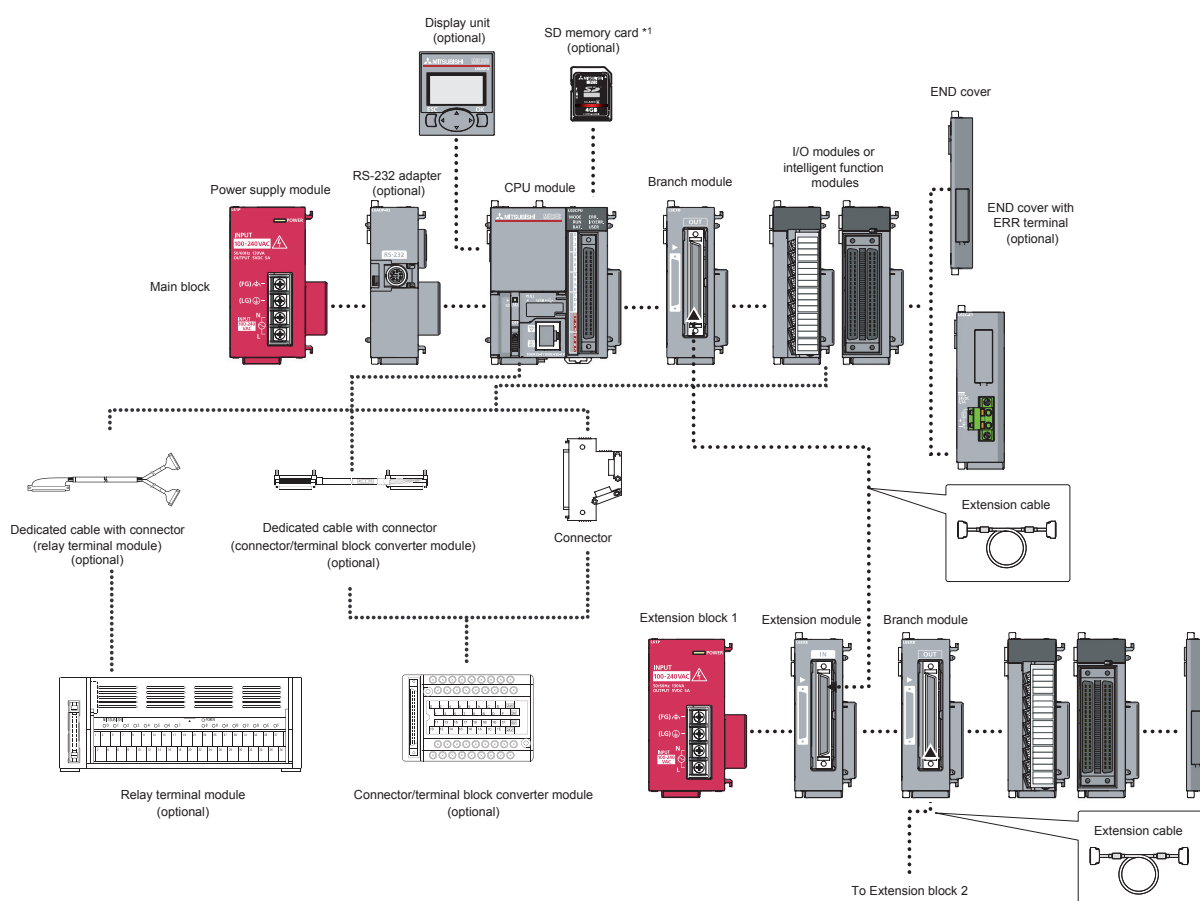


L Series Programmable Controllers

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L Series System Configuration



L Series CPU Modules

Key Features:

- Flexible rack-free modular design
- All-in-one CPU with built-in Ethernet, and positioning I/O functions
- Up to 260K Step memory
- As low as 9.5ns instruction processing
- 24 points of built-in I/O
- Built-in data logging capabilities
- Commonly available SD/SDHC memory media
- Expansion capabilities for I/O, Analog, Communication, and Motion/Positioning
- Integration into iQ Works and GX Works2 next generation software

CPU Specifications

Model Number		L02CPU • L02CPU-P	L06CPU • L06CPU-P	L26CPU • L26CPU-P	L26CPU-BT • L26CPU-PBT
Stocked Item		S	S	S	S
Certification		UL • cUL • CE	UL • cUL • CE	UL • cUL • CE	UL • cUL • CE
Processing Speed	LD Instruction	40ns	9.5ns		
	MOV Instruction	80ns	19ns		
Program Capacity		20k steps	60k steps	260k steps	
Memory Capacity	Program Memory (Drive 0)	80 kB	240 kB	1040 kB	
	Standard RAM (Drive 3)	128 kB	768 kB	768 kB	
	Standard RAM (Drive 4)	512 kB	1024 kB	2048 kB	
Maximum Number of Files	Program Memory	64 programs	124 programs	252 programs	
	Standard RAM	4 files (file register file, local device file, sampling trace file, and module error collection file)			
	Standard ROM	128 files	256 files	256 files	
Memory Card Type		SD/SDHC			
Max. Number of Intelligent Function Module Parameter Settings	Initial Setting	2048	4096	4096	
	Refresh	1024	2048	2048	
5VDC Internal Current Consumption	With Display Module	1.00A	1.06A	1.06A	1.43A
	Without Display Module	0.94A	1.00A	1.00A	1.37A
Max. I/O Device Points		8192 points (X/Y0 to X/Y1FFF)			
Max. Physical I/O Points		1024 points (X/Y0 to X/Y3FF)	4096 points (X/Y0 to X/YFFF)		
Built-in CC-Link		No	No	No	Yes
Weight (kg)		0.37			0.47
Dimensions (W x H x D) mm		70 x 90 x 95			98.5 x 90 x 95

CPU Built-In Input Specifications

Standard Input	Number of Input Points	10 points
	Rated Input Voltage	24VDC (+20%/-15%, ripple ratio within 5%)
	Rated Input Current	4.1mA TYP. (at 24VDC)
	Minimum Input Response Speed	100µs
	Input Response Time Setting	0.1ms/1ms/5ms/10ms/20ms/70ms
High-Speed Input	Number of Input Points	6 points
	Rated Input Voltage	24V input: 24VDC (+20%/-15%, ripple ratio within 5%) Differential input: EIA Standard RS-422-A differential type line driver level
	Rated Input Current	24V input: 6.0mA TYP. (at 24VDC) Differential input: EIA Standard RS-422-A differential type line driver level
	Minimum Input Response Speed	10µs
	Input Response Time Setting	0.01ms/0.1ms/0.2ms/0.4ms/0.6ms/1ms

CPU Built-In Output Specifications

Model Number		L02CPU • L06CPU	L26CPU • L26CPU-BT	L02CPU-P • L06CPU-P	L26CPU-P • L26CPU-P
Output Type		Sink Transistor		Source Transistor	
Number of Output Points		8 points			
Rated Load Voltage		5 to 24VDC 0.1A			
Response Time	OFF – ON	1μs or less (rated load, resistive load)			
	ON – OFF	1μs or less (rated load, resistive load)			

CPU Built-In I/O – Positioning Function Specifications

Number of Control Axes			2 axes
Control Unit			Pulse
Positioning Control	Positioning Control Method	PTP Control (*1)	INC system, ABS system
		Speed-Position Switching Control	INC system
	Positioning Control Range	PTP Control (*1)	-2147483648 to 2147483647 pulse
		Speed-Position Switching Control	0 to 2147483647 pulse
	Speed Command		0 to 200kpulse/s
	Acceleration/Deceleration System Selection		Automatic trapezoidal acceleration/deceleration and S-pattern acceleration/deceleration
Acceleration/Deceleration Time		0 to 32767ms	
Starting Time (1-Axis Linear Control)			Trapezoidal acceleration/deceleration (1-axis start): 30μs/axis S-pattern acceleration/deceleration (1-axis start): 35μs/axis
Command Pulse Output	Pulse Output Method		Open collector output (5 to 24VDC), sink or source logic
	Maximum Output Speed		200kpulse/s
	Maximum Connection Distance from Drive Unit		2m
External Input	Zero Signal		24VDC 6mA Equivalent with differential driver 20mA
	Speed-Position Switching Signal		DC24V 4.1mA
	Near-Point Dog Signal		
	Upper and Lower Limit Signal		
	Drive Unit READY Signal		
	Minimum Input Response Time		Zero signal: 10μs Speed-position switching signal, near-point dog signal: 100μs Upper and lower limit signal, drive unit READY signal: 2ms
External Output	Deviation Counter Clear Signal		ADY signal: 2ms External output; Deviation counter clear signal, sink or source logic
	Response Time	OFF – ON	1μs or less (rated load, resistive load)
ON – OFF			

Note 1: The abbreviation for Point To Point, referring to position control.

CPU Built-In I/O – High Speed Counter Specifications

Number of Channels			2ch
Count Input Signal	Phase		1-phase input (multiple of 1/2), CW/CCW, 2-phase input (multiple of 1/2/4)
	Signal Level	24V Input	24VDC 6mA
		Differential Input	EIA Standard RS-422-A differential type line driver level (Equivalent with AM26LS31 (manufactured by Texas Instruments Japan Limited))
Counter	Maximum Counting Speed		200kpulse/s (1-phase multiple of 2, 2-phase multiple of 4)
	Counting Range		Binary with 32-bit code (-2147483648 to 2147483647)
	Type		UP/DOWN preset counter (+ ring counter function)
	Minimum Count Pulse Width (Duty Ratio 50%)	Phase 1	5μs
		Phase 2	10μs
	Minimum Phase Differential for 2-Phase Input		5μs
Coincidence Output	Comparison Range		Binary with 32-bit code (-2147483648 to 2147483647)
	Comparison Result		Set value < Count value; Set value = Count value; Set value > Count value
External Input	Phase Z (Preset)	24V Input	Open collector; 24VDC 6mA
		Differential Input	EIA Standard RS-422-A differential type line driver level (Equivalent with AM26LS31 (manufactured by Texas Instruments Japan Limited))
	Function Start		24VDC 4.1mA
	Latch		
	Minimum Input Response Time		Phase Z: 10μs Function start, latch: 100μs
External Output	Comparison Output		2 points/ch
	Output Voltage/Current		5 to 24VDC 0.1A
	Output Response Time	OFF – ON	1μs or less (rated load, resistive load)
		ON – OFF	
PWM Output	Output Frequency Range		DC to 200kHz
	Minimum ON Width		1μs
	Duty Ratio		ON time can be set in increments of 0.1μs.
Pulse Width Measurement	Measurement Item		Pulse width (ON width: 200μs or more, OFF width: 200μs or more)
	Measurement Resolution		5μs
	Measurement Points		1 point/ch

CPU Built-In Ethernet Port Specifications

Transmission Specification	Data Transfer Speed		100/10Mbps
	Communication Mode		Full-duplex/Half-duplex
	Transmission Method		Base band
	Maximum Distance Between Hub and Node		100m
	Maximum Number of Connectable Nodes	10BASE-T	Maximum of cascading hub connections
		100BASE-TX	Maximum of 2 cascading hub connections
Number of Connections	TCP/IP		Total of 16 for socket communications, MELSOFT connections, and MC protocol (*1). One for FTP
	UDP/IP		
Cable to Use (*2)	For 10BASE-T Connection		Cables compliant to Ethernet standards, category 3 or higher (STP/UTP cables) (*3)
	For 100BASE-TX Connection		Cables compliant to Ethernet standards, category 5 or higher (STP cables)

- Notes:
- Only 3E frames may be used.
 - Straight through cable. Also, CPU is connected directly with a GOT, a cross cable may be used.
 - The use of STP (Shielded Twisted Pair) cables is recommended in noisy environments.

Power Supplies

Model Number	L61P (*1)	L63P	L63SP
Stocked Item	S	S	S
Certification	UL • cUL • CE		
Input Power Supply	100 to 240 VAC (-15% to +10%)	24 VDC (-35% to +30%)	24 VDC (-35% to +30%)
AC Supply Frequency	50/60Hz (-5% to +5%)	-	-
AC Supply Voltage Distortion Factor	Within 5%	-	-
Maximum Input Apparent Power	130 VA	-	-
Maximum Input Power	-	45W	45W
Inrush Current	≤8ms @ 20A	≤1ms @ 100A (for 24 VDC input)	100A within 1ms (24 VDC input)
Rated Output Current (5VDC)	5A		
Allowable Momentary Power Failure Time	10ms	10ms (24 DC input)	Within 10ms (24 VDC input)
Weight (kg)	0.32	0.29	0.19
Dimensions (W x H x D) mm	45 x 90 x 95		29 x 90 x 95

Note 1: AC Power Supply included in CPU sets; L02CPU-SET, L06CPU-SET, L26CPU-SET, and L26CPU-BT-SET

Digital I/O Modules

AC / DC Input Module

Model Number	LX10	LX28	LX40C6	LX41C4	LX42C4
Stocked Item	S	S	S	S	S
Certification	UL • cUL • CE				
Number of Input Points	16 points	8 points	16 points	32 points	64 points
Rated Input Voltage	100 to 120VAC (+10%/-15%), 50/60Hz (±3Hz)	100 to 240VAC (+10%/-15%), 50/60Hz (±3Hz)	24VDC (+20/-15%, ripple ratio within 5%)		
Rated Input Current	8.2mA (100VAC, 60Hz), 6.8mA (100VAC, 50Hz)	16.4mA (200VAC, 60Hz), 13.7mA (200VAC, 50Hz), 8.2mA (100VAC, 60Hz), 6.8mA (100VAC, 50Hz)	6.0mA TYP. (at 24VDC input)	4.0mA TYP. (at 24VDC input)	4.0mA TYP. (at 24VDC input)
Response Time	OFF – ON	15ms or less (100VAC 50Hz, 60Hz)	15ms or less (100VAC 50Hz, 60Hz)10ms or less (200VAC 50Hz, 60Hz)	1ms/5ms/10ms/20ms/70ms (Initial setting is 10ms.)	
	ON – OFF	20ms or less (100VAC 50Hz, 60Hz)	20ms or less (100/200VAC 50Hz, 60Hz)		
Common Terminal Arrangement	16 points/common (common terminal: TB17)	8 points/common (common terminal: TB17)	16 points, 1 common	32 points, 1 common	32 points, 1 common
Number of Occupied I/O Points	16 points (I/O assignment: input 16 points)		16 points (I/O assignment: 16 input points)	32 points (I/O assignment: 32 input points)	64 points (I/O assignment: 64 input point)
External Connections	18-point screw terminal block (M3 × 6 screw)		18-point terminal block	40-pin connector	40-pin connector x 2
5VDC Internal Current Consumption	90mA (TYP. all points ON)	80mA (TYP. all points ON)	90mA (TYP. all points ON)	100mA (TYP. all points ON)	120mA (TYP. all points ON)
Weight (kg)	0.17	0.15	0.15	0.11	0.12
Dimensions (W x H x D) mm	28.5 x 90 x 117			28.5 x 90 x 95	

Digital Output Module Specifications (Relay and Triac)

Model Number	LY10R2 (Relay)	LY20S6 (Triac)	LY18R2A (Isolated Relay)	LY28S1A (Isolated Triac)
Stocked Item	S	S	S	S
Certification	UL • cUL • CE			
Number of Output Points	16 points		8 points	
Maximum Load Voltage	24VDC / 240VAC	264VAC	264VAC 125VDC	264VAC
Maximum Load Current	2A/point, 8A/common	0.6A/point, 4.8A/common	2A/point	1A/point, 8A/module
Protection Function	Surge Suppressor	-	-	CR absorber
	Fuse	-	-	-
Common Terminal Arrangement	16 points/common	16 points/common (common terminal: TB17)	No common (all-point independent contact)	No common (all-point independent contact)
Number of Occupied I/O points	16 points (I/O assignment: 16 input points)	16 points (I/O assignment: output 16 points)	16 points (I/O assignment: output 16 points)	16 points (I/O assignment: output 16 points)
External Connections	18-point terminal block	18-point screw terminal block (M3 × 6 screw)	18-point screw terminal block (M3 × 6 screw)	18-point screw terminal block (M3 × 6 screw)
5VDC Internal Current Consumption	460mA (TYP. all points ON)	300mA (TYP. all points ON)	260mA (TYP. all points ON)	200mA (TYP. all points ON)
Weight (kg)	0.21	0.22	0.18	0.19
Dimensions (W x H x D) mm	28.5 x 90 x 117			

Digital Output Module Specifications (Sink Transistor Output Modules)

Model Number		LY40NT5P	LY41NT1P	LY42NT1P
Stocked Item		S	S	S
Certification		UL • cUL • CE		
Number of Output Points		16 points	32 points	64 points
Rated Load Voltage		12 to 24VDC (+20%/-15%)		
Maximum Load Current		0.5A/point, 5A common	0.1A / point, 2A / common	
Response Time	OFF – ON	0.5ms or less		
	ON – OFF	1ms or less (rated load, resistive load)		
External Supply Power	Voltage	12 to 24VDC (+20%/-15%, ripple ratio within 5%)		
	Current	9mA (at 24VDC)	13mA (at 24VDC)/common	9mA (at 24VDC)/common
Common Terminal Arrangement		16 points/common	32 points/common	32 points/common
Number of Occupied I/O points		16 points (I/O assignment: 16 output points)	32 points (I/O assignment: 32 output points)	64 points (I/O assignment: 64 output points)
External Connections		18-point terminal block	40-pin connector	40-pin connector x 2
5VDC Internal Current Consumption		100mA (TYP. all points ON)	140mA (TYP. all points ON)	190mA (TYP. all points ON)
Weight (kg)		0.15	0.11	0.12
Dimensions (W x H x D) mm		28.5 x 90 x 117		

Digital Output Module Specifications (Source Transistor Output Modules)

Model Number		LY40PT5P	LY41PT1P	LY42PT1P
Stocked Item		S	S	S
Certification		UL • cUL • CE		
Number of Output Points		16 points	32 points	64 points
Rated Load Voltage		10.2 to 28.8VDC		
Maximum Load Current		0.5A / point, 5A / common	0.1A / point, 2A / common	
Response Time	OFF – ON	0.5ms or less		
	ON – OFF	1ms or less (rated load, resistive load)		
External Supply Power	Voltage	10.2 to 28.8VDC (ripple ratio within 5%)		
	Current	17mA (at 24VDC)	20mA (at 24VDC)	20mA (at 24VDC)/common
Common Terminal Arrangement		16 points/common	32 points/common	32 points/common
Number of Occupied I/O points		16 points (I/O assignment: 16 output points)	32 points (I/O assignment: 32 output points)	64 points (I/O assignment: 64 output points)
External Connections		18-point screw terminal block	40-pin connector	40-pin connector
5VDC Internal Current Consumption		100mA (TYP. all points ON)	140mA (TYP. all points ON)	190mA (TYP. all points ON)
Weight (kg)		0.15	0.11	0.12
Dimensions (W x H x D) mm		28.5 x 90 x 117		

Combination I/O Modules

Model Number	LH42C4NT1P		LH42C4PT1P
Stocked Item	S		S
Certification	UL • cUL • CE		
Number of Input Points	32 points		
Rated Input Voltage	24 VDC (ripple rate 5% or less)		
Rated Input Current	4.0mA TYP (at 24 VDC)		
Number of Output Points	32 points		
Output Type	Sink		Source
Rated Load Voltage	10.2 to 28.8 VDC		
Maximum Load Current	0.1A/point, 2A / common		
Input Response Time	OFF – ON	1ms, 5ms, 10ms, 20ms, 70ms, or less	
	ON – OFF	1ms, 5ms, 10ms, 20ms, 70ms, or less	
Output Response Time	OFF – ON	0.5ms or less	
	ON – OFF	1ms or less	
External Supply Power	Voltage	12/24 VDC (ripple rate: 5% or less)	
	Current	9mA (at 24 VDC)/common	20mA (at 24 VDC) / common
Input Common Terminal Arrangement	32 points / common		
Output Common Terminal Arrangement	32 points / common		
Number of Occupied I/O points	32 points		
External Connections	40-pin connector		
5VDC Internal Current Consumption	160 mA (TYP all points ON)		150mA (TYP all points ON)
Weight (kg)	0.12		0.12
Dimensions (W x H x D) mm	28.5 x 90 x 95		

Branch and Extension Modules

Model Number	L6EXB	L6EXE
Stocked Item	S	S
Certification	UL • cUL • CE	
5VDC Internal Current Consumption	0.08	0.08
Weight (kg)	0.12	0.13
Dimensions (W x H x D) mm	28.5 x 90 x 95	

Analog I/O Modules

Analog input and output modules can be added on and configured easily in GX Works2 using built-in utilities.

Model Number		L60AD4 (Analog Input Module)		L60DA4 (Analog Output Module)	
Stocked Item		S		S	
Certification		UL • cUL • CE			
Number of Analog I/O Points		4 points (ch)			
Analog I/O	Voltage	-10 to 10VDC (Input resistance value 1MΩ)		-10 to 10VDC (External load resistance value 1kΩ to 1MΩ)	
	Current	0 to 20mADC (Input resistance value 250Ω)		0 to 20mADC (External load resistance value 0Ω to 600Ω)	
Digital Output	Output	-20480 to 20479			
	When Using Scaling Function	-32768 to 32767			
I/O Characteristics, Resolution		Analog Input Range		Digital Output Value	Resolution
		Voltage	0 to 10V	0 to 20000	500μV
			0 to 5V		250μV
			1 to 5V		200μV
			-10 to 10V	-20000 to 20000	500μV
			Users range setting	307μV (*1)	
		Current	0 to 20mA	0 to 20000	1000nA
			4 to 20mA		800nA
			Users range setting	-20000 to 20000	1230nA (*1)
		Analog Output Range		Digital Value	Resolution
Voltage	0 to 5V	0 to 20000	250μV		
	1 to 5V		200μV		
	-10 to 10V	-20000 to 20000	500μV		
	Users range setting	333μV (*1)			
Current	0 to 20mA	0 to 20000	1000nA		
	4 to 20mA		800nA		
	Users range setting	-20000 to 20000	700nA (*1)		
Accuracy	Ambient Temperature 25 ±5°C	±0.1% (±20 digit)		±0.1% (voltage: ±10mA, current: ±20μA)	
	Ambient Temperature 0 to 55°C	±0.2% (±40 digit)		±0.3% (voltage: ±30mV, current: ±60μA)	
Conversion Speed		High speed: 20μs/ch; Medium speed: 80μs/ch; Low speed: 1ms/ch		20μs/ch	
Absolute Maximum Input		Voltage: ±15V, Current: 30mA (*2)		-	
Output Short Protection		-		Available	
External Power Supply		-		24VDC (+20%/-15%); Ripple, spike within 500mVp-p Inrush current: 4.3A, 1000μs or less; Current consumption: 0.18A	
I/O Device Points Occupied		16 points (I/O assignment: 16 points for Intelligent function module)			
External Connections		18-point terminal block			
5VDC Internal Current Consumption		0.52A		0.16A	
Weight (kg)		0.19		0.20	
Dimensions (W x H x D) mm		28.5 x 90 x 117			

Notes:

1. Maximum resolution in users range settings.
2. Maximum instantaneous current value that will not cause destruction of the internal components. The maximum constant input current value is 24mA.

Analog I/O Modules

Model Number		L60ADVL8		L60ADIL8	
Stocked Item		S		S	
Certification		UL • cUL • CE			
Number of Analog I/O Points		8 points (8 ch)			
Analog I/O	Voltage	-10 to 10 VDC (input resistance 1.8M Ω)		0 to 20mADC (input resistance 250 Ω)	
Digital Output	Output	-16384 to 16383		-8192 to 8192	
	When Using Scaling Function	-32768 to 32767			
I/O Characteristics, Resolution		Analog Input Range		Digital Output Value	Resolution
		Voltage	0 to 10V	0 to 16000	625μV
			0 to 5V		625μV
			1 to 5V	0 to 8000	500μV
			-10 to 10V	-16000 to 16000	625μV
			1 to 5V (Extended mode)	-2000 to 9000	500μV
			Users range setting	-8000 to 8000	414μV
Analog Input Range		Digital Output Value	Resolution		
Current	0 to 20mA	0 to 8000	2500nA		
	4 to 20mA		2000nA		
	4 to 20mA (Extended mode)	-2000 to 9000	2500nA		
	User range setting	-8000 to 8000	1660nA		
Accuracy (Accuracy for the Maximum Value of the Digital Output Value)		Analog Input Range		Ambient Temperature	
		Voltage	0 to 10V	Within ±0.2% (±32 digit)	Within ±1% (±160 digit)
			0 to 5V	Within ±0.2% (±16 digit)	Within ±1% (±80 digit)
			0 to 5V		
			-10 to 10V	Within ±0.2% (±32 digit)	Within ±1% (±160 digit)
			1 to 5V (Extended mode)	Within ±0.2% (±16 digit)	Within ±1% (±80 digit)
		Analog Input Range		Ambient Temperature	
Current	0 to 20mA	Within ±0.2% (±16 digit)	Within ±1% (±80 digit)		
	4 to 20mAV				
	4 to 20mA (Extended mode)				
Conversion Speed		1ms/channel			
Absolute Maximum Input		Voltage: ±15V		Current: 30mA	
I/O Device Points Occupied		16 points (I/O assignment: Intelligent 16 points)			
External Connections		18-point terminal block			
5VDC Internal Current Consumption		0.20A		0.21A	
Weight (kg)		0.19		0.19	
Dimensions (W x H x D) mm		28.5 x 90 x 117		28.5 x 90 x 117	

A/D Converter Module

Model Number		L60AD4-2GH			
Stocked Item		S			
Certification		UL • cUL • CE			
Number of Analog I/O Points		4 points (4 channels)			
Analog I/O	Voltage	-10 to 10VDC (Input resistance value 1MΩ)			
	Current	0 to 20mADC (Input resistance value 250Ω)			
Digital Output	Output	-32000 to 32000			
	When Using Scaling Function	-32768 to 32767			
I/O Characteristics, Resolution		Analog Input Range		Digital Output Value	Maximum Resolution
		Voltage	0 to 10V	0 to 32000	312.5μV
			0 to 5V		156μV
			1 to 5V		125μV
			-10 to 10V	-32000 to 32000	312.5μV
			1 to 5V (Extended mode)	-8000 to 32000	125μV
			User range setting (bi-polar: voltage)	-32000 to 32000	200μV
		Current	0 to 20mA	0 to 32000	625nA
			4 to 20mA		500nA
			4 to 20mA (Extended mode)	-8000 to 32000	500nA
User range setting (uni-polar: current)	0 to 32000		400nA		
Accuracy for the Max. Value of Digital Output Value	Reference Accuracy	Within ±0.05% (±16 digit)			
	Temp Coefficient	±40.1ppm/°C or lower			
Conversion Speed		40μ/2 channels			
Absolute Maximum Input		Voltage: ±15V, Current: 30mA			
Offset/Gain Setting Count		Up to 100000 counts			
Insulation Method		Between I/O terminals and programmable controller power supply: photocoupler isolation; Between analog input channels: dual channel transformer insulation			
Dielectric Withstand Voltage		Between I/O terminals and programmable controller power supply: 500VAC for 1 minute; Between analog input channels: 1000VAC for 1 minute			
Insulation Resistance		Between I/O terminals and programmable controller power supply: 500VDC 10MΩ or higher			
Number of Occupied I/O Points		16 points (I/O assignment: 16 points for intelligent)			
Connected Terminal		18-point terminal block			
Applicable Wire Size		0.3 to 0.75mm²			
Applicable Solderless Terminal		R1.25-3 (solderless terminals with sleeve are not usable)			
5VDC Internal Current Consumption		0.76A			
Weight (kg)		0.20			
Dimensions (W x H x D) mm		28.5 x 90 x 117			

D/A Converter Modules

Model Number		L60DAVL8	L60DAIL8
Stocked Item		-	-
Certification		UL • cUL • CE	
Number of Analog I/O Points		8 channels	
Digital Input		-16384 to 16383 (When the scaling function is used: -32768 to 32767)	-8192 to 8191 (When the scaling function is used: -32768 to 32767)
Analog Output		-10 to 10 VDC (external load resistance 1kΩ to 1MΩ)	
I/O Characteristics, Resolution (*1)		Analog Output Range	Digital Value
		Resolution	
		Voltage	
		0 to 5V	0 to 8000
		1 to 5V	625μV
		-10 to 10V	500μV
		-16000 to 16000	625μV
		User range setting	320μV (*2)
		Analog Output Range	Digital Value
		Resolution	
		Current	
		0 to 20mA	0 to 8000
		4 to 20mA	2500nA
		User range setting	2000nA
		-8000 to 8000	707nA (*2)
Accuracy for the Max. Value of Digital Output Value (*3)	Ambient Temperature 25±5°C	Within ±0.3% (±30mV)	
	Ambient Temperature 0 to 55°C	Within ±0.5% (±50mV)	
Conversion Speed	Normal Output Mode	200μs/channel	
	Wave Output Mode	200μs/channel	
Number of Offset/Gain Settings		Up to 10000 counts	
Output Short Protection		Protected	
Insulation Method		Between I/O terminals and programmable controller power supply: photocoupler isolation Between output channels: no insulation Between external power supply and analog output: transformer insulation	
Dielectric Withstand Voltage		Between I/O terminals and programmable controller power supply: 500VACrms for 1 minute Between external power supply and analog output: 500VACrms for 1 minute	
Insulation Resistance		Between I/O terminals and programmable controller power supply: 500VDC 10MΩ or higher	
Number of Occupied I/O Points		16 points (I/O assignment: Intelligent 16 points)	
Number of Occupied Modules		2	
External Interface		18-point terminal block	
Applicable Wire Size		0.3 to 0.75mm ²	
Applicable Solderless Terminal		R1.25-3 (solderless terminals with sleeve are not usable)	
External Power Supply		24VDC +20%, -15%, Ripple, spike 500mVP-P or lower, Inrush current: 3.9A, 2.0ms or shorter	
External Current Consumption		0.13A	0.25A
5VDC Internal Current Consumption		0.15A	
Weight (kg)		0.22	
Dimensions (W x H x D) mm		90 x 45 x 117	90 x 45 x 117

Notes:

- For details on the I/O conversion characteristics, refer to I/O Conversion Characteristic of D/A Conversion in the manual.
- Maximum resolution in the user range setting.
- Except when receiving noise influence.

Combination Analog Module

Model Number		L60AD2DA2				
Stocked Item		S				
Certification		UL • cUL • CE				
Number of Analog Output Points		2 points (2 channels)				
Number of Analog Input Points		2 points (2 channels)				
Digital Input	Input	-16384 to 16383				
	With Scaling Function	-32768 to 32767				
Analog Output	Voltage	-10 to 10VDC (external load resistance 1kΩ to 1MΩ)				
	Current	0 to 20mADC (External load resistance 0Ω to 600Ω)				
Analog Input	Voltage	-10 to 10 VDC (input resistance 1MΩ)				
	Current	0 to 20mADC (input resistance 250Ω)				
Digital Output	Output	-16384 to 16383				
	With Scaling Function	-32768 to 32767				
I/O Characteristics, Resolution (*1)		Analog Output Range		Digital Input Value	Resolution	
		Voltage	0 to 5V	0 to 12000	416μV	
			1 to 5V		333μV	
			-10 to 10V		-16000 to 16000	625μV
			User Range Setting (Bi-Polar: Voltage)		-12000 to 12000	319μV (*2)
		Current	0 to 20mA	0 to 12000	166nA	
			4 to 20mA		1333nA	
			User Range Setting		-12000 to 12000	696nA (*2)
		Analog Input Range		Digital Output Value	Resolution	
		Voltage	0 to 10V	0 to 16000	625μV	
			0 to 5V	0 to 12000	416μV	
			1 to 5V		333μV	
			-10 to 10V	-16000 to 16000	625μV	
			1 to 5V (Extended mode)	-3000 to 13500	333μV	
			User Range Setting (Voltage)		-1200 to 12000	321μV
		Current	0 to 20mA	0 to 12000	1666nA	
			4 to 20mA		1333nA	
			4 to 20mA (Extended mode)		-3000 to 13500	1333nA
			User Range Setting (Current)		-12000 to 12000	1287nA (*2)
		Accuracy (Accuracy for the Maximum Value of the Analog Output Value) (*3)		Analog Output Range		Ambient Temperature
				25 ±5°	0 to 55°	
Voltage	0 to 5V			Within ±0.2% (±10mV)	Within ±0.4% (±20mV)	
	1 to 5V				Within ±0.4% (±40mV)	
	-10 to 10V			Within ±0.2% (±20mV)	Within ±0.4% (±40mV)	
Current	0 to 20mA			Within ±0.2% (±40μA)	Within ±0.4% (±80μA)	
	4 to 20mA				Within ±0.4% (±80μA)	
Analog Input Range				Ambient Temperature		
				25±5° C	0~55° C	
Voltage	0 to 10V			±0.2% (±32 digit)	± 0.3% (±48 digit)	
	-10 to 10V					
	0 to 5V			± 0.2% (± 24 digit)	± 0.3% (± 36 digit)	
	1 to 5V					
1 to 5V (Extended mode)						
Current	0 to 20mA	± 0.2% (± 24 digit)	± 0.3% (± 36 digit)			
	4 to 20mA					
	4 to 20 mA (Extended mode)					
Conversion Speed		80μ/channel (*4)				
Output Short Protection		Protected				
Offset/Gain Setting Count (Flash Memory Write Count) (*5)		Up to 100000 counts				
Insulation Method		Between I/O terminals and programmable controller power supply: photocoupler isolation; Between I/O channels: no isolation Between the external power supply and analog I/O channels: transformer isolation				
Dielectric Withstand Voltage		Between I/O terminals and programmable controller power supply: 500VAC for 1 minute; Between the external pwer supply and analog I/O: 500VAC for 1 minute				
Insulation Resistance		Between I/O terminals and programmable controller power supply: 500VDC 10MΩ or higher				
Number of Occupied I/O Points		16 points (I/O assignment: 16 points for intelligent)				
Connected Terminal		18-point terminal block				
Applicable Wire Size		0.3 to 0.75mm²				
Applicable Solderless Terminal		R1.25-3 (solderless terminals with sleeve are not usable)				
External Power Supply		24VDC +20%, -15%; Ripple, spike 500mVp-p or lower; Inrush current 3.5A, 1000μ or shorter; Current consumption 0.12A				
Internal Current Consumption (5VDC)		0.17A				
Weight (kg)		0.22				
Dimensions (W x H x D) mm		28.5 x 90 x 117				

Notes:

- For details on the I/O conversion characteristic, refer to the I/O Conversion Characteristic of A/D Conversion in Users Manual.
- Maximum resolution in the user range setting.
- Except when receiving noise influence.
- For details on the conversion speed, refer to the enable/disable settings and conversion speed of A/D and D/A in the Users Manual.
- If the number of offset/gain settings exceeds 100000 times, an error (error code 170) occurs.

Multiple Input Module

Model Number		L60MD4-G																																
Stocked Item		S																																
Certification		UL • cUL • CE																																
Number of Analog Input Points		4 points (4 channels)																																
Analog Input	Voltage	-10 to 10 VDC (input resistance 1MΩ)																																
	Current	0 to 20mA DC (input resistance 250Ω)																																
	Micro Voltage	-100 to 100mVDC																																
	Thermocouple	Available type: 12 types K, J, T, E, N, R, S, B, U, L, PLII, W5Re/W26Re Cold junction compensation resistor: Use the included cold junction compensation resistor (CJ)																																
	Resistance Temperature Detector	Available type: 4 types Pt1000, Pt100, JPt100, Pt50 Measurement method: 3-wire system																																
Digital Output	Value	Voltage, current, micro voltage: -20480 to 20479 Resistance temperature detector: Pt100 (-20 to 120°C), JPt100 (-20 to 120°C) • For Celsius: -2000 to 12000 • For Fahrenheit: 0 to 20000 Value rounded off to two decimal places × 100 times																																
		Thermocouple, Resistance temperature detector (other than the above) • For Celsius: -2700 to 23000 • For Fahrenheit: -4000 to 32000 Value rounded off to one decimal place × 10 times																																
	With Scaling Function	-32768 to 32767																																
I/O Characteristics, Resolution		<table><tr><th colspan="2">Analog Input Range</th><th>Digital Output Value</th><th>Resolution</th></tr><tr><td rowspan="5">Voltage</td><td>0 to 10V</td><td rowspan="3">0 to 20000</td><td>500μV</td></tr><tr><td>0 to 5V</td><td>250μV</td></tr><tr><td>1 to 5V</td><td>200μV</td></tr><tr><td>-10 to 10V</td><td>-20000 to 20000</td><td>500μV</td></tr><tr><td>1 to 5V (extended mode)</td><td>-5000 to 22500</td><td>200μV</td></tr><tr><td rowspan="3">Current</td><td>0 to 20mA</td><td rowspan="3">0 to 20000</td><td>1000nA</td></tr><tr><td>4 to 20mA</td><td>800nA</td></tr><tr><td>4 to 20mA (extended mode)</td><td>-5000 to 22500</td><td>800nA</td></tr><tr><td>Micro Voltage</td><td>-100 to 100mV</td><td>-20000 to 20000</td><td>5μV</td></tr></table>		Analog Input Range		Digital Output Value	Resolution	Voltage	0 to 10V	0 to 20000	500μV	0 to 5V	250μV	1 to 5V	200μV	-10 to 10V	-20000 to 20000	500μV	1 to 5V (extended mode)	-5000 to 22500	200μV	Current	0 to 20mA	0 to 20000	1000nA	4 to 20mA	800nA	4 to 20mA (extended mode)	-5000 to 22500	800nA	Micro Voltage	-100 to 100mV	-20000 to 20000	5μV
		Analog Input Range		Digital Output Value	Resolution																													
		Voltage	0 to 10V	0 to 20000	500μV																													
			0 to 5V		250μV																													
			1 to 5V		200μV																													
			-10 to 10V	-20000 to 20000	500μV																													
			1 to 5V (extended mode)	-5000 to 22500	200μV																													
		Current	0 to 20mA	0 to 20000	1000nA																													
			4 to 20mA		800nA																													
			4 to 20mA (extended mode)		-5000 to 22500	800nA																												
		Micro Voltage	-100 to 100mV	-20000 to 20000	5μV																													
		Thermocouple: B, R, S, N, PLII, W5Re/W26Re: 0.3°C K, E, J, T, U, L: 0.1°C																																
		Resistance temperature detector: Pt100 (-20 to 120°C), JPt100 (-20 to 120°C): 0.03°C Pt100 (-200 to 850°C), JPt100 (-200 to 600°C), Pt1000, Pt50: 0.1°C																																
Accuracy	Voltage/Current/ Micro Voltage	Ambient temperature 25±5°C: Maximum value of the measurement range × (±0.3%) (±60 digits)																																
		Ambient temperature 0 to 55°C: Maximum value of the measurement range × (±0.9%) (±180 digits)																																
	Thermocouple	Ambient temperature 25±5°C: Full scale × (±0.15%)																																
		Ambient temperature 0 to 55°C: Full scale × (±0.3%)																																
Cold Junction Compensation Resistor	Temperature measured value: -100°C or higher - within ±1.0°C																																	
	Temperature measured value: -150°C to -100°C - within ±2.0°C																																	
	Temperature measured value: -200°C to -150°C - within ±3.0°C																																	
Conversion Speed		50ms/channel																																
Output Current for Temperature Detection		Pt100, JPt100, Pt50: 1mA, Pt1000: 0.2mA																																
Absolute Maximum Input		Voltage: ±15V, Current: 30mA																																
Insulation Method		Between input terminals and programmable controller power supply: Photocoupler Between input channels: Transformer																																
Dielectric Withstand Voltage		Between input terminals and programmable controller power supply: 500VACrms for 1 minute Between input channels: 500VACrms for 1 minute																																
Insulation Resistance		Between input terminals and programmable controller power supply: 500VDC 10MΩ or higher Between input channels: 500VDC 10MΩ or higher																																
Number of Occupied I/O Points		16 points (I/O assignment: Intelligent 16 points)																																
Disconnection Detection		Protected																																
Connected Terminal		18-point terminal block																																
Applicable Wire Size		0.3 to 0.75mm²																																
Applicable Solderless Terminal		R1.25-3 (solderless terminals with sleeve are not usable)																																
Internal Current Consumption (5VDC)		0.49A																																
Weight (kg)		0.19																																
Dimensions (W x H x D) mm		28.5 x 90 x 117																																

Temperature Input Module – RTD Input

Model		L60RD8	
Stocked Item		S	
Certification		UL • cUL • CE	
Number of Analog Input Points		8 points (8 channels)	
Output	Temperature Measured Value	-3280 to 15620	
	Digital Operation Value	-32768 to 32767	
Applicable RTD		9 types Pt100 (JIS C 1604-2013), JPt100 (JIS C 1604-1981), Pt1000, Pt50 (JIS C 1604-1981), Ni100 (DIN 43760 1987), Ni120 (DIN 43760 1987), Ni500 (DIN 43760 1987), Cu100 (GOST 6651-2009, α = 0.00428), Cu50 (GOST 6651-2009, α = 0.00428)	
Measured Temperature Range		Celsius	Fahrenheit
	Pt100	-20 to 120°C	-4 to 248°F
		-200 to 850°C	-328 to 1562°F
	JPt100	-20 to 120°C	-4 to 248°F
		-200 to 600°C	-328 to 1112°F
	Pt1000	-200 to 850°C	-328 to 1562°F
	Pt50	-200 to 650°C	-328 to 1202°F
	Ni100	-60 to 250°C	-76 to 482°F
	Ni120	-60 to 250°C	-76 to 482°F
	Ni500	-60 to 250°C	-76 to 482°F
Cu100	-180 to 200°C	-292 to 392°F	
	Cu50	-180 to 200°C	-292 to 392°F
Temperature Detecting Output Current (*1)		1mA	Pt100, JPt100, Pt50, Ni100, Ni120, Cu100, Cu50
		100μA	Pt1000, Ni500
Conversion Accuracy (*2)	Ambient Temperature 25±5°C	Accuracy (Refer to manual SH(NA)-081530ENG, MELSEC L RTD Input Module User's Manual) Measured temperature range accuracy at RTD input.	
	Ambient Temperature 0 to 55°C		
Resolution (*3)		0.1°C	
Conversion Speed		40ms/channel	
Number of Sensor Two-Point Correction Settings		10000 times maximum	
Insulation Method		Between input terminals and programmable controller power supply: Photocoupler; Between input channels: Non-insulation	
Withstand Voltage		Between input terminals and programmable controller power supply: 500VACrms for 1 minute; Between input channels: Non-insulation	
Insulation Resistance		Between input terminals and programmable controller power supply: 500VDC 10MΩ or higher; Between input channels: Non-insulation	
Disconnection Detection (*4)		Available	
Number of Occupied I/O Points		16 points (I/O assignment: Intelligent 16 points)	
External connection System		24-point spring clamp terminal block	
Applicable Cable Type (*5)		Solid wire, stranded wire, bar solderless terminal	
Applicable Wire Size (*6)		Core 0.5 to 1.5mm² (24 to 16 AWG)	
		Terminal hole size 2.4mm x 1.5mm	
Applicable Solderless Terminal		Al 0.5-10WH [Applicable wire size: 0.5mm²]; Al 0.75-10GY [Applicable wire size: 0.75mm²]; A 1-10 [Applicable wire size: 1.0mm²]; A 1.5-10 [Applicable wire size: 1.5mm²]	
Wire Strip Length		10mm	
Internal Current Consumption (5VDC)		0.22A	
Weight (kg)		0.15	
Dimensions (W x H x D) mm		28.5 x 90 x 116.5	

Notes:

1. Current is output only on channels in which conversion is being performed.
2. Except when receiving noise influence.
3. When the standard product (L60MD4-G) is replaced by this module, the resolution of Pt100 (-20 to 120°C) and JPt100 (-20 to 120°C) is different.
4. Select the setting for the output at disconnection detection from "Value just before disconnection", "Upscale", "Downscale", and "Any value".
5. When a stranded wire is used, attach a bar solderless terminal.
6. The solderless terminal having an end length of 10mm that complies with DIN 46228-1 can be used.

Temperature Control Modules

Model Number			L60TCTT4	L60TCRT4	L60TCTT4BW	L60TCRT4BW
Stocked Item			S	S	S	S
Certification			UL • cUL • CE			
Control Output			Transistor output			
Number of Temperature Input Points			4 channels/module			
Type of Usable Temperature Sensors, the Temperature Measurement Range, the Resolution, and the Effect From Wiring Resistance of 1Ω			Thermocouple	Resistive thermal device	Thermocouple	Resistive thermal device
Accuracy	Indication Accuracy	Ambient Temperature: 25 ±5°C	Full scale × (±0.3%)			
		Ambient Temperature: 0 to 55°C	Full scale × (±0.7%)			
	Cold Junction Temperature Compensation Accuracy: (Ambient Temperature: 0 to 55°C)	Temperature Process Value (PV): -100° C or More	Within ±1.0°C	-	Within ±1.0°C	-
		Temperature Process Value (PV): -150 to -100°C	Within ±2.0°C		Within ±2.0°C	
Temperature Process Value (PV): -200 to -150°C		Within ±3.0°C	Within ±3.0°C			
Sampling Cycle			250ms/4 channels, 500ms/4 channels			
Control Output Cycle			0.5 to 100.0s			
Input Impedance			1MΩ			
Input Filter			0 to 100s (0: Input filter OFF)			
Sensor Correction Value Setting			-50.00 to 50.00%			
Operation at Sensor Input Disconnection			Upscale processing			
Temperature Control Method			PID ON/OFF pulse or two-position control			
PID Constants Range		PID Constants Setting	Can be set by auto tuning			
		Proportional Band (P)	0.0 to 1000.0% (0: Two-position control)			
		Integral Time (I)	0 to 3600s (set 0 for P control and PD control)			
		Derivative Time (D)	0 to 3600s (set 0 for P control and PI control)			
Set Value (SV) Setting Range			Within the temperature range set in the thermocouple/platinum resistance thermometer to be used			
Dead Band Setting Range			0.1 to 10.0%			
Transistor Output		Output Signal	ON/OFF pulse			
		Rated Load Voltage	10 to 30VDC			
		Max. Load Current	0.1A/point, 0.4A/common			
		Max. Inrush Current	0.4A 10ms			
		Leakage Current at OFF	0.1mA or less			
		Max. Voltage Drop at ON	1.0VDC (TYP) at 0.1A 2.5VDC (MAX) at 0.1A			
		Response Time	OFF-ON: 2ms or less, ON-OFF: 2ms or less			
Number of Accesses to Non-Volatile Memory			Max. 10 ¹² times			
Heater Disconnection Detection Specifications		Current Sensor	-		See L Series User's Manual	
		Input Accuracy			Full scale × (±1.0%)	
		Number of Alert Delay			3 to 255	
Number of Occupied I/O Points			16 points (I/O assignment: 16 intelligent points)			
Number of Occupied Module			1		2	
External Connection			18-point terminal block		Two 18-point terminal blocks	
Internal Current Consumption			0.30A	0.31A	0.33A	0.35A
Weight (kg)			0.18		0.33	
Dimensions (W x H x D) mm			28.5 x 90 x 117		57.0 x 9 x 117	

Simple Motion Modules

See Motion Controller Section in this Guide.

SSCNET III Head Module

Model Number		LJ72MS15
Stocked Item		S
Certification		UL • cUL • CE
Maximum Link Points Per Network	RWr, RX	256 bytes in total
	RWw, RY	256 bytes in total
Maximum Link Points Per Station	RWr, RX	64 bytes in total
	RWw, RY	64 bytes in total
Communication Speed		150Mbps
Maximum Connectable Stations Per Network (*1)	Communication Cycle:	888μs: 4 stations
		444μs: 2 stations
		222μs: 1 station
Connection Cable		SSCNET III cable (optical fiber cable)
Maximum Station-to-Station Distance		POF type: 20m; H-PCF type: 50m
Connection Method		Daisy chain connection (Regenerative relay system with a servo amplifier)
Transmission System		Full-duplex communication (because of the separation of the channels for sending and receiving)
Encoding Method		8B10B + scramble
Transmission Format		Original to SSCNET III/H
Synchronization Method		Synchronization of the control cycle and communication cycle that synchronize with the data transmission of the Motion controller
Communication Cycle		222μs/444μs/888μs
Error Control System		CRC
Head Module		
Number of I/O Points (*2)	X	4096 points, 512 bytes (Number of points accessible to the actual module)
	Y	4096 points, 512 bytes (Number of points accessible to the actual module)
Number of Device Points	X	8192 points, 1KB (Number of usable points on programs); (RX0 is assigned from X0)
	Y	8192 points, 1KB (Number of usable points on programs); (RY0 is assigned from Y0)
	SB	8192 points, 1KB
	SW	8192 points, 16KB
	SM	2048 points, 256 bytes
	SD	2048 points, 4KB
	W	8192 points, 16KB; (RWw0 is assigned from W0, RWr0 is assigned from W1000)
	U□□G□□	Devices that directly access the buffer memory of intelligent function modules
Number of Writes to the Parameter Memory		Up to 100000 times
Clock Function (For Displaying the Date and Time of an Error)		Year, month, date, hour, minute, and second (automatic leap year detection) When connected to a network, the clock synchronizes periodically with the clock in the Motion controller via the network. (Initial value: 2000/1/1 00:00:00) After the clock information has been acquired from the Motion controller, when the head module is powered off then on, the clock resumes from the time when the power was last turned off. (The clock pauses during power off.) Therefore, the data and time of an error that occurred during initial processing may be different from the actual one.
Allowable Momentary Power Failure Time		Depends on the power supply module used
Internal Current Consumption (5VDC) A		0.55
Laser Classification (JIS C 6802, IEC 60825-1)		Class 1
Weight (kg)		0.20
Dimensions (W x H x D) mm		50 x 90 x 95

Notes:

1. This number includes only head modules. Servo amplifiers are not included.
2. This is the maximum number of points that can be assigned to the actual module in "PLC Parameter" - "I/O Assignment" of GX Works2.

Positioning Modules

Open collector and differential line driver pulse positioning modules can be added on and configured in GX Works2 using built-in utilities.

Model Number			LD75P1 • LD75D1 (*1)	LD75P2 • LD75D2 (*1)	LD75P4 • LD75D4 (*1)		
Stocked Item			S	S	S		
Certification			UL • cUL • CE				
Number of Control Axes			1 axis	2 axes	4 axes		
Interpolation Function			None	2-axis linear interpolation 2-axis circular interpolation	2-, 3-, or 4-axis linear interpolation 2-axis circular interpolation		
Control System			PTP (Point To Point) control, path control (both linear and arc can be set), speed control, speed position switching control, position-speed switching control				
Control Unit			mm, inch, degree, pulse				
Positioning Data			600 data/axis (Can be set with GX Works2 or program.)				
Backup			Parameters, positioning data, and block start data can be saved on flash ROM (battery-less backup)				
Positioning Control	Positioning Control System	PTP Control (*1)	Incremental system/absolute system				
		Speed-Position Switching Control	Incremental system/absolute system (*2)				
		Position-Speed Switching Control	Incremental system				
		Path Control	Incremental system/absolute system				
	Positioning Control Range	In Absolute System	-214748364.8 to 214748364.7 (μm) -21474.83648 to 21474.83647 (inch) 0 to 359.99999 (degree) -2147483648 to 2147483647 (pulse)				
		In Incremental System	-214748364.8 to 214748364.7 (μm) -21474.83648 to 21474.83647 (inch) -21474.83648 to 21474.83647 (degree) -2147483648 to 2147483647 (pulse)				
		In speed-Position Switching Control (INC Mode)/Position-Speed Switching Control	0 to 214748364.7 (μm) 0 to 21474.83647 (inch) 0 to 21474.83647 (degree) 0 to 2147483647 (pulse)				
		In Speed-Position Switching Control (ABS Mode) (*2)	0 to 359.99999 (degree)				
	Speed Command		0.01 to 20000000.00 (mm/min) 0.001 to 2000000.000 (inch/min) 0.001 to 2000000.000 (degree/min) 1 to 4000000 (pulse/s)				
	Acceleration/Deceleration System Selection		Trapezoidal acceleration/deceleration, S-curve acceleration/deceleration				
	Acceleration/Deceleration Time		1 to 8388608 (ms) Four patterns can be set for each of acceleration time and deceleration time				
	Sudden Stop Deceleration Time		1 to 8388608 (ms)				
Starting Time (*3)			1-axis linear control		1.5ms		
			1-axis speed control		1.5ms		
			2-axis linear interpolation control (Composite speed)		1.5ms		
			2-axis linear interpolation control (Reference axis speed)		1.5ms		
			2-axis circular interpolation control		2.0ms		
			2-axis speed control		1.5ms		
			3-axis linear interpolation control (Composite speed)		1.7ms		
			3-axis linear interpolation control (Reference axis speed)		1.7ms		
			3-axis speed control		1.7ms		
			4-axis linear interpolation control		1.8ms		
			4-axis speed control		1.8ms		
			Factors in starting time extension. The following times will be added to the starting time in the described conditions: • S-curve acceleration/ deceleration is selected: 0.1ms; Other axis is in operation: 0.5ms; During continuous positioning control: 0.3ms; During continuous path control: 0.3ms				
			External Wiring Connection System			40-pin connector	
			Applicable Wire Size			0.3mm ² (22AWG) (for A6CON1 or A6CON4), 0.088 to 0.24mm ² (28 to 24AWG) (for A6CON2)	
Applicable Connector For External Device			A6CON1, A6CON2, A6CON4 (sold separately)				
Max. Output Pulse			LD75P1, LD75P2, LD75P4: 200kpulse/s; LD75D1, LD75D2, LD75D4: 4Mpulse/s				
Max. Connection Distance Between Servos			LD75P1, LD75P2, LD75P4: 2m; LD75D1, LD75D2, LD75D4: 10m				
Internal Current Consumption (5VDC)			LD75P1: 0.44A; LD75D1: 0.51A	LD75P2: 0.48A; LD75D2: 0.62A	LD75P4: 0.55A; LD75D4: 0.76A		
Flash ROM Write Count			Max. 100000 times				
No. of Occupied I/O Points			32 points (I/O assignment: intelligent 32 points)				
Weight (kg)			0.18				
Dimensions (W x D x H) mm			45.0 x 95.0 x 90.0				

Notes:

- LD75P represents the open collector output system, and LD75D represents the differential driver output system.
- In speed-position switching control (ABS mode), the control unit available is "degree" only. (For details, refer to the User's Manual)
- Using the "Pre-reading start function", the virtual start time can be shortened. (For details, refer to the User's Manual).

Counter Modules

High-speed counter modules can be added on and configured in GX Works2 using built-in utilities.

Model Number		LD62 (DC Input)	LD62D (Differential Input)
Stocked Item		S	S
Certifications		UL • cUL • CE	
Number of Channels		2ch	
Counting Speed Switch Setting		10kpulse/s, 100kpulse/s, 200kpulse/s	10kpulse/s, 100kpulse/s, 200kpulse/s, 500kpulse/s
Count Input Signal	Phase	1-phase input (multiple of 1/2), CW/CCW, 2-phase input (multiple of 1/2/4)	
	Signal Level	5/12/24VDC 2 to 5mA	EIA Standard RS-422-A differential type line driver level (Equivalent with AM26LS31)
Counter	Maximum Counting Speed	200kpulse/s	500kpulse/s
	Counting Range	Binary with 32-bit code (-2147483648 to 2147483647)	
	Type	UP/DOWN preset counter (+ ring counter function)	
	Minimum Count Pulse Width (Duty Ratio 50%)	10kpulse/s	50µs
		100kpulse/s	5µs
		200kpulse/s	2.5µs
	Minimum Phase Differential for 2-Phase Input	10kpulse/s	25µs
		100kpulse/s	2.5µs
		200kpulse/s	1.25µs
		500kpulse/s	0.5µs
Comparison Output	Comparison Range	Binary with 32-bit code (-2147483648 to 2147483647)	
	Comparison Result	Set value < Count value; Set value = Count value; Set value > Count value	
External Input	Presets	5/12/24VDC 2 to 5mA	
	Function Start	5/12/24VDC 2 to 5mA (Differential type line drivers conforming to EIA standard RS-422-A are also applicable.)	
	Minimum Input Response Time	OFF – ON	Function start: 0.5ms
External Output	Comparison Output	2 points/channel	
	Output Voltage/Current	12 to 24VDC 0.5A	
	Output Response Time	OFF – ON	0.1ms or less (rated load, resistive load)
I/O Device Points Occupied		16 points (I/O assignment: 16 points for intelligent function module)	
External Connections		40-pin connector	
5VDC Internal Current Consumption (A)		0.31	0.36
Weight (kg)		0.13	
Dimensions (W x D x H) mm		28.5 x 90 x 95	

Information Modules

Serial Communication Modules

Serial communication modules can be added on and configured in GX Works2 using pre-defined or user-defined protocols.

Model Number		LJ71C24	LJ71C24-R2
Stocked Item		S	S
Certification		UL • cUL • CE	
Interface	ch1	RS-232-compliance (D-Sub 9P female)	RS-232-compliance (D-Sub 9P female)
	ch2	RS-422/485-compliance (2-piece terminal block)	RS-232-compliance (D-Sub 9P female)
Communication System	Line	Full duplex/half duplex	
	MC Protocol	Half duplex	
	Pre-Defined Protocol	Full duplex/half duplex	
	Nonprocedural Protocol		
Synchronization Method		Start-stop synchronization method	
Transmission Speed		50bps/300bps/600bps/1200bps/2400bps/4800bps/9600bps/14.4kbps/ 19.2kbps/28.8kbps/38.4kbps/57.6kbps/115.2kbps/230.4kbps; Transmission speed 230.4kbps is only available for channel 1. Total transmission speed of two interfaces is available up to 230.4kbps. Total transmission speed of two interfaces is available up to 115.2kbps when the communication data monitoring function is used.	
Access Cycle	MC Protocol	Processes one request during installed C24 CPU module END processing. (Number of scans that must be processed/number of link scans depends on the contents of the request.)	
	Pre-Defined Protocol	Sends or receives data when requested with the dedicated instruction (CPRTCL).	
	Nonprocedural Protocol	Sends data each time a send request is issued. Can receive at any time.	
	Bidirectional Protocol		
Error Detection	Parity Check	All protocols and when ODD/EVEN is selected by parameter.	
	Sum Check Code	MC protocol/bidirectional protocol selected by parameter. For the pre-defined protocol, whether or not a sum check code is needed depends on the selected protocol. Nonprocedural protocol selected by user frame.	
Transmission Control			
		DTR/DSR (ER/DR) Control	RS-232 Enabled RS-422/485 Disabled
		RS/CS Control	Enabled Disabled
		CD Signal Control	Enabled Disabled
		DC1/DC3 (Xon/Xoff) Control DC2/DC4 Control	Enabled Disabled
		• DTR/DSR signal control and DC code control are selected by the user.	
Transmission Distance (Overall Distance)	RS-232	Maximum 15m (overall distance)	
	RS-422/485	Maximum 1200m (overall distance)	-
I/O Device Points Occupied		32 points (I/O assignment: 32 points for intelligent function module)	
5VDC Internal Current Consumption (A)		0.39	0.26
Weight (kg)		0.17	0.14
Dimensions (W x D x H) mm		28.5 x 90 x 118	28.5 x 90 x 99

Ethernet Module

Model Number			LJ71E71-100	
			100BASE-TX	10BASE-T
Stocked Item			S	
Certification			UL • cUL • CE	
Transmission Specifications	Data Transmission Speed		100Mbps	10Mbps
	Interface		RJ45 (AUTO MDI/MDI-X)	
	Communication Mode		Full-duplex / Half-duplex	Half-duplex
	Transmission Method		Base band	
	Maximum Segment Length		100m (length between a hub and a node)	
	Maximum Number of Cascade Connections		Cascade connection (maximum of 2 levels)	Cascade connection (maximum of 4 levels)
Sending/Receiving Data Storage Memory	Number of Simultaneous Open Connections		16 connections (Connections usable on a program)	
	Fixed Buffer		1k word x 16	
	Random Access Buffer 6k Words		6k words x 1	
	E-Mail	Attachment	6k words x 1	
		Main Text	960k words x 1	
Number of Occupied I/O Points			32 points (I/O assignment: Intelligent 32 points)	
Internal Current Consumption (5VDC)			0.60A	
Weight (kg)			0.18	
External Dimensions (W x H x D) mm			28.5 x 95 x 90	

Network Modules

CC-Link IE Field Master/Slave

CC-Link IE Field brings 1 Gigabit speed for cyclic, acyclic and transient data transmission to RJ45 and Cat 5e cabling infrastructure. Create mixtures of line and star topology, and maintain control over up to 120 controller or remote I/O stations simultaneously on the same network.

Model Number		LJ71GF11-T2	
Stocked Item		S	
Certification		UL • cUL • CE	
Network Common Memory		32k bytes	
Transient Transmission Capacity		2048 bytes	
Ethernet	Communication Speed	1Gbps	
	Connection Cable	An Ethernet cable that meets the 1000BASE-T standard (Category 5e or higher, shielded RJ45)	
	Maximum Station-to-Station Distance	100m max. (Compliant with ANSI/TIA/EIA-568-B (Category 5e))	
	Total Distance	Line topology: 12000m (when connected to 1 master station and 120 slave stations) Star topology: Depends on the system configuration	
	Number of Cascade Connections	Up to 20	
	Transmission Path	Star, Line, Mixed Star & Line, and Ring	
Number of Connected Stations in One Network	Master Station	1 station	
	Local Station	120 stations (Local station or Remote I/O) (*1)	
Maximum Number of Networks		239	
Communication Method		Token passing method	
Number of Occupied I/O Points		32 points (I/O assignment: Intelligent 32 points)	
Internal Current Consumption (5VDC) (A)		0.89	
Weight (kg)		0.27	
Dimensions (W x H x D) mm		45 x 90 x 95	

Note 1: For CC-Link IE Field Remote I/O stations, refer to the LJ72GF15-T2 CC-Link IE Field Slave Head station.

CC-Link IE Field Slave Head Station

In place of an L Series CPU, CC-Link IE Field Slave Head Stations can be used to provide remote control over Digital I/O, Analog, Motion, High-Speed Counter, Serial Communication, and CC-Link Master/Local Station modules via CC-Link IE Field.

Model Number		LJ72GF15-T2 (*1)	
Stocked Item		S	
Certification		UL • cUL • CE	
Transmission Speed		1Gbps	
Network Topology		Star, Line, Mixed Star & Line, and Ring	
Communication Method		Deterministic (token passing)	
Maximum Number of Mountable Modules		10 (120 when using extension and branch modules)	
Communication Port		CC-Link IE field network port x 2, USB port (Mini-B terminal) x 1	
RAS Function		Network event logging, unit error logging, testing, monitoring, and error history preservation function	
Connection Cable		Ethernet cable (category 5 or higher)	
Dimensions (W x H x D) mm		50 x 90 x 95	

Note 1: CC-Link IE Field network requires CC-Link IE Field Master module.

Modules that Cannot be Connected to CC-Link IE Field Head Station

Model Number	Description
L6EXB	Branch module
L6EXE	Extension module
L6ADP-R2	RS-232 adapter
L6DSPU	Display unit
LJ71GF11-T2	CC-Link IE Field Network master/local module
LJ72MS15	SSCNET III/H head module
LJ71E71-100	Ethernet interface module
LD40PD01	Flexible high-speed I/O control module

Note: Positioning modules and simple motion modules can only be connected to head module with a serial number starting with “12071” or later.

CC-Link Master/Local Station

Additional CC-Link Master/Local Stations can be added on and configured in GX Works2.

Model Number	LJ61BT11	
Stocked Item	S	
Certification	UL • cUL • CE	
Transmission Speed	156kbps/625kbps/2.5Mbps/5Mbps/10Mbps	
Maximum Overall Cable Distance (Maximum Transmission Distance)	1.2 km (without repeater, varies according to the transmission speed)	
Maximum Number of Connected Stations (Master Station)	64	
Number of Occupied Stations (Local Station)	1 to 4 stations (The number of stations can be switched using the GX Works2 parameter setting)	
Maximum Number of Link Points Per System (*1)	Remote I/O (RX, RY)	2048 points
	Remote Register (RWw)	256 points (master station remote device station/local station/intelligent device station/standby master station)
	Remote Register (RWr)	256 points (remote device station/local station/intelligent device station/standby master station master station)
Number of Link Points Per Station (*1)	Remote I/O (RX, RY)	32 points (local station is 30 points)
	Remote Register (RWw)	4 points (master station remote device station/local station/intelligent device station/standby master station)
	Remote Register (RWr)	4 points (remote device station/local station/intelligent device station/standby master station master station)
Transmission Path	Bus (RS-485)	
RAS Function	Automatic return function; Slave station cut-off function; Error detection via link special relay/register	
Connection Cable	CC-Link dedicated cables compatible with Ver.1.10	
I/O Device Points Occupied	32 points (I/O assignment: 32 points for intelligent function module)	
5VDC Internal Current Consumption	0.46A	
Weight (kg)	0.15	
Dimensions (W x H x D) mm	28.5 x 90 x 118	

Note 1: Indicates the number of link points for Remote net Ver.1 mode.

IO Link Master

Model Number		ME1IOL6-L	
Stocked Item		-	
Number of Ports		6	
Port Configuration		IO-Link, Digital output (SIO mode), Digital input (SIO mode), Disabled	
IO-Link Mode		Rated Voltage	24 VDC
		Rated Output Current (C/Q)	15 mA
		Rated Sensor/Actuator Supply Current (L+)	200 mA
SIO Mode	Digital Input	Input Type	Sink
		Rated Voltage	24 VDC
		Internal Pull-Down Current (C/Q)	5 mA
		Input Filter (HW and SW)	200 μs
	Digital Output	Rated Voltage	24 VDC
		Rated Output Current (C/Q)	200 mA Max. current per port (sum of C and L+): 215 mA
		Rated Sensor/Actuator Supply Current (L+)	
		Output Type	Push-pull
Port Disabled		Communication Line (C/Q)	Switched OFF
		Sensor/Actuator Supply Line Switched OFF (L+)	
Protection Functions	Communication Line (C/Q)	Over-current, over-load and short-circuit	
	Sensor/Actuator Supply Line (L+)		
Insulation Method	Between the I/O Terminals and PLC Power Supply	Photocoupler isolation	
	Between Channels	No isolation	
Dielectric Withstand Voltage		Between I/O terminals and programmable controller power supply: 500 VACrms for 1 minute	
Insulation Resistance		Between I/O terminals and programmable controller power supply: 500 VDC 10 MΩ or more	
Number of I/O Occupied Points		32 points (I/O assignment: Intelligent 32 points)	
External Wiring Connection System		18-points terminal block	
Cable Specification		Cable Type	Unshielded cable
		Maximum Length	20 m
		Applicable Wire Size	0.3 to 0.75mm²
		Overall Loop Resistance	6 Ω
		Effective Line Capacitance	3 nF
Applicable Solderless Terminals		R1.25-3 (Solderless terminals with sleeves cannot be used)	
External Supply Power		Voltage	24 VDC (+20%, -15%); ripple, spike within 500mVP-P In order to keep the specified IO-Link output voltage levels (L+ line) the external supply voltage must be higher than 22 VDC
		Current (A)	The sum current on the L- lines must not exceed 1.7
		Inrush Current	8 A within 230 μs
Internal Current Consumption (5 VDC) (A)		0.06	
Online Module Change		Not supported	
Weight (kg)		0.18	

CC-Link/LT Master Module

Model Number		LJ61CL12
Stocked Item		-
Certification		UL • cUL • CE
Transmission Speed		156kbps/625kbps/2.5Mbps
Network Topology		T-branch
Communication Method		Deterministic (CRC)
Number of Connectable Modules		64
Number of Occupied I/O Points		16 points (I/O assignment: 1024points for intelligent function module)
5VDC Internal Current Consumption		0.16A
Weight (kg)		0.12
Dimensions (W x H x D) mm		28.5 x 90 x 95

Options

Display Module Specifications

Use the Display Module for on-site maintenance and troubleshooting, directly from the PLC without a computer or software. Monitor devices, force devices and adjust intelligent function module parameters, all while using User Messages prompted by the program.

Model Number		L6DSPU (*1)
Stocked Item		S
Number of Display Characters		16 characters x 4 lines
Language Selection		English and Japanese
Backlight Display		Green and red
Weight (kg)		0.03
Dimensions (W x H x D) mm		45 x 50 x 17.3

Note 1: Display unit included in CPU sets, L02CPU-SET and L26CPU-BT-SET.

RS-232 Adapter Specifications

Model Number	L6ADP-R2
Stocked Item	S
Maximum Data Transmission Speed	115.2kbps
5VDC Internal Current Consumption	0.02A
Weight (kg)	0.10
Dimensions (W x H x D) mm	28.5 x 90 x 95

End Cover and End Cover with Error Terminal

Model Number	L6EC	L6EC-ET
Stocked Item	S	S
Rated Switching Voltage, Current	-	24VDC, 0.5A
Minimum Switching Load	-	5VDC, 1mA
Response Time	-	OFF to ON: 10ms or less; ON to OFF: 12ms or less
Life	-	Mechanical: 20 million or more Electrical: 100 thousand or more for rated switching voltage and current
Surge Suppressor	-	None
Fuse	-	None
External Connection System	-	Spring clamp terminal block
Applicable Wire Size	-	0.3 to 2.0mm ² (AWG22 to 14) (Stranded wire/single wire)
Internal Current Consumption	0.04A	0.06A
Weight (kg)	0.06	0.11
Dimensions (W x H x D) mm	13 x 90 x 95	28.5 x 90 x 95

Note: L Series CPU modules and the CC-Link IE Field Slave Head Station are supplied with a standard End Cover included.

Backup Batteries

Uses standard Q Series backup batteries. See Q Series Programmable Controllers section for more details.

Memory Cards

Mitsubishi Electric provides industrial grade SD memory cards for the L Series. Commercially available SD/SDHC cards supported up to 32GB.

Model Number	Memory Card	Stocked Item
NZ1MEM-2GBSD	2GB	S
NZ1MEM-4GBSD	4GB	S

Connectors, Cables and Terminal Blocks

For connector type I/O, all L Series and Q Series modules use the same FCN connector. Connectors, cables and terminal blocks are available for both.

Category	Model Number	Description	Stocked Item	Applicable Products (*1)
Connectors (For User-Made Cables)	A6CON1	FCN, 40 Pin, Solder Type	S	L02CPU, L26CPU-BT, LX_, LY_, LD75_, LD62_, QX_, QY_, QH42P, QX41Y41P, Q66DA-G, Q68RD3-G, QD75_, QD72P3C3
	A6CON2	FCN, 40 Pin, Crimp Type	S	
	A6CON3	FCN, 40 Pin, IDC Type	S	
	A6CON4	FCN, 40 Pin, Solder Type, Low-Profile	-	
Direct-Wire Cables	LCBL40P-2M	2.0m I/O Pigtail Cable, 40 Pin	S	L02CPU, L26CPU-BT, LX_, LY_, LD75_, LD62_, QX_, QY_, QH42P, QX41Y41P, Q66DA-G, Q68RD3-G, QD75_, QD72P3C3
	LCBL40P-5M	5.0m I/O Pigtail Cable, 40 Pin	S	
	LCBL40P-10M	10m I/O Pigtail Cable, 40 Pin	S	
Terminal Block Dedicated Cables	FA-SCBL05FMV-M	0.5m Terminal Block Cable	S	FA-LTB40P
	FA-SCBL10FMV-M	1.0m Terminal Block Cable	S	
	FA-SCBL15FMV-M	1.5m Terminal Block Cable	-	
	FA-SCBL20FMV-M	2.0m Terminal Block Cable	S	
	AC_TB	Terminal Block Cable. _ = 0.5m, 1.0m, 2.0m, 3.0m, 4.0m, 5.0m, 8.0m, 10.0m length	S	A6TBXY36, A6TBXY54
Terminal Blocks	FA-LTB40P	Terminal Block, 40 Point	S	L02CPU, L26CPU-BT
	A6TBXY36	Terminal Block, 32 Point	S	LY41NT1P, LY42NT1P, LY41PT1P, LY42PT1P, QX41_, QX42_, QY41_, QY42_, QH_, QX41Y41P
	A6TBXY54	Terminal Block, 32 Point, 2-Wire	-	
Extension Cable	LC06E	0.6m Extension Cable	S	L6EXB
	LC10E	1.0m Extension Cable	S	L6EXE
	LC30E	3.0m Extension Cable	S	

Note 1: Applicable products are FCN connector type CPUs and Modules.

Spring Clamp Terminal Block

Model Number		L6TE-18S
Stocked Item		S
Compatible Modules	I/O Module	LX10, LX28, LX40C6, LY10R2, LY18R2A, LY20S6, LY28S1A, LY40NT5P, LY40PT5P
	Intelligent Function Module	L60AD4, L60ADIL8, L60ADVL8, L60AD4-2GH, L60DA4, L60DAIL8, L60DAVL8, L60AD2DA2, L60TCRT4, L60TCRT4BW, L60MD4-G (*1)
Wire Strip Length		8 to 11mm
Terminal Block Screw Torque Range		0.66 to 0.89 N·m
Dimensions (W x H x D) mm		20 x 76.8 x 20
Weight (kg)		0.04kg

Note 1: Only when no thermocouple input is used.



