

Pro-face

LT3000 Series

Operator Interface Plus Control



Simplify Your Machine Controls

Control + Operation + Display

LT3000 Series

Standalone Machine Controller
Feature Highlights

Application Examples

Reduce Component Count

LT3000 – Specifications

Specifications and Drivers
Expansion I/O Options
Instructions and System Structure

Enterprise-Wide Solutions

All-in-one HMI and Logic Development
Real-time Reporting
HMIs for Every Application



Simplify Your Machine Controls

What if you could...

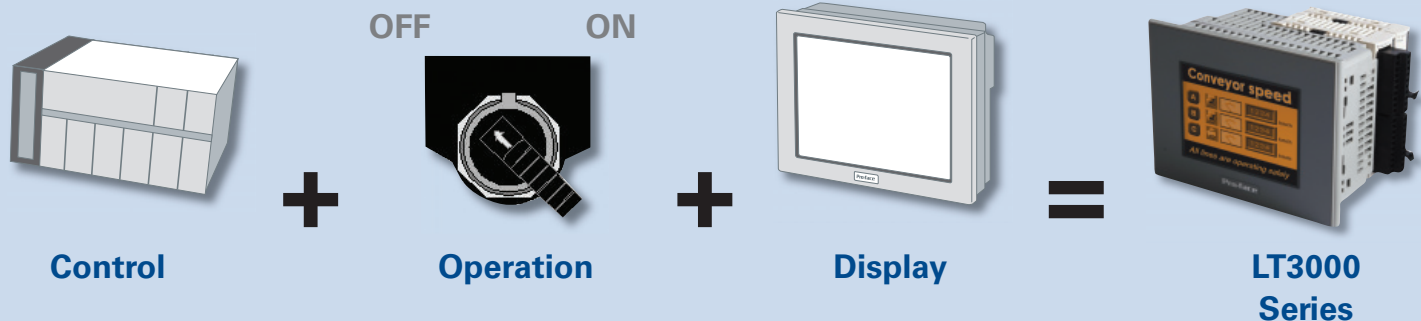
- Reduce system cost?
- Reduce machine complexity?
- Reduce on-site field maintenance?

And gain...

- Increased flexibility
- Increased reliability
- Increased durability
- Overall Equipment Efficiency (OEE)



ALL IN ONE!



The best use of your controls budget

LT3000 - Operator Interface Plus Control

Standalone Machine Controller

- Unique package combines HMI, PLC and I/O functions
- One software application for HMI and control



Feature Highlights

HMI Functionality

- Touch screen
- Security
- Recipes
- Alarms
- Operation log
- Time scheduling
- Multi-language
- Dual color display (LT3201)

Control Functionality

- Ladder logic and instruction list programming
- On-screen ladder monitor
- Built-in Discrete I/O
 - High Speed counter (encoder input)
 - Pulse output/PWM
- Plus Expansion I/O
 - Analog/Discrete
 - Temperature input
- CANopen Distributed I/O

Connectivity

USB

- Project transfer
- Logging
- Printing
- Bar code

Serial port (LT330x only) RS-232/422/485

- Bar code
- Temperature control
- Inverters/Drives/Pumps
- Sending/Receiving ASCII

Ethernet (LT3300 only)

(Requires Pro-Server EX)

- Data management
- Remote monitoring
- Logging
- Productivity/Quality/OEE Reporting
- Enterprise Integration via:
 - SAP, Access™, Excel®, SCADA, SMTP e-mail, SQL, MES, and ERP

LT3000 Series



LT3300S

- 5.7" STN color display
- Ports:
 - (1) USB
 - (1) Ethernet
 - (1) Serial



LT3300L

- 5.7" Black and white display
- Ports:
 - (1) USB
 - (1) Ethernet
 - (1) Serial



LT3301L

- 5.7" Black and white display
- Ports:
 - (1) USB
 - (1) Serial



LT3201A

- 3.8" Amber/red display
- Ports:
 - (1) USB

**Optimize
Productivity!**



LT3300

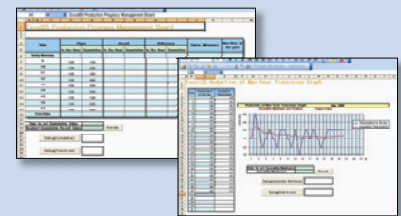


Data management software

Pro-Server EX



**Data
Management
Software**



**Reports and
database connectivity
via Ethernet**

Maximize machine efficiencies

Keep it Simple With LT3000

Example 1



Cost Control...

HMI
HMI/Logic software
3 Drives

5 Components



...Costly Control

PLC
PLC software
HMI
HMI software
PLC to HMI cable
3 Drives

8 Components

Example 2

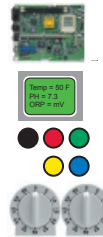


Touch Control...

Off the shelf, graphical display includes:

- Control
- On-screen buttons and lamps
- Built-in timers

**Readily available product
1 Component**



...Custom Controller

Custom controller
Text display
3 buttons
2 lamps
2 timers

**Custom controller
9 Components**

Calculate Your Savings

Item	New LT3000 Machine Solution	Current Machine
1. PLC	\$	\$ 600
2. PLC programming software	\$	\$ 600
3. Annual PLC software maintenance contract	\$	\$ 1500
4. PLC to HMI cable	\$	\$ 100
5. HMI display hardware	\$ 600	\$ 1000
6. HMI programming software	\$ First Time Buyer - 0 -	\$ 500
7. Annual HMI software maintenance contract	\$	\$ 1000
8. Larger power supply	\$	\$ 100
9. Larger enclosure	\$	\$ 300
10. Cost to maintain 2 databases	\$	\$ 500
11. Impact to reliability of having PLC and HMI separated by a cable	\$	\$ 500
Totals	\$ 600	\$ 6700
YOU SAVE	\$ 6100	

The LT3000 eliminates:

- PLC
- PLC software
- PLC to HMI cable
- Text displays
- Push buttons
- Lamps
- Timers/counters
- I/O modules
- ASCII module for bar-code input
- Encoder input module
- Pulse output module
- Custom controllers
- Manual data collection

Simplify Now

LT3000 - Operator Interface Plus Control

5.7"



LT3300

Certifications



Class I, Division 2 Hazardous Locations

Display

- STN color LCD (4,096 colors)
- Monochrome B/W (16 shades)
- 320 x 240 pixels
- Analog touch screen (no grid)

Environmental

- Operating temp. 0 ° to 50 °C
- Ratings: NEMA, 4x/13, IP65f
- Humidity: 10-90% noncondensing
- External Dimensions: W167.4mm [6.59in] x H135.0mm [5.31in] x D77.6mm [3.06in]

Ports & Interfaces



I/O Architectures

Built-in DIO: 16 in/16 out ¹
Expansion I/O up to 3 EXM modules
CANopen to Pro-face or third-party slaves (Requires optional communication module)

Model Numbers

LT3300-S1-D24K LT3300-L1-D24K
LT3300-S1-D24C LT3300-L1-D24C

5.7"



LT3301

Certifications



Class I, Division 2 Hazardous Locations

Display

- Monochrome B/W LCD (16 shades)
- 320 x 240 pixels
- Analog touch screen (no grid)

Environmental

- Operating temp. 0 ° to 50 °C
- Ratings: NEMA, 4x/13, IP65f
- Humidity: 10-90% noncondensing
- External Dimensions: W167.4mm [6.59in] x H135.0mm [5.31in] x D77.6mm [3.06in]

Ports & Interfaces



I/O Architectures

Built-in DIO: 16 in/16 out ¹
Expansion I/O up to 3 EXM modules
CANopen to Pro-face or third-party slaves (Requires optional communication module)

Model Numbers

LT3301-L1-D24K
LT3301-L1-D24C

3.8"



LT3201

Certifications



Class I, Division 2 Hazardous Locations

Display

- Monochrome amber LCD (8 shades)
- 320 x 240 pixels
- Analog touch screen (no grid)

Environmental

- Operating temp. 0 ° to 50 °C
- Ratings: NEMA, 4x/13, IP65f
- Humidity: 10-90% noncondensing
- External Dimensions: W130mm [5.12in] x H104mm [4.09 in] x D76.5mm [3.01in]

Ports & Interfaces



I/O Architectures

Built-in DIO: 12 in/6 out ¹
Expansion I/O up to 2 EXM modules
CANopen to Pro-face or third-party slaves (Requires optional communication module)

Model Numbers

LT3201-A1-D24K
LT3201-A1-D24C

Choose from 13 EXM I/O modules:

Discrete input modules

8-Point 	8-point input module EXM-DDI8DT
16-Point 	16-point input module EXM-DDI16DT

Discrete output modules

8-Point 	8-point relay output module EXM-DRA8RT
16-Point 	16-point relay output module EXM-DRA16RT
8-Point 	8-point sink output module EXM-DDO8UT
16-Point 	16-point sink output module EXM-DDO16UK
8-Point 	8-point output source module EXM-DDO8TT
16-Point 	16-point output source module EXM-DDO16TK

Mixed discrete I/O modules

4-Point/ 4-Point 	4-point input / 4-point output module EXM-DMM8DRT
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Analog I/O modules

2-Channel 	2-channel analog input module EXM-AMI2HT
2-Channel Temp. or 1-Channel Output 	2-channel temperature input / 1-channel analog output module EXM-ALM3LT
2-Channel/ 1-Channel 	2-channel analog input / 1-channel analog output module EXM-AMM3HT
1-Channel 	1-channel analog output module EXM-AMO1HT

Available Drivers (LT3300 and LT3301 only)

Contact your local Pro-face representative for information on devices not listed here

Digital Electronics Corporation	Memory Link
Omron Corporation	Temperature Controller CompoWay/F
Yokogawa Electric Corporation	Personal Computer Link SIO
RKC Instrument Inc.	Temperature Controller
	Temperature Controller
Shinko Technos Co. Ltd.	Indicating Controller SIO
Yamatake Corporation	Digital Controller SIO
Generic ASCII	Built-in Scripting

¹DIO can be configured as standard input/outputs or used for PWM, PLC, HSC or pulse-catch.

LT3000 Specifications

Functional Specifications

Models		LT3300S-S1-D24	LT3300-L1-D24 LT3301-L1-D24	LT3201-A1-D24
Display	Type	STN color LCD	Monochrome LCD	Monochrome LCD
	Colors	Color (4,096)	B&W (16 shades)	Amber/Red (8 shades)
	Backlight	LED		
	Resolution	320 x 240 pixels		
	Effective Display Area	117.2mm [4.61in.] x 88.4mm [3.48in.]		W78.8mm [3.10in.] x H59.6mm [2.35in.]
Memory	Application	FLASH EPROM 6MB Data Backup *1		
	Data Backup	SRAM 128 KB *2		
Touch Panel	Type	Analog Resistive Film		
Control Memory	Variable Area	64KB SRAM (uses lithium battery) *2		
	Program Area	132KB FLASH EPROM (enough for 15,000 program steps) *3		
Interfaces	Aux Interface /scalable unit	Interface for external additional unit only (Such as communication equipment)		
	EX Module Interface	Interface up to three Pro-face EX modules (Any mix)		Interface up to two Pro-face EX modules (Any mix)
	USB	USB port 1.1, Host I/F, USB TYPE-A connector		
	DIO	input: 16 discrete points / output: 16 discrete points		input: 12 discrete points / output: 6 discrete points
	Serial	COM1: RS232C/RS422/RS485 Asynchronous Transmission / Data length: 7 bit/8bit. Parity: none, Odd or Even stop bit: 1bit/2bit Data transmission speed: 2400bps to 115.2Kbps Connector: DSUB-9pin plug		_____
	Ethernet	IEEE802.3u, 10 Base-T/100 Base-TX (No Ethernet for LT3301-L1)		_____

General Specifications

Electrical	Conforming to Standards	UL508, CSA-22.2 No.142-M1987, CSA-22.2 No.213-M1987, CE Marking, EN55011, EN61000-6-2	
	Rated Voltage	24V DC (19.2V DC to 28.8V DC)	
	Allowable Voltage Drop	3mV (max.)	10mV or less
	Power Consumption	27W (max.)	18W or less
	Voltage Endurance	AC1000V 20mA for 1min. (between charging and FG terminals)	
Environmental	Insulation resistance	DC500V 10MΩ (min.) (between charging and FG terminals)	
	Operating/Storage Temp.	-0°C (32°F) to 50°C (122°F)*4 / -20°C (-4°F) to 60°C (140°F)	
	Humidity	10%RH to 90%RH (wet bulb temperature: 39°C max. - no condensation)	
	Altitude Operation	800 hPa to 1,1114 hPa (2000 meters above sea level or lower)	
	Vibration Resistance	IEC61131-2 compliant 5 to 9Hz single-amplitude 3.5mm 9 to 150Hz constant-accelerated velocity 9.8m/s², X, Y, Z directions for 10 times (100 min)	
	Noise Immunity	Noise voltage: 100Vp-p, Pulse duration, 1s, Arise time: 1ns *5	
	Electrostatic Discharge Immunity	6kV (complies with EN 61000-4-2 Level 3)	
Structural	Grounding	Grounding resistance of 100 2mm, or thicker wire, or your country's applicable standard, (Same for FG and SG terminals)	
	Ratings	Equivalent to IP65f, NEMA #250 Type 4x13 (front surface when panel is embedded) Feature size: All-in-one installation configuration: Panel embedding *6	
	Weight	1.0kg (2.2lb) or less (main body only)	
	Cooling Method	Natural or air circulation	

Input / Output Specifications

Models		LT3300S-S1-D24 / LT3300-L1-D24 / LT3301-L1-D24	LT3201-A1-D24
Input	Rated Voltage	DC24V (Maximum Allowable DC28.8V)	
	Input Method	Sink / Source Input	
	Rated Current	6.5mA (DC24V) (IN0, IN2, IN4, IN6), 4.1mA, (DC24V) (Other inputs)	
	Input Resistance	Appr. 3.7k (IN0, IN2, IN4, IN6), Appr. 5.9k (Other inputs)	Appr. 3.7k (IN0, IN2, IN4, IN6), Appr. 4.7k, (Other inputs)
	Insulation Method	Photocoupler Isolation	
	External Connection	38-Pin connector (used with Output section)	22-pin connector
Output	External Power Supply	For signal: DC24V	
	Rated Voltage	DC24V (Allowable Voltage DC20.4V to DC28.8V)	
	Output Method	—K = Sink output, —C = Source output	
	Maximum Load Current	0.2A/point, 1.6A / common	0.2A / point, 1.2A / common
	Output Voltage Drop	DC 0.5V or less	
	Output Delay Time	OFF to ON 5μs or less (with output DC 24V, 200mA) LT3301L: 0.5ms or less (with output DC 24V, 200mA)	0.5 ms or less (with output DC 24V, 200mA)
	Type of Output	Transistor Output	
	Internal Fuse	3.5A, 125V Chip fuse x 2 (not replaceable)	2.5A, 125V Chip fuse x 2
	Surge Control Circuit	Zener diode	
	Isolation Method	Photo Coupler	
	External Connection	38-pin connector (also used for input)	22-pin connector
	External Power Supply	For signal: DC24V	

High-speed Counter / Pulse Catch Input Specifications

	Counter	Pulse Catch
Input *7	24V DC Open collector	24V DC Open collector
	Single phase (4 points)	Double phase (1 or 2 points)
Configurable Inputs	CT0 (IN0), CT01 (IN2), CT2 (IN4), CT3 (IN6) (according to user setting)	Use CT0 (IN0) and CT01 (IN2) in pairs, CT0: Phase A, CT1: phase B, Use CT2 (IN4), CT3 (IN6) in pairs, CT2: Phase A, CT3: phase B (according to user setting)
Minimum pulse width (pulse input)		
Count speed (startup and fall time)		
Phase Differential	1 phase	90° phase difference, 2 phase signal, 1 phase + direction signal
Maximum Counting Freq	100 Kpps	50 Kpps
Counting	Available	Not available
Count Register	32-bit UP/DOWN counter	
Counter /mode Changeover	Set up using the software	
Setting upper limit/	Not available	
Preload / changeover	Available	

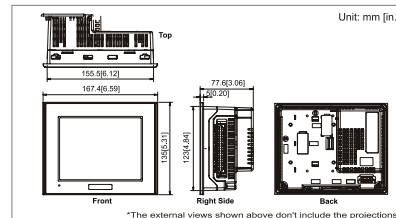
Pulse / PWM Output Specifications

	Pulse Output	PWM Output
Outputs *8	4 points	
Specified Possible Outputs	PLS0 to PLS3 (OUT0 to OUT3) depending on user setting	PWM to PWM3 (OUT0 to OUT3) depending on user setting
Voltage Load	24V DC (min. 1mA)	
Maximum Varies	Possible to use up to 65 kHz per point (set up using the Output Freq software) depending on high-speed counter and pulse output CH number	
Pulse Acceleration	Available	Not available
ON Duty	50% ± 10% (when 65 kHz)	19% to 8% (at 65 kHz)

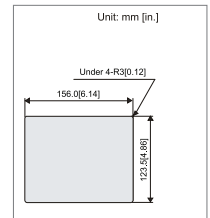
Optional Items

	Product Name	Model No.
Software	GP-PRO EX V**	EX-ED-V** (V21 or higher)
	GP-PRO EX Editor License *9	EX-ED-LICENSE-V**
	Pro-Server EX Developer (LT3300 only) *10	EX-SDV-V** (V1.22 or higher)
Cable	USB Transfer Cable (2m) (Recommended)	CA3-USBCB-01
	USB Cable (5m)	FP-US00
	USB Front Cable (1m)	CA5-USBEXT-01
	USB Serial (RS-232C) Conversion Cable (0.5m)	CA6-USB232-01
	RS-232C Cable (5m)	CA3-CBL232/5M-01
	RS-422C Cable (5m)	CA3-CBL422/5M-01
	RS-422C Cable (5m) *11	CA3-CBL422-01
Adapter	RS-422C Isolation Unit	CA3-IS0232-01
	COM Port Conversion Adapter	CA3-ADPCOM-01
	Terminal Block Conversion Adapter	CA3-ADPTRM-01
	3.8" Screen Protection Sheets for LT3201	CA6-DFS4-01
	6" Screen Protection Sheets for LT33xx	CA3-DFS6-01

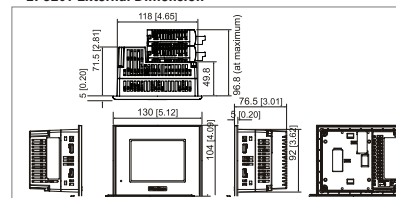
LT-3300 Series External Dimension



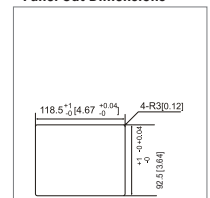
Panel Cut Dimensions



LT-3201 External Dimension



Panel Cut Dimensions



Mount horizontal or vertical as required.

*1 It is user active capacity. *2 Service life of lithium batteries 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, and 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.

*3 Using Pro-face's calculation method. *4 Extended use in environments where surrounding air temperature is 40°C or higher may degrade the display quality and result in decreased contrast. *5 According to noise simulator. *6 We have confirmed compatibility under applicable conditions, but this does not guarantee compatibility in all environments. *7 Input/output No. is different by a combination for exclusive specifications. *8 Input/output No. is different by a combination for exclusive specifications. *9 Purchase when installing GP-Pro-EX in two or more PCs. A separate license is required for each PC. *10 Only for units with Ethernet. *11 Only for connecting devices with terminal resistance value of 100.

Powerful Ladder Logic Instructions

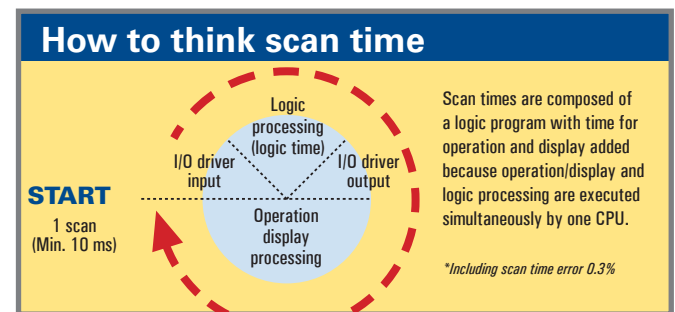
Category	Instruction Name	Instruction Notation	Ladder Symbol
Basic Instruction	Bit Basic	Normally Open	NO
		Normally Closed	NC
		Out	OUT
		Negative Out	OUTN
		Set	SET
	Pulse Basic	Reset	RST
		Positive Transition	PT
		Negative Transition	NT
	Program Control	Jump	JMP <P>
		Jump to Subroutine	JSR <P>
		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	Up Counter	CTU
		Down Counter	CTD
		Up/Down Counter	CTUD
	Time Read/Write	Time Read	JRD
		Time Set	JSET
		Date Read	NRD
	Date Read/Write	Date Set	NSET
		Add	ADD
	Arithmetic Operation	Subtract	SUB
		Multiplication	MUL

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

Category	Instruction Name	Instruction Notation	Ladder Symbol
Function Instruction	Trigonometric Function	Cosine	COS
		Tangent	TAN
		Arc Sine	ASIN
		Arc Cosine	ACOS
		Arc Tangent	ATAN
		Cotangent	COT
		Exponential	EXP
	The other Function	Logarithm	LN
		Log Base 10	LG10
		Equal	EQ
	Arithmetic Compare	Greater Than	GT
		Greater Than Or Equal To	GE
		Less Than	LT
		Less Than Or Equal To	LE
		Not Equal	NE
		Time Compare Equal	JEQ
		Time Compare Greater Than	JGT
Compare Instruction	Time Compare	Time Compare Less Than	JLT
		Time Compare Greater Than Or Equal To	JGE
		Time Compare Less Than Or Equal To	JLE
		Time Compare Not Equal	JNE
		Sum	SUM
	Calculate Function	Average	AVE
		Square Root	SQRT
		Bit Count	BCNT
		PID	PID
		Sine	SIN

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
	Data Convert	BCD Convert	BCD
		BIN Convert	BIN
		Encode	ENCO
		Decode	DECO
		Convert to Radian	RAD
		Degree Convert	DEG
		Scale	SCL
	Type Convert	Convert Integer to Float	I2F
		Convert Integer to Real	I2R
		Convert Float to Integer	F2I
		Convert Float to Real	F2R
		Convert Real to Integer	R2I
		Convert Real to Float	R2F
		Convert Seconds	H2S
Convert Instruction	Data Convert	Convert Integer to Float	I2F
		Convert Integer to Real	I2R
		Convert Float to Integer	F2I
		Convert Float to Real	F2R
		Convert Real to Integer	R2I
		Convert Real to Float	R2F
		Convert Seconds	H2S
	Type Convert	Convert Integer to Float	I2F
		Convert Integer to Real	I2R
		Convert Float to Integer	F2I

*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.).



EX Module Specifications

Input module

	EXM-DDI8DT	EXM-DDI16DT
Input Specifications		
Input Points	8points (sink/source type-dual use)	16points (sink/source type-dual use)
External Connection	10-Pin terminal connector	
Rated Voltage	DC24V	
Rated Input Current	7.3mA/DC24V	
Input Impedance	3.3k Ω	
Isolation Method	Between input terminals and internal circuit: photocoupler isolated	Between input terminals: not isolated
Input Delay Time	OFF-ON:4ms ON-OFF:4ms	
Status LED	LED is lighting when input is ON	
Power Consumption	0.17W or less	0.27W or less
Mass	85g (0.19lb)	100g (0.2lb)

Output module

		EXM-DRA8RT	EXM-DRA16RT	EXM-DD08UT	EXM-DD08TT	EXM-DD016UK	EXM-DD016TK
		Output Specifications					
Output Points		8-point relay (a-connect)	16-point relay (a-connect)	8-point transistor (Sink)	8-point transistor (Source)	16-point transistor (Sink)	16-point transistor (Source)
Rated Output Voltage		-			DC24V		
External Connection		11-pin terminal connector	10-pin terminal connector	10-pin terminal connector		MIL connector	
Common Design		4points/1common		8points/1common		16points/1common	
Maximum Load Voltage	1 point	2A or less		0.3A or less		0.1A or less	
	1 common	7A or less 8A or less		3A or less		1A or less	
Maximum Load Voltage		0.1mA DCO.1V (reference value)			-		
Electrical Life		100,000 operations or more (rated resistive load 1,800 operations/h)			-		
Mechanical Life		20 million operations or more (no load 18,000operations/h)			-		
Isolation Method		-		Between output terminals and internal circuit: photocoupler isolated		Between output terminals: not isolated	
Output Delay Time	ON	6ms or less			300μs or less		
	OFF	10ms or less			300μs or less		
Voltage Leakage (When OFF)		-		0.1mA or less			
Status LED		LED is lighting when output is ON					
Power Consumption		1.16W or less	2.10W or less	0.55W or less		1.03W or less	
Mass		110g (0.24lb)	145g (0.32lb)	85g (0.19lb)		70g (0.15lb)	

Input/output mixed module

	EXM-DMM8DRT
Input Specifications	
Input Points	4points (sink/source type-dual use)
Rated Input Voltage	DC24V
Rated Input Current	7.3mA/DC24V
Input Impedance	3.3k Ω
Isolation Method	Between input terminals and internal circuit: photocoupler isolated Between input terminals: not isolated
Input Delay Time	OFF-ON:4ms ON-OFF:4ms
Output Specifications	
Output Points	4-point relay (a-connect)
Common Design	4points/1common
Maximum Load Current	Per Channel
	2A or less
Min. Open/Close Load	Per Common
	7A or less
Electrical Life	
100,000 operations or more (rated resistive load 1,800 operations/h)	
Mechanical Life	
20 million operations or more (no load 18,000operations/h)	
Output Delay Time	ON
	6ms or less
	OFF
	10ms or less
Common Specifications	
External Connection	11-pin terminal connector
Status LED	LED is lighting when input is ON
Power Consumption	0.65W or less
Mass	95g (0.21lb)

Analog module

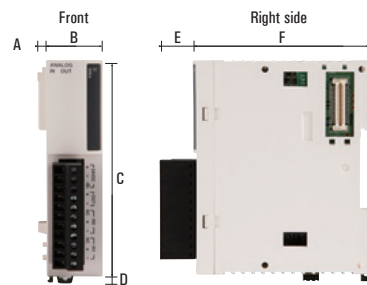
	EXM-AMI2HT	EXM-AMM3HT	EXM-ALM3LT	EXM-AMO1HT
Input Specifications				
Input Points	2points			-
External Connection	11-pin terminal connector			
Input Type	Single-ended(Voltage Input),Differential(Current Input)		Thermocouple, temperature Probes *1	-
Resolution	12bit			-
Input Value of LSB	2.5mV(voltage input), 4μA(current input)		0.15;C(Temperature Probes) *1	-
			Type K:0.325;C(Thermocouple)	
			Type J:0.300;C(Thermocouple)	
			Type T:0.100;C(Thermocouple)	
Input Impedance	1M½ min.(voltage input), 10%(current input)		1M½ or min.	-
Isolation Method	Photocoupler Isolation between input and internal circuit			-
Sampling Time	20ms or less			-
Maximum Error	± 1% of full scale			-
Output Specification				
Output Points	-	1point		
Rated Output Voltage Range	-	Voltage(0 to 10V), current(4 to 20mA)		
Resolution	-	12bits		
Output Value of LSB	-	2.5mV(voltage output), 4μA(current output)		
Output Impedance	-	2k½ or less (voltage output), 300½ or less (current output)		
Isolation Method	-	Photocoupler Isolation between output and internal circuit		
Total Output System Transfer Time	-	50ms + 1scan time	130ms + 1scan time	50ms + 1scan time
Maximum Error	-	± 1% of full scale		
Common Specifications				
External Connection	11-pin terminal connector			
Power Consumption	0.34W or less			
Mass	85g (0.19lb)			

*1 Pt100

External view and sizes of various parts

	A	B	C	D	E	F
EXM-DDI16DT	3.8 [0.15]	23.5 [0.93]	90 [3.54]	4.5 *2 [0.18]	14.6 [0.57]	70 [2.76]
EXM-DDI8DT						
EXM-DRA8RT						
EXM-DRA16RT						
EXM-DDO8UT						
EXM-DDO8TT						
EXM-DMM8DRT						
EXM-AMI2HT	17.6 [0.69]	17.6 [0.69]	90 [3.54]	4.5 *2 [0.18]	11.3 [0.44]	70 [2.76]
EXM-ALM3LT						
EXM-AMM3HT						
EXM-AMO1HT						
EXM-DDO16UK						
EXM-DDO16TK						

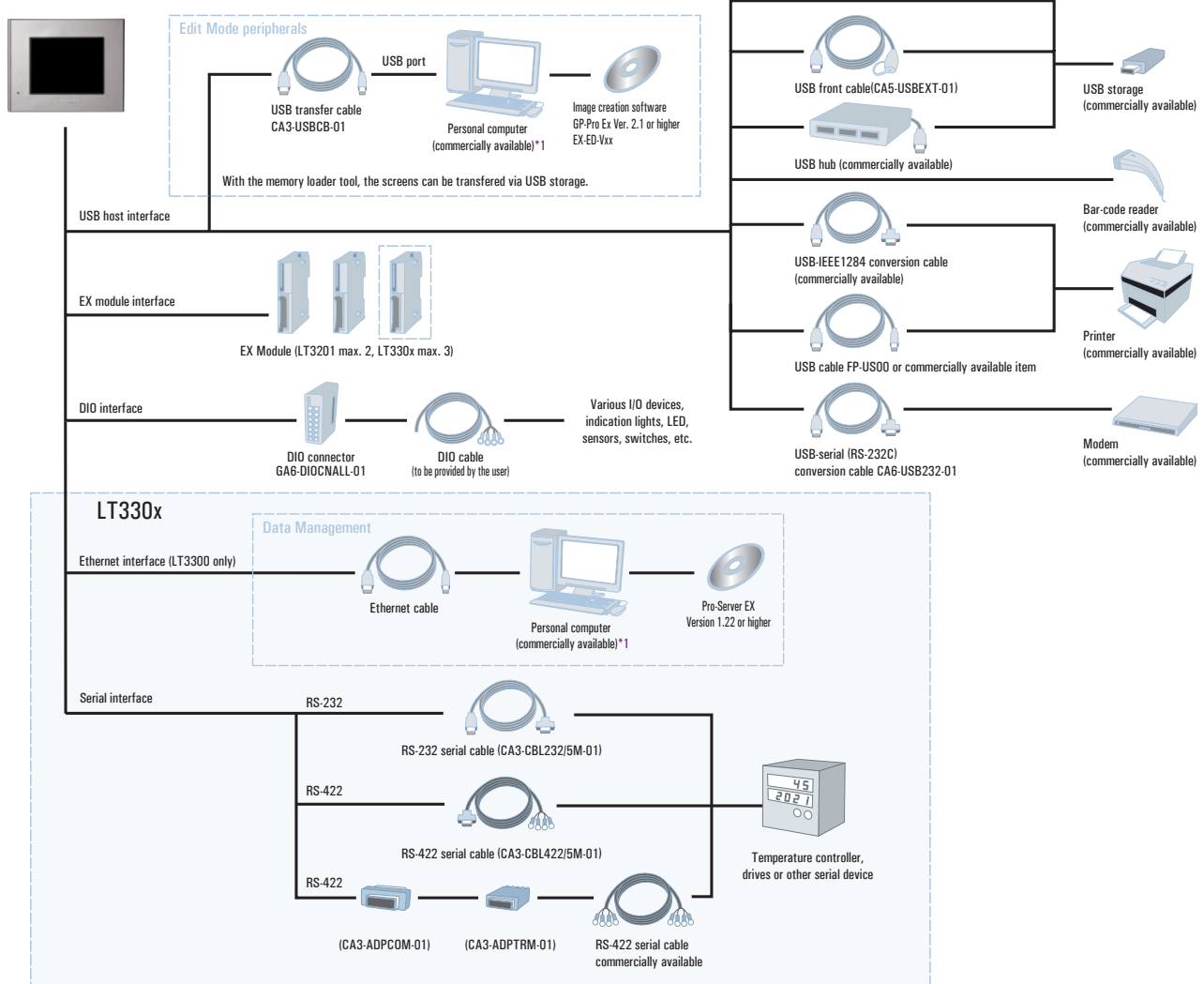
*2 The length of the pulled out hook is 8.5mm (0.33in.).



Unit: mm [in.]

LT3000 System Structure

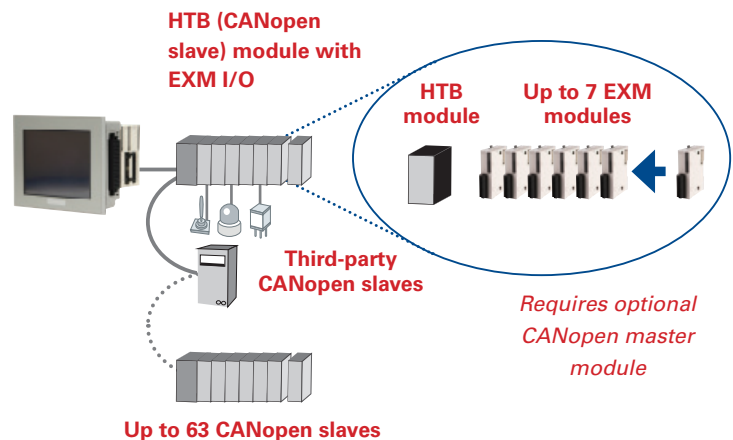
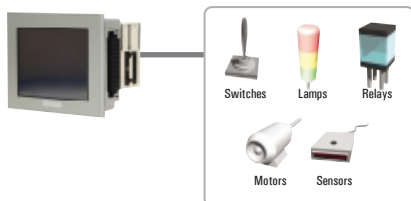
LT3000 System Structure



*1 Certain types and models of PCs cannot be used.

LT3000 I/O Options

**Use built-in and expansion I/O
or
CANopen I/O**



HMI Enterprise-Wide Software Solutions



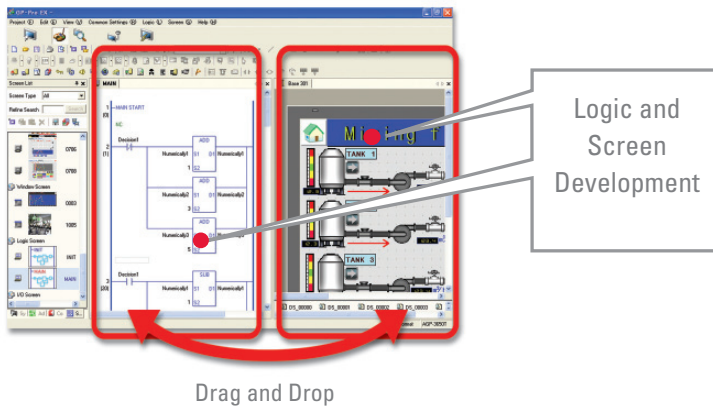
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GP-Pro EX

All-in-one HMI Development and Logic Editor

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- Simulation and test
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- Drag and drop between logic and screens
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One development package for all Pro-face HMIs

- LT3000 - Operator Interface Plus Control
- AGP3000 - Advanced Operator Interface
- AST3000 - Entry Level Operator Interface
- PS3000 with WinGP - Windows®-based on-demand HMI



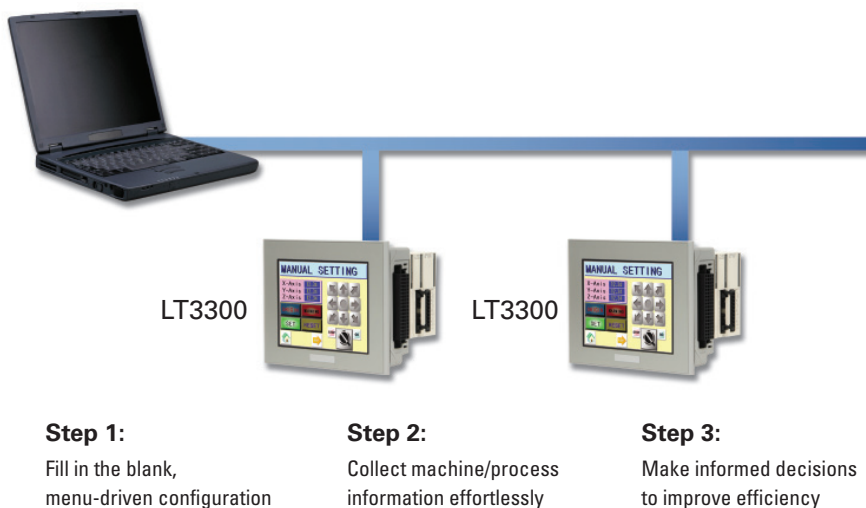
Data management software

Pro-Server EX

Information where you want it, when you want it

Real time reporting

- Productivity Reports
- Machine Efficiency (OEE)
- Product Quality
- Process Yield
- Maintenance Reports



Office Environment

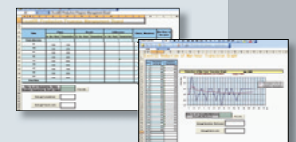
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- Access™/Excel®
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Server PC
Data management software
Pro-Server EX



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the Right Application**

Operator Interface Plus Control

- Combined operator interface and PLC logic control in one package
- Supported by one software package
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- Sleek, innovative styling
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Pro-face America

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Saline, MI 48176 USA
Tel: 734-429-4971 or
Toll Free: 800-289-9266
Fax: 734-429-1010
<http://www.profaceamerica.com>
E-mail: sales@profaceamerica.com

Customer Care Center:

Tel: 734-944-0482
Web Support: <http://support.profaceamerica.com>
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Global Head Office

Digital Electronics Corporation
Osaka JAPAN
Tel: +81 (0)6 6613 3116
Fax: +81 (0)6 6613 5888
<http://www.pro-face.com>
info@pro-face.com

China

Pro-face China International
Trading (Shanghai) Co., Ltd.
Shanghai P.R. CHINA
Tel: +86 (0)21 6361 5175
Fax: +86 (0)21 6361 5176
<http://www.proface.com.cn>
proface@proface.com.cn

South-East Asia Pacific

Pro-face South-East Asia Pacific
Co., Ltd.
13th Floor, Rungrojthanakul
Building 44/1,
Ratchadapisek Road
Huaykwang Sub-District,
Huaykwang District Bangkok
10310
THAILAND
Tel: +66 (0)2 617 5678
Fax: +66 (0)2 617 5688
<http://www.proface.co.th/>

South Korea

Pro-face Korea Co., Ltd.
Seoul SOUTH KOREA
Tel: +82 (0)2 2630 9850
Fax: +82 (0)2 2630 9860
<http://www.proface.co.kr>
proface@proface.co.kr

Taiwan

Pro-face Taiwan Co., Ltd.
Taipei TAIWAN
Tel: +886 (0)2 2657 1121
Fax: +886 (0)2 2657 1021
<http://www.proface.com.tw>
proface@proface.com.tw

Australia and New Zealand

Pro-face Australia Pty Ltd.
Melbourne AUSTRALIA
Tel: +61 (0)3 9550 7395
Fax: +61 (0)3 9550 7390
<http://www.pro-face.com.au>
<http://www.pro-face.co.nz>
pfau@pro-face.com

**North/South American
Head Office**

Pro-face America / Xycom
Saline, MI U.S.A.
Tel: +1 734 429 4971
Fax: +1 734 429 1010
<http://www.profaceamerica.com>
sales.info@profaceamerica.com

European Head Office

Pro-face Europe B.V.
Hoofddorp THE NETHERLANDS
Tel: +31 (0)23 55 44 099
Fax: +31 (0)23 55 44 090
<http://www.proface.com>
info@proface.com

France

Pro-face France S.A.S.
Mitry-Mory FRANCE
Tel: +33 (0)1 60 21 22 91
Fax: +33 (0)1 60 21 22 92
<http://www.proface.fr>
info@proface.fr

Germany

Pro-face Deutschland GmbH
Solingen GERMANY
Tel: +49 (0)212 258 260
Fax: +49 (0)212 258 2640
<http://www.pro-face.de>
sales@pro-face.de

Italy

Pro-face Italia S.p.a.
Bovisio Masciago (Milano) ITALY
Tel: +39 0362 59 96 1
Fax: +39 0362 59 96 69
<http://www.proface.it>
info@proface.it

Poland

Pro-face Europe B.V.
(Warsaw Office)
Warsaw POLAND
Tel/Fax: +48 (22) 465 66 62
<http://www.proface.pl>

Scandinavia

Pro-face Scandinavia ApS
Glostrup (Copenhagen)
DENMARK
Tel: +45 70 22 01 22
Fax: +45 70 22 01 33
<http://www.pro-face-eu.net>
info@pro-face.dk

Spain and Portugal

Pro-face España
Cardedeu (Barcelona) SPAIN
Tel: +34 (0)93 846 07 45
Fax: +34 (0)93 845 48 68
<http://www.pro-face.es>
central@pro-face.es

Sweden

Pro-face Sweden AB
Loddekoping (Malmo) SWEDEN
Tel: +46 46 540 90 70
Fax: +46 46 71 27 90
<http://www.pro-face-eu.net>
info@pro-face.se

Switzerland

Pro-face Deutschland GmbH
Regensdorf SWITZERLAND
Tel: +41 (0)43 343 7272
Fax: +41 (0)43 343 7279
<http://www.pro-face.ch>
info@pro-face.ch

United Kingdom

Pro-face UK Ltd
Coventry ENGLAND
Tel: +44 (0)2476 440088
Fax: +44 (0)2476 440099
<http://www.profaceuk.com>
info@profaceuk.com

To order, please contact:

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