

3 D

Considering the above, if the LT4000M and external equipment have different power supplies, please design your system with momentary power interruptions in mind.

Model Name Indication

PFXLM4 <u>B</u> 01 <u>D *</u>	*
(1) (2) (3)	(4)

	(1)	(2)	
В	Rear module	D	DC24V
	(2)		(4)
	(3)		(4)
D	Digital I/O	K	Sink Output Type

Display Specifications

			LT-4000M R	lear module
			DIO	AIO and DIO
Models			PFXLM4B01DDK : Sink Output Type PFXLM4B01DDC : Source Output Type	PFXLM4B01DAK : Sink Output Type PFXLM401DAC : Source Output Type
Virtua	Resolution	(pixels)	320 x 240	D (QVGA)
Lar	nguage Fon	ts *1	Japanese, ASCII, Chinese (Simplified), Ch	inese (Traditional), Korean, Cyrillic, Thai
Character sizes		zes	8 x 8, 8 x 16, 16 x 16 a	and 32 x 32 pixel fonts
	Font sizes	5	Width can be expanded 1 to 8 times. Heigh	ht can be expanded 1/2 and 1 to 8 times.
8 x 8 pixels		ls	40 characters pe	er row x 30 rows
8 x 16 pixels		ls	40 characters per row x 15 rows	
16 x 16 pixels		els	20 characters per row x 15 rows	
:	32 x 32 pix	els	10 characters pe	er row x 7 rows
	Application	n memory *2	FLASH EPR (includes screen editing program	
	Logic pro	ogram area	FLASH EPROM 132 KB *3 (e	equivalent to 15,000 steps)
Memory	For	it area	FLASH EPROM 8 MB (when limit exe	ceeded, uses application memory)
	Data	backup	nvSRAM 128 KB (rechargeable l	ithium battery for data backup)
	Varia	ble area	nvSRAM 64 KB (rechargeable lit	thium battery for data backup)
Touch	ouch Type		Resistive Fil	m (analog)
Panel	Lifetime 1 million touches or more		ches or more	
	Serial (COM1)		RS-232C/f RS-232C (Connector type: RJ45, Isolation: None, Maximu Maximum length: 15 m (49 ft), 5 Vd RS-485 (Connector type: RJ45, Isolation: None, Maximu Maximum length: 200 m (656 ft), Polarization: Setting is re the "GP-Pro EX Device/ PLC Manual" for the set	um baud rate: 115,200 bps, Cable Type: Shielded, Cable Ic power supply for RS-232C: None) m baud rate: 115,200 bps, Cable Type: Shielded, Cable equired via software when connecting Multiple LTS. Refer to
	CANopen (master)		CAN-CIA (ISO 11898-2:2002 Part 2), Connector: D-sub9 (plug)	
	Ethernet		IEEE802.3 compl (Connector type: RJ45, Driver: 10 M half duplex (auto nego Shielded, Automatic cro	otiation)/100 M full duplex (auto negotiation), Cable type:
Interface	USB (Type A)		USB 2.0 (T (Power Supply Voltage: 5Vdc +/-5%, Maximum Current Sup ft.	oplied: 500mA, Maximum Transmission Distance: 5m (16.4
	USB (mini B)		USB 2.0 (N	/ini-B) x 1
		DIO (Sink Type)	20 Points Standard Input (including 2 Points for Fast Input) 10 Points Standard Output, 2 Points for Fast Output	12 Points Standard Input (including 2 Points for Fast Input) 6 Points Standard Output , 2 Points Fast Output
	Control	DIO (Source Type)	20 Points Standard Input (including 2 Points for Fast Input) 10 Points Standard Output and 2 Points Fast Output	12 Points Standard Input (including 2 Points for Fast Input) 6 Points Standard Output and 2 Points Fast Output
		AIO	_	2 ch analog inputs (13-bit) and 2 ch analog inputs (16-bit) for Thermocouple 2 ch analog outputs (12-bit)

1: Please refer to the GP-Pro EX Reference Manual for details on font types and character codes.

*1: Please refer to the GP-Pro LX Reference manual for details on form types and character cours.
 *2: Capacity available for user application.
 *3: Up to 60,000 steps can be converted in software. However, this reduces application memory capacity (for screen data) by 1 MB.
 *4: 2-wire connection is available for RS-485. When a Device/PLC supports 2-wire connection, 4 wires (RXD+, TXD+, RXD-, and TXD-) can be short-circuited to be 2 wires (RXD+ and TXD + = D1, RXD- and TXD- = D0). For details on the connection, refer to the connection manual.

General Specifications

	LT-4000M Rear module	
	DIO	AIO and DIO
Supported Standards and Regulations	UL508 UL508 UL508 UL508 UL508 UL508 UL508 UL508 UL508 UL508	E 🕻 💩 💽
Rated Input Voltage	24 Vdc	
Input Voltage Limits	20 to 28.8 Vd	
Acceptable Voltage Drop	10 ms or less at 20.4 Vdc	
Power Consumption	10 W or less	13 W or less
In-Rush Current	30 A or less at 28.8 Vdc	
Voltage Endurance between power terminal and frame ground (FG)	500 Vdc for 1 minute	
Insulation Resistance between power terminal and FG	10 MΩ or higher at 500 Vdc	

Environmental Specifications

·		LT-4000M R	Rear module
		DIO	AIO and DIO
Standard compliance		IEC61	131-2
Ambient operating	Horizontal installation	0 to 50°C (32 to 122°F)	
temperature	Vertical installation	0 to 40°C (32 to 104°F)	
Storage	Storage temperature - 20 to 60°C (- 4 to 140°F)		(- 4 to 140°F)
Storage altitude 0 to 10,000 m (0 to 32,808 ft)		(0 to 32,808 ft)	
Operating altitude 0 to 2,000 m (0 to 6,560 ft)		(0 to 6,560 ft)	
Surroundir S	ng Air and torage Humidity	5 to 85% w/o condensation (non-condensing, v	wet bulb temperature 39°C (102.2°F) or less)
Degree of pollution	IEC60664	2	
Degree of protection	IEC61131-2	IP20 with protective covers in place	
Corro	osive gases	Free of corr	<u>v</u>
	Dust	≤0.1 mg/m ³ (10 ⁻⁷ oz/ft ³)	(non-conductive levels)
Atmospheric p (Operating Al		800 to 1,114 hPa (2000	0 m (6,561 ft) or lower)
Vibration resistance	Mounted on a DIN rail	3.5 mm (0.138 in.) fixed a 9.8 m/s² (1 gn) fixed accele	
Mechanical shock resistance	Mounted on a DIN rail	147 m/s ² (15 gn) for a duration of 11 ms	
Electrostatic discharge	IEC/EN61000-4-2	8 kV (air discharge) 6 kV (contact discharge)	
Radiated radio frequency electromagne tic fields	IEC/EN61000-4-3	10 V/m (80 MHz to 3 GHz)	
Fast transients / Burst noise	IEC/EN61000-4-4	Power lines: 2 kV Digital I/O: 1 kV Relay outputs: 2 kV Ethernet line: 1 kV COM line: 1 kV CAN line: 1 kV	
Surge immunity	IEC/EN61000-4-5	Power supply: CM: 1 kV; DM: 0.5 kV Digital I/O: CM: 1 kV; DM: 0.5 kV Shielded cable: 1 kV CM = line-earth	
Conducted disturbances induced by radio- frequency fields	IEC/EN61000-4-6	DM = line-line 10 Veff (0.15 to 80 MHz)	
Mains		150 to 500 kHz, qu	uasi peak 79 dBµV
terminal disturbance voltage	EN55011 (IEC/CISPR11)	150 to 500 kHz, quasi peak 79 dBµV 500 kHz to 30 MHz, quasi peak 73 dBµV	
Electric field			eak 10 m @40 dBµV/m
strength (IEC/CISPR11) 230 MHz to 1 GHz, quasi peak 10 n		peak 10 m @47 dBµV/m	
Vibration immunity (operating)		IEC61131-2	
Protection structure		NEMA TYPE 4X (indoors, with panel embedded)	
Protection		IP20 - (IEC60529)	
Shock immunity (operating)		IEC61131-2	15gn 11ms
Cooli	ing method	Natural air	circulation
	Weight	include Rear module installation adapter: 509g(17.96 oz) / only Rear module : 353g(12.46 oz)	include Rear module installation adapter : 544g (19.19 oz) / only Rear module : 388g (13.69 oz)
	Color	Rear module	e: RAL 7032
N			
Material		Rear module: PC/PBT	

Digital Input Characteristics

		LT-4000M Rear module	
Rated Current		5 mA	
Voltage		30 Vdc	
Inrush Values	Current	6.29 mA max.	
Input im	pedance	4.9 kΩ	
Input type		Sink/Source	
Rated	voltage	24 Vdc	
Maximum Allo	wable Voltage	28.8 Vdc	
	ON Voltage	15 Vdc or more (15 to 28.8 Vdc)	
Input limit	OFF Voltage	5 Vdc or less (0 to 5 Vdc)	
values	ON Current	2.5 mA or more	
	OFF Current	1.0 mA or less	
	Method	Photocoupler Isolation	
Isolation	Between internal logic	500 Vdc	
Filte	ering	0.5 ms x N (N is 0 to 63)	
IEC61131-2 @	edition 3 type	Туре 1	
Compatibility		Supports 2 wire and 3 wire sensors	
Cable type	and length	Shielded: Maximum 100 m (328 ft) Non-shielded: 50 m (164 ft)	
Terminal blocks		Type: 3.5 mm (0.137 in.) pitch Terminal blocks are removable	
Input pa	ralleling	No	

High Speed Counter Input Characteristics

Image: Section of the sectin of the section of the section		000. HOI H		
Rated Current Current 7.83 mA Inrush values Voltage 30 Vdc Input Impedance 3.0 Vdc 30 Vdc Input Impedance 3.2 kΩ 3.2 kΩ Input Impedance 3.2 kΩ 3.2 kΩ Input Impedance 3.2 kΩ 3.2 kΩ Maximum Allowable Voltage 2.4 Vdc Maximum Allowable Voltage 2.8 Vdc ON Voltage 5 Vdc or more ON Voltage 5 Vdc or less ON Current 5 mA or more OFF Current 1.5 mA or less Between 500 Vdc Filtering None, 4 µs, 40 µs Filtering None, 4 µs, 40 µs Compatibility Supports 2 wire and 3 wire sensors Cable Input input is the maximum frequency for Single-phase - 100 kHz is the maximum frequency for Single-phase - 100 kHz is the maximum frequency for 2-phase - 100 kHz is the maximum frequency for 2-phase - 2 Phase x2 - 2 Phase X - 2 Phase X - 2 Phase X - 2 Phase X - 2 Phase X Reverse - 2 Phase X Reverse <td></td> <td></td> <td>LT-4000M R</td> <td>lear module</td>			LT-4000M R	lear module
Current 7.83 mA Inrush values Qurrent 30 Vdc Input impedance 3.2 kQ Input impedance 3.2 kQ Rated ∪ tage 3.2 kQ Maximum Allowable Voltage 2.4 Vdc Maximum Allowable Voltage 2.8 Vdc Maximum Allowable Voltage 2.8 Vdc ON Current 5 Ma or more ON Current 5 Ma or more OFF Voltage 5 Vdc or less ON Current 5 mA or more OFF Current 1.5 m A or less Method Photo coupler Isolation Between 500 Vdc Filtering None, 4 Lts, 40 μs IEC61131-2 edition 3 type 500 Vdc Grompatibility Supports 2 wire and 3 wire sensors Cable Type IPype Supports 2 mark are removable Maximum 10 m (33 ft) Type: 3.5 mm (0.137 in) pitch Terminal blocks Type: 3.5 mm (0.137 in) pitch Phase Current - 100 kHz is the maximum frequency for Single-phase - 100 kHz is the maximum frequency for Single-phase - 2 Ph	Rated Current Voltage		24	Vdc
Inrush values Current 9.99 mA Input Impe dance 3.2 kQ Input type Sink/Source Rated voltage 24 Vdc Maximum Allowable Voltage 28.8 Vdc ON Outage 15 Vdc or more OFF Voltage 5 Vdc or less ON Current 5 mA or more OFF Current 1.5 mA or less Method Photo coupler Isolation Between channels logic 500 Vdc Filtering None, 4 µ5, 40 µ5 IEC61131-2 edition 3 type Type 1 Compatibility Supports 2 wire and 3 wire sensors Cable Type Maximum Iveruency 500 kHz is the maximum frequency for Single-phase · 100 kHz is the maximum frequency for 2-phase · 2 Phase x4 · 2 Phase x4 · 2 Phase x4 · 2 Phase x4 · 2 Phase x4 · 2 Phase x4 Reverse · 2 Phase x4 · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse	Rated Current	Current	7.83	mA
Input Impedance 9.99 mA Input Impedance 3.2 kΩ Input Impedance Sink/Source Rated voltage 24 Vdc Maximum Allowable Voltage 28.8 Vdc ON Voltage 15 Vdc or more ON Voltage 5 mA or more OFF Voltage 5 mA or more OFF Current 1.5 mA or less OFF Current 5.00 Vdc Isolation Between channels logic Isolation Rethod Photo coupler Isolation 500 Vdc Filtering None, 4 µs, 40 µs Cable Type Values None, 4 µs, 40 µs Icot in 3 type Type 1 Cable Type Imput Impu	Voltage		30	Vdc
Input type Sink/Source Rated voltage 24 Vdc Maximum Allowable Voltage 28.8 Vdc Input limit ON Voltage 15 Vdc or more ON Voltage 5 Vdc or less OF F Voltage 5 Vdc or less OFF Current 5 mA or more OFF Current 5 mA or more OFF Current 5 mA or less Method Photo coupler Isolation Between 500 Vdc channels logic 500 Vdc FIECe1131.2 edition 3 type Type 1 Compatibility Supports 2 wire and 3 wire sensors Cable Inguth Maximum 10 m (33 ft) Terminal blocks Type: 3.5 mm (0.137 in.) pitch Terminal blocks Terminal blocks are removable Maximum requency for 5.90 kHz is the maximum frequency for 5.90 kHz . 100 kHz is the maximum frequency for 2.phase · 100 kHz is the maximum frequency for 2.phase . 2 Phase x2 · 2 Phase x4 . 2 Phase x4 · 2 Phase x4 Reverse . 2 Phase x4 Reverse · 2 Phase x4 Reverse . 2 Phase x4 Reverse · 2 Phase x4 R	Current		9.99	mA
Rated voltage 24 Vdc Maximum Allowable Voltage 28.8 Vdc Input limit values OFF Voltage 15 Vdc or more OFF Voltage 5 Vdc or less ON Current 5 mA or more OFF Contrant 1.5 mA or more Isolation Between channels logic 500 Vdc Filtering None, 4 µS, 40 µS IEC61131-2 edition 3 type Type 1 Compatibility Supports 2 wire and a wire sensors Cable Irget Terminal blocks Type: 3.5 mm (0.137 in.) pitch Terminal blocks are removable Maximum Frequency -100 kHz is the maximum frequency for Single-phase - 0.100 kHz is the maximum frequency for 2-phase - 2 Phase x4 - 2 Phase x4 - 2 Phase x4 - 2 Phase x4 Reverse - 2 Phase x4 Reverse - 2 Phase x4 Reverse - 2 Phase x4 Reverse - 2 Phase x4 Reverse - 2 Phase x4 Reverse - 2 Phase x4 Reverse - 2 Phase x4 Reverse - 2 Phase x4 Reverse - 2 Phase x4 Reverse - 2 Phase x4 Reverse - 2 Phase x4 Reverse - 2 Phase x4 Reverse - 2 Phase	Input im			kΩ
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Input limit values ON Voltage 15 Vdc or more OFF Voltage 5 Vdc or less ON Current 5 Vdc or less ON F Current 5 MA or more OFF Current 1.5 mA or less Between chanels logic 500 Vdc Filtering None, 4 µs, 40 µs IEC61131-2 etition 3 type Type 1 Compatibility Supports 2 wire and 3 wire sensors Cable Type IEc61131-2 etition 3 type Supports 2 wire and 3 wire sensors Cable Type Variance Type: 3.5 mm (0.137 in.) pitch Terminal blocks are removable Maximum Frequency Single phase · 100 kHz is the maximum frequency for 2-phase · 2 Phase x2 · 2 Phase x2 · 2 Phase x4 · 2 Phase x4 · 2 Phase x4 Reverse · 2 Phase x4 Reverse <td< td=""><td colspan="2"></td><td></td><td></td></td<>				
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valuesON Current5 mA or moreOFF Current0FF CurrentMethodPhoto coupler IsolationIsolationBetween channels logicFilteriryNone, 4 µs, 40 µsIEC61131-2 etiton 3 typeOVcIEC61131-2Type 1CableTypeTypeSupports 2 wire and 3 wire sensorsCableLengthLengthMaximum 10 m (33 ft)Terminal blocksType: 3.5 mm (0.137 in.) pitch Terminal blocks are removableAmaximum Frequency-100 kHz is the maximum frequency for Single-phase - 50 kHz is the maximum frequency for Single-phase - 50 kHz is the maximum frequency for Single-phase - 50 kHz is the maximum frequency for Single-phase - 2 Phase x2Phase CourterirMarkerMarkerSingle phase - 2 Phase x4 - 2 Phase x4 Reverse - 2 Phase x4 Reverse - 2 Phase x4 ReversePreload1 msPreload1 ms		v		
Off Current 0.1.m or less Isolation Method Photo coupler Isolation Isolation Between 500 Vdc Filtering None, 4 µs, 40 µs IEC61131-2 edition 3 type Type 1 Computibility Supports 2 wire and 3 wire sensors Computation Supports 2 wire and 3 wire sensors Cable Iength Maximum 10 m (33 ft) Type: 3.5 mm (0.137 in.) pitch Terminal blocks Terminal blocks are removable Maximum trequency · 100 kHz is the maximum frequency for Single-phase · 50 kHz is the maximum frequency for 2-phase · 100 kHz is the maximum frequency for 2-phase Phase Counting Mode · 2 Phase x4 · 2 Phase x4 · 2 Phase x4 · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse <td< td=""><td></td><td></td><td colspan="2"></td></td<>				
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Isolation Between channels logic 500 Vdc Filt=rist None, 4 µs, 40 µs IEC6113-2 edition 3 type None, 4 µs, 40 µs Compatibility Supports 2 wire and 3 wire sensors Compatibility Supports 2 sensors Compatibility Supports 2 sensors Compatibility Supports 2 sensors Compatibility Supports 2 sensors Terminal blocks Treminal blocks are removable · 100 kHz is the maximum frequency for 2-phase · 50 kHz is the maximum frequency for 2-phase · 100 kHz is the maximum frequency for 2-phase · Single phase · 2 Phase x2 · 2 Phase x2 · 2 Phase x2 Reverse · 2 Phase x4 · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x5 Obs 1 ms				
channels logic 500 Vdc None, 4 µs, 40 µs IEC61131-2 edition 3 type Ocenarization of type Comparization of type Cable Type Supports 2 wire and 3 wire sensors Cable Type Cable Type Cable Type Terminal blocks are removable Terminal blocks are removable Other Kating Mode Naximum Frequency for Single-phase Single phase Single phase Single phase Single phase Single phase x2 Phase x4 Reverse Phase x4 Reverse Surphroniza			Photo coupl	er Isolation
Type 1 Type 1 Compatibility Supports 2 wire and 3 wire sensors Shielded Cable Type Length Maximum 10 m (33 ft) Terminal blocks Terminal blocks Maximum frequency Maximum frequency Maximum frequency Phase Count Marker Phase x2 Reverse Amage dolspan="2">Amage dolspan="2">Amage dolspan="2">Amage dolspan="2">Amage dolspan="2">Amage dolspan="2">Amage dolspan="2">Amage dolspan="2">Type 1 Response time Marker Image dolspan="2">Marker Image dolspan="2">Marker Image dolspan="2">Surphone in dolspan="2">Image dolspan="2" Surphroniza	Isolation		500	Vdc
Competibility Supports 2 wire and 3 wire sensors Type Type Cable Type Length Maximum 10 m (33 ft) Terminal blocks Type: 3.5 mm (0.137 in.) pitch Terminal blocks are removable Maximum Frequency · 100 kHz is the maximum frequency for Single-phase · 50 kHz is the maximum frequency for 2-phase · 50 kHz is the maximum frequency for 2-phase · Duty Rate: 45 to 55% Phase Counting Mode · Single phase · 2 Phase x4 Marker 1 ms Preload 1 ms Preload 1 ms Support za 1 ms	Filte	ring	None, 4	us, 40 μs
Type Shielded Length Maximum 10 m (33 ft) Terminal blocks Type: 3.5 mm (0.137 in.) pitch Terminal blocks are removable Maximum Frequency · 100 kHz is the maximum frequency for Single-phase · 50 kHz is the maximum frequency for 2-phase · Duty Rate: 45 to 55% Phase Counting Mode · Single phase · 2 Phase x2 Marker · 2 Phase x4 · 2 Phase x4 Reverse · 2 Phase x4 Reverse Preload 1 ms Prestrobet 1 ms Surperstroited 1 ms	IEC61131-2 edition 3 type		Тур	be 1
Cable Length Maximum 10 m (33 ft) Terminal blocks Type: 3.5 mm (0.137 in.) pitch Terminal blocks are removable Maximum Fequency · 100 kHz is the maximum frequency for 2-phase · 50 kHz is the maximum frequency for 2-phase · 50 kHz is the maximum frequency for 2-phase Phase Counting Mode · 2 Phase x2 Warker · 2 Phase x4 · 2 Phase x4 Reverse	Compa	tibility	Supports 2 wire a	nd 3 wire sensors
Length Maximum 10 m (33 ft) Type: 3.5 mm (0.137 in.) pitch Terminal blocks are removable Maximum Frequency 50* Single-phase Maximum frequency for Single-phase Maximum frequency for 2-phase Single phase 2 Phase x2 Phase Course Marker 1 ms Prestrobet Prestrobet 1 ms Surphroniza	Cable	Туре	Shie	Ided
Iterminal blocks Terminal blocks are removable Maximum frequency · 100 kHz is the maximum frequency for Single-phase · 50 kHz is the maximum frequency for 2-phase · 50 kHz is the maximum frequency for 2-phase · 100 kHz is the maximum frequency for 2-phase · 50 kHz is the maximum frequency for 2-phase · 100 kHz is the maximum frequency for 2-phase · 50 kHz is the maximum frequency for 2-phase · 100 kHz is the maximum frequency for 2-phase · 50 kHz · 2 Phase x2 · 2 Phase x2 · 2 Phase x2 · 2 Phase x4 · 2 Phase x2 Reverse · 2 Phase x2 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse · 2 Phase x4 Reverse	Cable	Length		
Maximum frequency 50 kHz is the maximum frequency for 2-phase Duty Rate: 45 to 55% Duty Rate: 45 to 55% Phase Counting Mode Single phase Marker 2 Phase x2 Marker 1 ms Prestrobet 1 ms Synchroniza	Termina			
Phase Courting Mode - Single phase - 2 Phase x2 - 2 Phase x4 - 2 Phase x4 - 2 Phase x2 Reverse - 2 Phase x4 Reverse	Maximum frequency		 50 kHz is the maximum 	n frequency for 2-phase
Preload 1 ms Prestrobet 1 ms Synchronize 1	Phase Counting Mode		· 2 Pha · 2 Pha · 2 Phase >	ise x2 ise x4 i2 Reverse
Response time Prestrobet 1 ms		Marker	1 r	ns
Synchronize		Preload	1 r	ns
Synchronize	Response time	Prestrobet	1 r	ns
output 2 ms		Synchronize output	2 r	ns
Min. Pulse Width(Pulse input) Counter: Pulse Catch Input signal ON width	Min. Pulse Width(Pulse input)		10 µs	Input signal ON width
Input paralleling No	Input paralleling		No	

Transistor Output Characteristics

		LT-4000M Rear module	
Rated Voltage		24Vdc	
Output range		19.2 to 28.8 Vdc	
Output type		Sink/Source	
Rated	current	DIO: 0.3 A/point, 3.0 A/common AIO and DIO: 0.3 A/point, 1.8 A/common	
Residua	lvoltage	1.5 Vdc or less for I= 0.1A	
Delay		Off to on (0.3 A load): 1.1ms On to off (0.3 A load): 2ms	
NOTE: The		NOTE: The delay is not including the cable delay.	
	Method	Photocoupler Isolation	
Isolation	Between internal logic	500 Vdc	
Minimum re	esistor load	80 Ω at 24 Vdc	
Cable length		Non-shielded: 150 m (492 ft)	
Protection against short circuit		No	
Terminal blocks		Type: 3.5 mm (0.137 in.) pitch Terminal blocks are removable	

NOTE: Refer to LT4201TM/4301TM Hardware Manual about Protecting Outputs from Inductive Load Damage for additional information on this topic.

Pulse Output/PWM Output/High-speed Counter (Synchronize Output) Characteristics

	LT-4000M Rear module		Rear module
Output type		Sink/Source	
Rated voltage		24 Vdc	
Power supply	input range	19.2 to 28.8 Vdc	
Power supply rev	verse protection	Yes	
Pulse Output/PWM output current		50 mA/point, 100 mA/common	
Response time for original input		2 r	ms
Between fast outputs and internal logic 10 MΩ or more		or more	
Isolation resistance Between power supply port and protective earth ground (PE) = 500 Vdc 10 MΩ or more		or more	
Residual voltage	for I = 0, 1 A	1.5 Vdc or less	
		Off to on (50 m	nA load): 1.1ms
De	Delay On to off (50 mA load): 1.1ms		nA load): 1.1ms
NOTE: The delay is not including the cable delay.		ncluding the cable delay.	
Minimum load impedance 80 Ω) Ω	
Maximum Pulse o	utput frequency	50	KHz
Maximum Pulse o	utput frequency	65	kHz
	Frequency	Accuracy	Duty
A Dulas	10~100Hz	0.1%	0 to 100%
Accuracy Pulse Output/ PWM	101~1000Hz	1%	1 to 99%
Output	1.001~20kHz	5%	5 to 95%
	20.001~45kHz	10%	10 to 90%
	45.001~65kHz	15%	15 to 85%
Duty rate range 1 to 99%			
Cable	Туре	Shielded, including 24 Vdc power supply	
Cable	Length	Maximum	5 m (16 ft)
Terminal blocks Type: 3.5 mm (0.137 in.) pitch Terminal blocks are removable			

NOTE: When using the acceleration/deceleration pulse output, there is a 1% maximum error for the frequency.

Analog Input Characteristics

LT-4000M Rear module		lear module	
		AIO and DIO	
Charact	eristics	Voltage input	Current input
Number of ma	aximum input	2	2
Input type		Single-ended	
· · · · ·	Input range -10 to 10 Vdc/0 to 10 Vdc 0 to 20 mA/4 to 20 mA		
Input im		1 M Ω or more 250 \pm 0.11% Ω	
Sample du	ration time	10 ms per chann	
Total input syste		20 ms + 1	scan time
Input tolerance	Maximum deviation at 25°C (77°F) without electromagnetic disturbance	± 1% of th	e full scale
Maximum deviation ± 2.5% of the full scale		he full scale	
Digital resolution 13 bits		pits	
Temperature drift ± 0.06% of the full scale			
Common mode		80	
Cross		60	
Non-linearity ± 0.4% of full scale			
Input valu	ue of LSB	5 mV	10 µA
Maximum allowed overload (no damages)		± 30 Vdc (less than 5 minutes) ± 15 Vdc (No damage)	± 30 mA dc
Protection type		Photo coupler between input and internal circuit	
Cable Type		Shielded	
Cable	Length	Must be less than 3 m for IEC61131-2 conformance. Maximum transmission distance is 10m.	
Terminal blocks Type: 3.5 mm (0.137 in.) pitch Terminal blocks are removable			
	External input	Photo-coupl	lerisolation
Isolation	Between channels	Non-isolated	

Temperature Input (Temperature Probes) Characteristics

	· · ·	-
		LT-4000M Rear module
		AIO and DIO
Input ser	isor type	Pt100/Pt1000/Ni100/Ni1000
Input temper	rature range	Pt100/Pt1000: -200 to 600°C (-328 to 1112°F) Ni100/Ni1000: -20 to 200°C (-4 to 392°F)
Measuring Pt100/Ni100 1.12 mA ± 3.5%		
current	Pt1000/Ni1000	$0.242 \ \mu A \ \pm \ 3.5\%.$
Input im	pedance	Typically 10 MΩ
Sample du	ration time	10 ms+1 cycle time
Wiring	g type	2-wire or 3-wire connection configured by software for all inputs
Conversi	on mode	Sigma delta type
Input	filter	Low pass
Resolution tem	perature value	0.1°C (0.18°F)
Detecti	on type	Open circuit (detection on each channel)
Input tolerance *1	Maximum deviation at 25°C (77°F) without electromagnetic disturbance	± 5°C (41°F)
	Maximum deviation at 25 to 50°C (77 to 122°F)	Pt type: ± 5.6°C (42.08°F) Ni type: ± 5.2°C (41.36°F)
Tempera	ture drift	30 ppm/°C
Digital re	solution	16 bits
Rejection in differential mode	50/60 Hz	Typically 60 dB
Common mode rejection	Typically 80 dB	
Isolation Method		Photocoupler Isolation
Permitted in	nput signal	± 5 Vdc max.
Cable length	Pt100/Ni100	200以下
cable length	Pt1000/Ni1000	200Ω以下
Termina	Iblocks	Type: 3.5 mm (0.137 in.) pitch Terminal blocks are removable
Noise resista	ance - cable	Shielded cable is necessary
* 1: Excluding errors c	aused by the wiring	

* 1: Excluding errors caused by the wiring

Temperature Input (Thermocouple) Characteristics

		LT-4000M Rear module
		AIO and DIO
Input sensor type		Thermocouple
Input type	range *1	$ \begin{array}{c} J \ (-200 \ to \ 760^\circ C) \ (-328 \ to \ 1400^\circ F) \\ K \ (-240 \ to \ 1370^\circ C) \ (-400 \ to \ 2498^\circ F) \\ R \ (0 \ to \ 1600^\circ C) \ (32 \ to \ 2912^\circ F) \\ B \ (200 \ to \ 1800^\circ C) \ (32 \ to \ 2912^\circ F) \\ S \ (0^\circ C \ to \ 1600^\circ C) \ (32 \ to \ 2912^\circ F) \\ T \ (-200 \ to \ 400^\circ C) \ (-328 \ to \ 752^\circ F) \\ E \ (-200 \ to \ 900^\circ C) \ (-328 \ to \ 152^\circ F) \\ N \ (-200 \ to \ 1300^\circ C) \ (-328 \ to \ 2372^\circ F) \end{array} $
Input im		Typically 10 MΩ
Sample dur		10 ms+1 cycle time
Conversi		Sigma delta type
Digital re		16 bits
Input		Low pass
Resolution tem		0.1°C (0.18°F) (Type J)
Detectio		Open circuit (detection on each channel)
Input tolerance	Maximum deviation at 25°C (77°F) without electromagnetic disturbance	0.2 % of the full scale, plus standard point of compensation precision at +/- 6° C.
	Maximum deviation	0.28 % of full scale range
Temperat	ture drift	30 ppm/°C
Input toleran tempe comper	rature	± 5°C (41°F) after 10 min.
Cold junction con temperature ra (122	nge (0 to 50°C	Internal cold junction error: +/- 6°C (42.8°F) after operating 45 minutes.
Rejection in differential mode	50/60Hz	Typically 60 dB
Common mode rejection		Typically 80 dB
Isolation Method		Photocoupler Isolation
Permitted input signal		± 5 Vdc max.
Warm u	p time	45 minutes
Terminal blocks		Type: 3.5 mm (0.137 in.) pitch Terminal blocks are removable
Noise resista	ance - cable	Shielded cable is necessary

*1: Temperature measurement on PCB at terminal block for cold junction compensation.

Analog Output Characteristics

		LT-4000M Rear module	
		AIO and DIO	
Characteristics		Voltage Output	Current Output
Maximum number of outputs		2	
Output range		-10 to 10 Vdc/0 to 10 Vdc	0 to 20 mA / 4 to 20 mA
Load impedance		2 kΩ or more	300 Ω or more
Application load type		Resistive load	
Setting time		10 ms	
Total output system transfer time		10 ms + 1 scan time	
Input tolerance	Maximum deviation at 25°C (77°F) without electromagnetic disturbance	± 1% of the full scale	
	Maximum deviation	± 2.5% of the full scale	
Digital resolution		12 bits	
Temperature drift		± 0.06% of the full scale	
Output ripple		±50mV	
Cross talk		60 db	
Non-linearity		± 0.5% of full scale	
Output value of LSB		6 mV	12 µA
Protection type		Photo coupler between input and internal circuit	
Output protection		Short circuit protection: Yes Open circuit protection: Yes	
Output behavior if input power supply is less than the power failed threshold		Set to 0	
Cable	Туре	Shielded	
	Length	Must be less than 3 m for IEC61131-2 conformance. Maximum transmission distance is 10m.	
Terminal blocks		Type: 3.5 mm (0.137 in.) pitch Terminal blocks are removable	
Isolation	External input	Photo-coupler isolation	
	Between channels	Non-isolated	

External Dimensions

