1 (USB Type-A conn.) x 2 Power voltage: DC5V±5%, Output current: 500mA (max.), Max. Communication distance: 5m	
	CF Card	CF Card Slot (Type-II) x 1	
	Sound Output	Speaker Output 70mW (Rated Load: 8Ω, Frequency: 1kHz) Connector: Two piece type terminal block (also used for AUX) x 1	
	AUX Input/Output	[AUX Output] Alarm Output, RUN Output, Buzzer Output, Rated Voltage: DC24V, Max. Rated Current: 50mA, [AUX Input] Remote Reset Input, Input Voltage: DC24V, Input Current: 6mA, Operating Voltage: (When ON) Min:DC9V, (When OFF) Max:DC2.5V Connector: Two piece type terminal block	
	Control	CANopen (master) type Model: AGP3600-T1-■■■-CA1M	Bit variable input: 512 points, Bit variable output: 512 points, Integer variable input: 128 points, Integer variable output: 128 points, Connector:D-Sub 9pin plug
	Function Expansion Memory	Installed on function expansion memory interface cover	

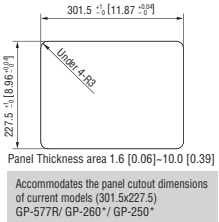
GENERAL SPECIFICATION	AC	DC
International Safety Standards	cULus, CE	cULus, cULus, CE
Conforming Standards	UL60950-1, UL1604, CAN/CSA-C22.2 No.60950-1-03 (c-UL approval), CSA-C22.2 No.213-M1987 (c-UL approval), EN55011 Class A, EN61000-6-2, EN60950-1	UL508, UL1604,CSA-C22.2 No.14-M95, CSA-C22.2 No.213-M1987, EN55011 Class A, EN61000-6-2
Ship Standard Acquisition	—	
Input Voltage	AC100V to AC240V	DC24V
Rated Voltage	AC85V to AC265V	DC19.2V to 28.8V
Rated Frequency	50/60Hz	—
Allowable Voltage	Shorter than 1cycle (Voltage drop interval must be 1s or more)	10ms or less
Power Consumption	AC100V 0.9A or less AC240V 0.45A or less	50W or less
Voltage Endurance	AC1500V 20mA for 1 minute (between charging and FG terminals)	AC1000V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance	10MΩ or higher at DC500V (min.)(between charging and FG terminals)	
Ambient Temperature	0 °C to +50 °C *8	
Storage Temperature	−20 °C to +60 °C	
Ambient Humidity	10%RH to 90%RH (Non-condensing, wet bulb temperature: 39°C max.)	
Storage Humidity	10%RH to 90%RH (Non-condensing, wet bulb temperature: 39°C max.)	
Pollution Degree	Pollution Degree 2	
Atmosphere	Free of corrosive gasses	
Air Pressure Vibration Resistance (Availment altitude)	800hPa to 1114hPa (2000 meters or lower)	
Vibration Resistance	IEC61131-2 compliant 5Hz to 9Hz Single-amplitude 3.5mm 9Hz to 150Hz Fixed acceleration 9.8m/s² X,Y,Z directions for 10 cycle (100min.)	
Noise Immunity (via noise simulator)	Noise Voltage: 1500Vp-p Pulse Duration: 1 µs Rise Time: 1ns	Noise Voltage: 1000Vp-p Pulse Duration: 1 µs Rise Time: 1ns
Electrostatic Discharge Immunity	6kV (complies with EN 61000-4-2 Level 3)	
Grounding	Protection: Type D (common to SG-FG)	Function: Type D (common to SG-FG)
Ratings (For front panel of installed unit)	Equivalent to IP65f NEMA #250 TYPE 4X/13 *9	
External Dimensions	W313mm[12.32in.] x H239mm[9.41in.] x D56mm[2.20in.]	
Weight	3.2kg (7.0lb) max.(Unit Only)	
Cooling Method	Natural air circulation	

*1 Changing the Colors setting to "65,536 colors" will disable the blinking feature on all screens in your project. If you wish to use the blinking feature, do not select "65,536 colors".
*2 Korean, Simplified and traditional Chinese, Cyrillic, and Thai fonts are downloadable. For details, refer to the GP-Pro EX Operation Environment.
*3 Font Sizes can be set up by software.
*4 User area
*5 A Lithium battery's lifetime is:
10 years when the battery's ambient temperature is 40°C or less.
4.1 years when the battery's ambient temperature is 50°C or less.
1.5 years when the battery's ambient temperature is 60°C or less.
When used for back up: Approximately 100 days, with a fully charged battery.
Approximately 6 days, with a half-charged battery.
*6 Up to 60,000 steps can be converted in software. However, this reduces internal memory capacity (for screen data) by 1 MB.
*7 RS-232C and RS-422/485 are software switchable.
*8 Depending on the FLEX NETWORK unit, the amount of dedicated channels will change.
*9 Operating temperature refers to temperature inside mounting enclosure and on the side of the display.
*10 The degree of protection provided by these products is equivalent to IP65f, however their performance cannot be guaranteed for every environment. Be sure to confirm your work environment requirements prior to installation.

External Dimensions

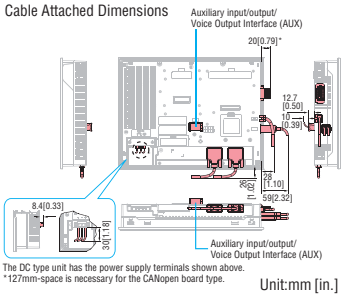


Panel Cut-out



Accommodates the panel cutout dimensions of current models (301.5x227.5)
GP-577R/ GP-260*/ GP-250*

Cable Attached Dimensions



The DC type unit has the power supply terminals shown above.
*127mm-space is necessary for the CANopen board type.

Unit:mm [in.]

Parts Names
① Display ② Touch Panel ③ Status LED ④ Power Input Terminal Block (AC model) Power Plug Connector (DC model) ⑤ Serial Interface(COM1) ⑥ Serial Interface(COM2)
⑦ Ethernet Interface (LAN) ⑧ Expansion Unit Interface(1) ⑨ Expansion Unit Interface(2) ⑩ USB Interface (Host) 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

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.

Powerful Ladder Logic Instructions

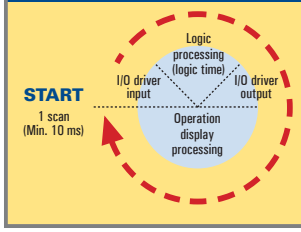
Category		Instruction Name	Instruction Notation	Ladder Symbol
Basic Instruction	Bit Basic	Normally Open	NO	
		Normally Closed	NC	
		Out	OUT	
		Negative Out	OUTN	
		Set	SET	
		Reset	RST	
	Pulse Basic	Positive Transition	PT	
		Negative Transition	NT	
	Program Control	Jump	JMP <*P>	LABEL NAME
		Jump to Subroutine	JSR <*P>	SUBROUTINE NAME
		Return	RET	
		Repeat number of times (For)	FOR	
		Repeat number of times (NEXT)	NEXT	
		Inverse	INV	
		Exit	EXIT	
		Power Bar Control	PBC	
		Power Bar Reset	PBR	
		Logic Wait Instruction	LWA	
Timer Instruction		On Delay Timer	TON	
		Off Delay Timer	TOF	
		Pulse Timer	TP	
		Accumulate On Delay Timer	TONA	
		Accumulate Off Delay Timer	TOFA	
Counter Instruction		Up Counter	CTU <*P>	
		Down Counter	CTD <*P>	
		Up/ Down Counter	CTUD <*P>	
R/W Instruction	Time Read/ Write	Time Read	JRD <*P>	
		Time Set	JSET <*P>	
	Date Read/ Write	Date Read	NRD <*P>	
		Date Set	NSET <*P>	
Operation Instruction	Arithmetic Operation	Add	ADD <*P>	
		Subtract	SUB	
		Multiplication	MUL <*P>	

Category		Instruction Name	Instruction Notation	Ladder Symbol
Operation Instruction	Arithmetic Operation	Division	DIV <*P>	
		Modulation	MOD <*P>	
		Increment	INC <*P>	
		Decrement	DEC <*P>	
	Time Operation	Time Addition	JADD <*P>	
		Time Subtraction	JSUB <*P>	
	Logical Operation	Logical AND	AND <*P>	
		Logical OR	OR <*P>	
		Logical XOR	XOR <*P>	
		Logical NOT	NOT <*P>	
	Transfer	Move (Copy)	MOV <*P>	
		Block Move (Block Copy)	BLMV <*P>	
		Fill Move	FLMV <*P>	
		Exchange	XCH <*P>	
	Shift	Shift Left	SHL <*P>	
		Shift Right	SHR <*P>	
		Arithmetic Shift Left	SAL <*P>	
		Arithmetic Shift Right	SAR <*P>	
	Rotation	Rotate Left	ROL <*P>	
		Rotate Right	ROR <*P>	
		Rotate Left with Carry Over	RCL <*P>	
		Rotate Right with Carry Over	RCR <*P>	
Function Instruction	Calculate Function	Sum	SUM <*P>	
		Average	AVE <*P>	
		Square Root	SQRT <*P>	
		Bit Conut	BCNT <*P>	
		PID	PID	
	Trigonometric Function	Sine	SIN <*P>	

Category		Instruction Name	Instruction Notation	Ladder Symbol
Function Instruction	Trigonometric Function	Cosine	COS <*P>	
		Tangent	TAN <*P>	
		Arc Sine	ASIN <*P>	
		Arc Cosine	ACOS <*P>	
		Arc Tangent	ATAN <*P>	
		Cotangent	COT <*P>	
	The other Function	Exponential	EXP <*P>	
		Logarithm	LN <*P>	
		Log Base 10	LG10 <*P>	
Compare Instruction	Arithmetic Compare	Equal	EQ <*P>	
		Greater Than	GT <*P>	
		Greater Than Or Equal To	GE <*P>	
		Less Than	LT <*P>	
		Less Than Or Equal To	LE <*P>	
		Not Equal	NE <*P>	
	Time Compare	Time Compare Equal	JEQ <*P>	
		Time Compare Greater Than	JGT <*P>	
		Time Compare Less Than	JLT <*P>	
		Time Compare Greater Than Or Equal To	JGE <*P>	
		Time Compare Less Than Or Equal To	JLE <*P>	
		Time Compare Not Equal	JNE <*P>	
CANopen Instructions	Define Read/Write	Defined Node Reads object dictionary	SDOR <*P>	
		Defined Node Writes to object dictionary	SDOW <*P>	

Category		Instruction Name	Instruction Notation	Ladder Symbol
Compare Instruction	Date Compare	Date Compare Equal	NEQ	
		Date Compare Greater Than	NGT	
		Date Compare Greater Than Or Equal To	NGE	
		Date Compare Less Than	NLT	
		Date Compare Less Than Or Equal To	NLE	
		Date Compare Not Equal	NNE	
Convert Instruction	Data Convert	BCD Convert	BCD <*P>	
		BIN Convert	BIN <*P>	
		Encode	ENCO <*P>	
		Decode	DECO <*P>	
		Convert to Radian	RAD <*P>	
		Degree Convert	DEG <*P>	
		Scale	SCL <*P>	
	Type Convert	Convert Integer to Float	I2F <*P>	
		Convert Integer to Real	I2R <*P>	
		Convert Float to Integer	F2I <*P>	
		Convert Float to Real	F2R <*P>	
		Convert Real to Integer	R2I <*P>	
		Convert Real to Float	R2F <*P>	
		Convert Seconds	H2S <*P>	
		Convert Seconds to Time	S2H <*P>	
CANopen Instructions	Read State	Reads Master state	DGMT	
		Reads Slave state	DGSL	

How to think scan time



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

Including scan time error 0.3%

*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.).

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.

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.

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.

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 AGP35x0T/ 36x0T/3750T

GP3000-DVI01
Video Module (1x DVI IN) for AGP35x0T/36x0T/3750T

GP3000-RGB201
Video Module (2x RGB IN) for AGP35x0T/36x0T/3750T

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-ATFALL-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
CA5-DFS10-01

8" for AGP3400 series
PS400-DF00

6" for AGP/LT33xx
CA3-DFS6-01

3.8" for AGP/LT 32xx
CA6-DFS4-01

DC Power Supply Connector for AGP330x and AGP34x0 models
CA5-DCCNM-01

DC Power Supply Connector for AGP35x0 and AGP36x0 models
CA5-DCCNL-01

Communication and I/O Options for CANopen

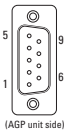
CANopen (master) Type

CANopen Data Transfer Settings

Communication Type	1:N
Connection Method	Bus type
Transfer Method	CSMA/NBA. Half-duplex serial transmission.
Simultaneous Method	Asynchronus + phase correction
Data Length	Max. 8byte
Error control	CRC
No. of Stations	63 models Bit variable input/output:512 points Integer variable input/ output:128 points
Transfer distance speed/Transmission length	(1Mbps max.):ISO11898-compliant

Baud rate*	Bus length
50kbps	1000m
125kbps	500m
250kbps	250m
500kbps	100m
800kbps	40m
1000kbps	20m

Pin Connection

Pin Arrangement	Pin No.	Signal Name	Description
 (AGP unit side)	1	—	
	2	CAN_L	CAN-L Bus line
	3	CAN_GND	CAN ground
	4	—	
	5	—	
	6	—	
	7	CAN_H	CAN-H Bus line
	8	—	
	9	—	
	Shell	FG	Frame ground (Common with SG)

CANopen

CANopen creates an open network compatible with European standards based on CAN. The specifications of CANopen conform to the DS301 standard of the CiA (CAN in automation) standards organization.

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)
Mounting Method	35 mm DIN rail mounting
Weight	185g (0.4lb) max.(HTB Only)

Input Specifications

Input Points		12 (Common wiring)
Input Method		Sink/Source Input
Rated Current		5mA/1 point (DC24V)(I0, I1, I6, I7) 7mA/1 point(DC24V)(I2-I5, I8-I11)
Input Resistance		5.0kΩ (I0, I1, I6, I7) 3.4kΩ (I2-I5, I8-I11)
Operation Range	ON Voltage	35μs + Filter position (I0, I1, I6, I7)
	OFF Voltage	40μs + Filter position (I2-I5, I8-I11)
Input Delay Time	OFF→ON	45μs + Filter position (I0, I1, I6, I7)
	ON→OFF	150μs + Filter position (I2-I5, I8-I11)
Isolation Method		Between input terminal and internal circuits: Photocoupler insulation (Up to AC 500Vrms insulation protection) Input terminal: No insulation

Output Specifications (Q0, Q1)

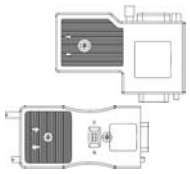
Output Points		2
Output Method		Transistor source output
Common Design		2 points/1 common line
Maximum Load Voltage		1A/1 common
Allowable Voltage Drop		Less than DC 1V (The voltage of the COM and output terminal when output is ON)
Output Delay Time	OFF→ON	5μs or less
	ON→OFF	5μs or less
Isolation Method		Between output terminal and internal circuits: Photocoupler insulation (Up to AC 500Vrms insulation protection) Output terminal: No insulation

Output Specifications (Q2~Q7)

Output Points		6
Output Method		Relay Output
Common Design		COM1: 3 points/1 common, No contact, COM2: 2 points/1 common, No contact, COM3: 1 point/1 common, No contact,
Maximum Load Voltage		2A/1 point, 8A/1 common
Isolation Method		Between output terminal and internal circuits: AC 1500Vrms, 1 minute; Output terminal: AC 750Vrms, 1 minute
Output Delay Time	OFF→ON	10ms or less (Not including bounds time)
	ON→OFF	5ms or less (Not including bounds time)

	Module	Description
Communication	CA8-CANLT-01	CANopen Master Module for LT3000 Series
		Supports up to 63 CANopen devices (Pro-face EXM or 3rd Party)
	HTB1CODM9LP	"HTB" Communication Module for Pro-face EXM I/O Modules
		Add up to 7 I/O Modules per HTB. One HTM
	CA9-CANALL/EX-01	CANopen Slave Communication Module for AGP3000
		Add AGP33/34/35/36/37 as Slave modules in a CANopen Network
Discrete I/O	EXM-DDI8DT	8pt Sin/Source Input, DC24V (On DC15V, Off DC4V)
	EXM-DD16DT	16pt Sinc/Source Input, DC24V (On DC15V, Off DC4V)
	EXM-DRA8RT	8pt Relay Output, 240VAC/DC30V 2.0A, Common 2 (8.0A)
	EXM-DD08UT	8pt Sink Output, DC24V 0.1A, Common 1 (3.0A)
	EXM-DD0-16UK	16pt Sink Output, DC24V 0.1A, Common 1 (1.0A)
	EXM-DD016TK	16pt Source Output, DC24V 0.1A, Common 1 (1.0A)
	EXM-DMM8DRT	4pt Sink/Source Input, DC24V (On DC15V, Off DC4V)
		4pt Relay Output, 240VAC/DC30V 2.0A Common 1 (7.0A)
Analog I/O	EXM-AM12HT	2ch Input, 12bit, 0 to 10 VDC/4 to 20mA
	EXM-ALM3LT	2ch Temperature Input, TC (Type K/J/T)/RTD (3wire Pt 100)
		1CH oUTPUT, 12BIT, 0 TO 10 vdc/4 TO 20Ma
	EXM-AMO-1HT	1ch Output, 12bit, 0 to 10 VDC/4 to 20mA
Cables	CA-CN00-TRM	CANopen, 9Pin DSub, straight conn with Term. Switch
	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

CA-CABLE-010M
CA-CABLE-050M
CA-CABLE-100M



CA-CN00-TRM
CA-CN90-TRM

CA8-CANLT-01

HTB1C0DM9LP

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

EX Modules

Front

Right Side

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