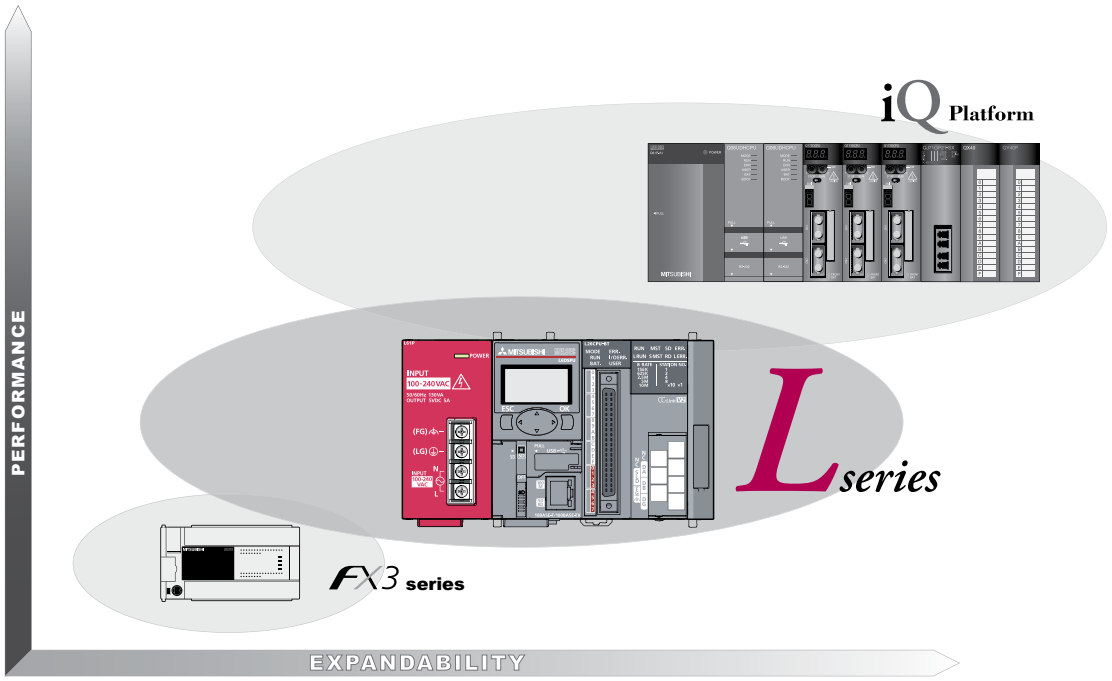
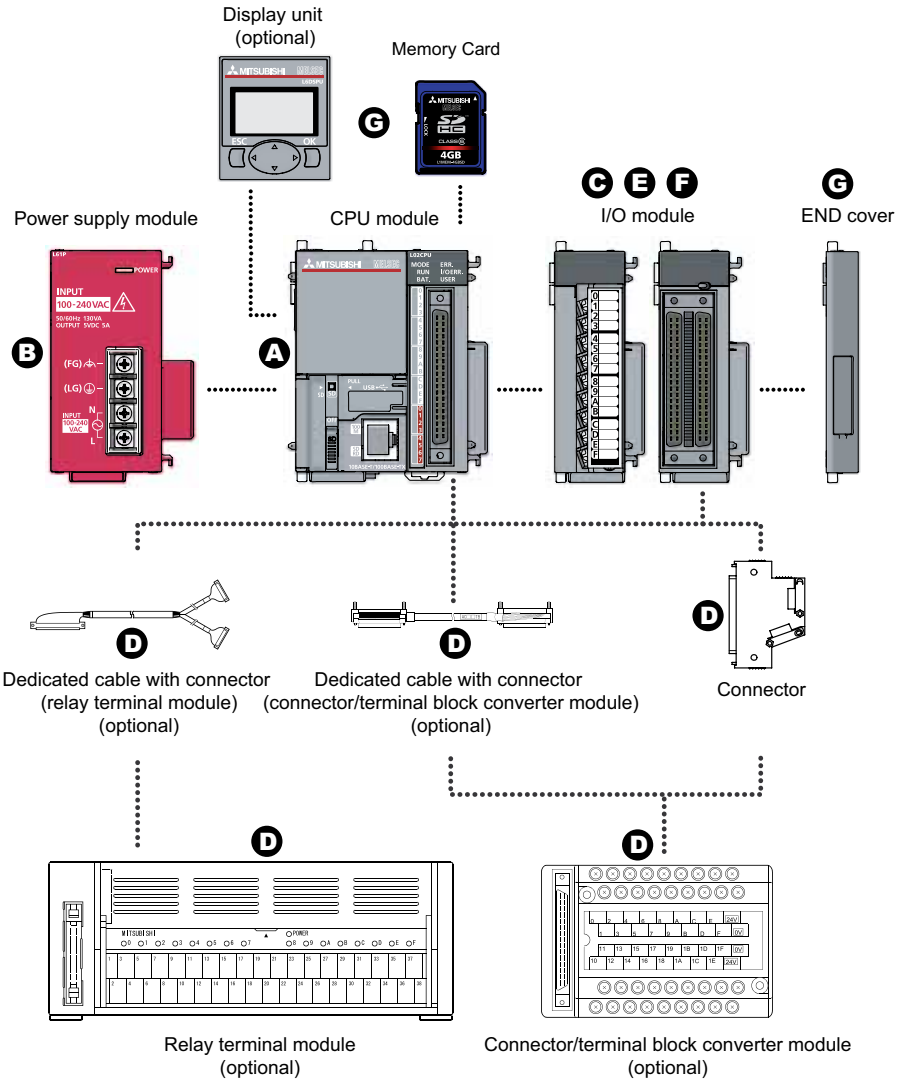
Programmable Logic Controllers
L Series



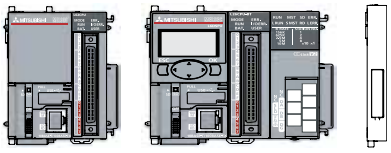
Stock Product: Stock product is product MEAU makes every effort to have on hand for immediate shipment. There may be instances when we are out of stock due to unexpected large requirements. All stock product will be indicated in this book by an "S" in the Stocked Item columns/rows.

Non-Stock Product: Non-stock product is product supplied on an "as-needed" basis. Standard lead times of 12 - 16 weeks apply, product is non-returnable and non-cancelable. Product listed as non-stock may change to stock product subject to increases in sales and usage. All non-stock product will be indicated in this book by a dash "-" in the Stocked Item columns/rows.

L Series System Configuration



A. L Series CPU Modules



The L Series is a powerful but compact modular controller with many features built-in to the CPU itself. The rack-free design promotes high system flexibility with minimum form factor. Built-in Mini-B USB and Ethernet allow for easy communication, along with a built-in SD/SDHC memory slot for data logging and memory storage, and built-in digital I/O for simple high-speed counting and positioning functions. The high-performance version CPU also includes a built-in CC-Link interface for Master/ Local Station networking. This highly flexible architecture makes the L Series ideal for both stand-alone and networked machines.

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 (*1)	L26CPU-BT (*1)
Stocked Item			S	S
Certification			UL • cUL • CE	
Processing Speed	LD Instruction		40ns	9.5ns
	MOV Instruction		80ns	19ns
Program Capacity			20k steps	260k steps
Memory Capacity	Program Memory (Drive 0)		80k bytes	1040k bytes
	Standard RAM (Drive 3)		128k bytes	768k bytes
	Standard ROM (Drive 4)		512k bytes	2048k bytes
Maximum Number of Files	Program Memory		64 programs	252 programs
	Standard RAM		4 Files (File register, local device, sampling trace, and module error history files)	
	Standard ROM		128 files	256 files
Memory Card Type			SD / SDHC	
Max. Number of Intelligent Function Module Parameter Settings	Initial Setting		2048	4096
	Refresh		1024	2048
5VDC Internal Current Consumption	CPU	With Display Module	1.00A	1.43A
		Without Display Module	0.94A	1.37A
	END Cover (Accessory) (*1)		0.04A	
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)
Weight (kg)	CPU	With Display Module	0.39	0.49
		Without Display Module	0.37	0.47
	END Cover (Accessory) (*1)		0.06	
Dimensions (W x H x D) mm			70 x 90 x 95	98.5 x 90 x 118

Note:

1. End cover is included with the CPU unit and must be placed on the right end of the last module in the system.

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

Output Type		Sink 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)
	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
	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.

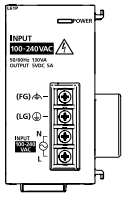
CPU Built-In I/O - High Speed Counter Specifications

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



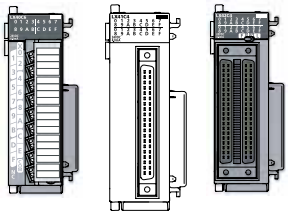
B. Power Supplies

The L Series has two Power Supply Units selectable according to AC/DC power requirements.

Power Supply Module Specifications

Model Number	L61P (*1)	L63P
Stocked Item	S	S
Certification	UL • cUL • CE	
Input Power Supply	100 to 240VAC (-15% to +10%)	24VDC (-35% to +30%)
AC Supply Frequency	50/60Hz (-5% to +5%)	-
AC Supply Voltage Distortion Factor	Within 5%	-
Maximum Input Apparent Power	130VA	-
Maximum Input Power	-	45W
Inrush Current	≤8ms @ 20A	≤1ms @ 100A (for 24VDC input)
Rated Output Current (5VDC)	5A	
Allowable Momentary Power Failure Time	10ms	-
Weight (kg)	0.32	0.29
Dimensions (W x H x D) mm	45 x 90 x 109	

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

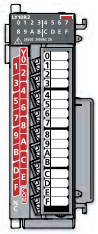


C. Digital I/O Expansion

Aside from the built-in I/O, the L Series has several I/O expansion options for Relay and Transistor.

Digital Input Module Specifications (DC Input Module)

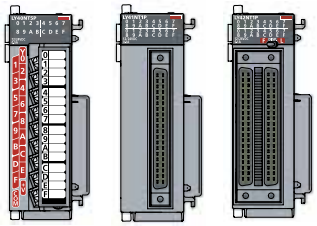
Model Number		LX40C6	LX41C4	LX42C4
Stocked Item		S	S	S
Certification		UL • cUL • CE		
Number of Input Points		16 points	32 points	64 points
Rated Input Voltage		24VDC (+20/-15%, ripple ratio within 5%)		
Rated Input Current		6.0mA TYP. (at 24VDC input)	4.0mA TYP. (at 24VDC input)	4.0mA TYP. (at 24VDC input)
Response Time	OFF - ON	1ms/5ms/10ms/20ms/70ms (Initial setting is 10ms.)		
	ON - OFF			
Common Terminal Arrangement		16 points, 1 common	32 points, 1 common	32 points, 1 common
Number of Occupied I/O 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 terminal block	40-pin connector	40-pin connector x 2
5VDC Internal Current Consumption		90mA (TYP. all points ON)	100mA (TYP. all points ON)	120mA (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	28.5 x 90 x 95	



Digital Output Module Specifications (Relay Output Module)

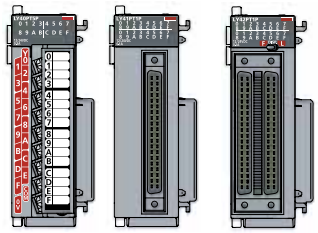
Model Number		LY10R2
Stocked Item		S
Certification		UL • cUL • CE
Number of Output Points		16 points
Rated Switching Voltage, Current		24VDC 2A (resistive load)/point, 8A/common; 240VAC 2A (COSΦ=1)/point, 8A/common
Minimum Switching Load		5VDC 1mA
Maximum Switching Load		264VAC 125VDC
Response Time	OFF - ON	10ms or less
	ON - OFF	12ms or less
Life	Mechanical	20 million times or more
	Electrical	See table below
Maximum Switching Frequency		3600 times/hour
Protection Function	Surge Suppressor	-
	Fuse	-
Common Terminal Arrangement		16 points/common
Number of Occupied I/O points		16 points (I/O assignment: 16 input points)
External Connections		18-point terminal block
5VDC Internal Current Consumption		460mA (TYP. all points ON)
Weight (kg)		0.21
Dimensions (W x H x D) mm		28.5 x 90 x 117

Usage Environment	Switching life
Rated switching voltage/current load	100 thousand times
200VAC 1.5A, 240VAC 1A (COSf=0.7)	100 thousand times
200VAC 0.4A, 240VAC 0.3A (COSf=0.7)	300 thousand times
200VAC 1A, 240VAC 0.5A (COSf=0.35)	100 thousand times
200VAC 0.3A, 240VAC 0.15A (COSf=0.35)	300 thousand times
24VDC 1A, 100VDC 0.1A (L/R=7ms)	100 thousand times
24VDC 0.3A, 100VDC 0.03A (L/R=7ms)	300 thousand times



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 95		



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 95		

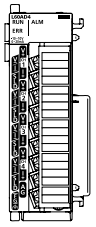
D. Connectors, Cables and Terminal Blocks

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

Category	Model Number	Description	Stock	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	
	AC05TB	0.5m Terminal Block Cable	S	A6TBXY36, A6TBXY54
	AC10TB	1.0m Terminal Block Cable	S	
	AC20TB	2.0m Terminal Block Cable	S	
	AC30TB	3.0m Terminal Block Cable	S	
	AC50TB	5.0m Terminal Block Cable	S	
	AC80TB	8.0m Terminal Block Cable	-	
	AC100TB	10m Terminal Block Cable	-	
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	-	

Note:

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



E. 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		See table below	See table below
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	

I/O Characteristics, Resolution

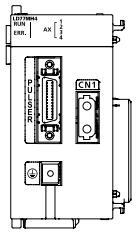
Analog Input Range		Digital Output Value	Resolution
Voltage	0 to 10V	0 to 20000	500μV
	0 to 5V		250μV
	1 to 5V		200μV
	-10 to 10V	-20000 to 20000	500μV
	Users range setting		307μV (*1)
Current	0 to 20mA	0 to 20000	1000nA
	4 to 20mA		800nA
	Users range setting	-20000 to 20000	1230nA (*1)

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)

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.

F. Intelligent Function Modules

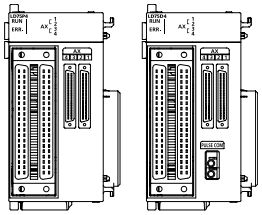


Simple Motion Modules

Model Number		LD77MH4	LD77MH16
Stocked Item		S	S
Number of Control Axes		4	16
Operation Cycle (ms)		0.88	0.88/1.77
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, Speed-torque control	
Control Unit		mm, inch, degree, PLS	
Positioning Data		600 data/axis. (Can be set with GX Works2 or sequence program.)	
Backup		Parameters, positioning data, and block start data can be saved on flash ROM (battery-less backup)	
Positioning System		PTP control: Incremental system/absolute system Speed-position switching control: Incremental system/absolute system (*1) Position-speed switching control: Incremental system Path control: Incremental system/absolute system	
Applicable Connector for External Input Signal		LD77MHIOCON	
SSCNET III Cable	MR-J3BUS_M [m (ft)] (*2)	LD77MH MR-J3(W)-_B/MR-J3(W)-_B MR-J3(W)-_B; Standard cord for inside panel; 0.15 (0.49), 0.3 (0.98), 0.5 (1.64), 1 (3.28), 3 (9.84)	
	MR-J3BUS_M-A [m (ft)] (*2)	LD77MH MR-J3(W)-_B/MR-J3(W)-_ MR-J3(W)-_B; Standard cable for outside panel; 5 (16.40), 10 (32.81), 20 (65.62)	
	MR-J3BUS_M-B [m (ft)] (*2,*3)	LD77MH MR-J3(W)-_B/MR-J3(W)-_B MR-J3(W)-_B; Long distance cable; 30 (98.43), 40 (131.23), 50 (164.04)	
5VDC Internal Current Consumption (A)		0.55	0.70
Flash ROM Write Count		Max. 100000 times	
Number of Occupied I/O Points (points)		32 (I/O assignment: Intelligent function module 32 points)	
Number of Applicable Modules		Up to 5 modules	
Outline Dimensions mm (inch) H x W x D		90.0 x 45.0 x 95.0 (3.54 x 1.77 x 3.74)	
Weight (kg)		0.22	
External Command Signal	Switching Signal	DI signal (External start or speed-position switching can be selected by parameter.)	

Notes:

1. In speed-position switching control (ABS mode), the control unit available is “degree” only.
2. _ = Cable length: (015: 0.15m (0.49ft.), 03: 0.3m (0.98ft.), 05: 0.5m (1.64ft.), 1: 1m (3.28ft.), 3: 3m (9.84ft.), 5: 5m (16.40ft.), 10: 10m (32.81ft.), 20: 20m (65.62ft.), 30: 30m (98.43ft.), 40: 40m (131.23ft.), 50: 50m (164.04ft.))
3. For the cable of less than 30[m](98.43[ft.]), contact your nearest Mitsubishi sales representative.



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			LD75P4 [Open Collector]	LD75D4 [Differential Driver] (*1)
Stocked Item			S	S
Certification			UL • cUL • CE	
Number of Control Axes			4 axes	
Interpolation Function			2-axis/3-axis/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	
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)	INC system, ABS system	
		Speed-Position Switching Control	INC system, ABS system	
		Position-Speed Switching Control	INC system	
		Path Control	INC system, ABS system (*2)	
	Positioning Control Range	In ABS System	-214748364.8 to 214748364.7 (µm) -21474.83648 to 21474.83647 (inch) 0 to 359.99999 (degree) -2147483648 to 2147483647 (pulse)	
		In INC 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		Automatic trapezoidal acceleration/deceleration, S-curve acceleration/deceleration	
	Acceleration/Deceleration Time		1 to 8388608ms; Four patterns can be set for each of acceleration time and deceleration time	
	Sudden Stop Deceleration Time		1 to 8388608ms	
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 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	
Pulse Output Method			Open collector output	Differential driver output
Max. Output Pulse			200kpulse/s	4Mpulse/s
Max. Connection Distance Between Drive Units			2m	10m
I/O Device Points Occupied			32 points (I/O assignment: 32 points for intelligent function module)	
External connections			40-pin connector x 2	
5VDC Internal Current Consumption			0.55A	0.76A
Weight (kg)			0.18	
Dimensions (W x D x H) mm			45 x 90 x 95	

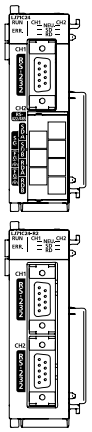
Notes:

1. The abbreviation for Point To Point, referring to position control.
2. In speed-position switching control (ABS mode), "degree" is the only control unit available.
3. Starting times may vary depending on conditions. For details, refer to the manual.

High Speed Counting 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	10kpulse/s: 50µs 100kpulse/s: 5µs 200kpulse/s: 2.5µs 500kpulse/s: 1µs
	Minimum Phase Differential for 2-Phase Input		10kpulse/s: 25µs 100kpulse/s: 2.5µs 200kpulse/s: 1.25µs	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	Preset		5/12/24VDC 2 to 5mA	5/12/24VDC 2 to 5mA (Differential type line drivers conforming to EIA standard RS-422-A are also applicable.)
	Function Start			
	Minimum Input Response Time	OFF-ON	Function start: 0.5ms	
		ON-OFF	Function start: 1ms	
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)	
		ON-OFF		
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			0.31A	0.36A
Weight (kg)			0.13	
Dimensions (W x D x H) mm			28.5 x 90 x 95	



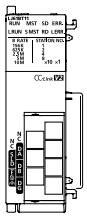
Serial Communication Modules

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		
	Bidirectional 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		RS-232: DTR/DSR (ER/DR) Control: Enabled; RS/CS Control: Enabled; CD Signal Control: Enabled; DC1/DC3 (Xon/Xoff) Control DC2/DC4 Control: Enabled RS-422/485: 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		0.39A	0.26A
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

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.

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. NOTE: Available from Mid-2011

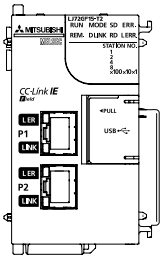
Model Number		LJ71GF11-T2
Stocked Item		S
Certification		UL • cUL • CE
Network Common Memory		32k bytes
Transient Transmission Capacity		2048 bytes
Ethernet	Communication Speed	1Gbps
	Connection Cable	An Ethernet cable that meets the 1000BASE-T standard (Category 5e or higher, shielded RJ45)
	Maximum 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	Line topology, star topology, and mix of both line topology and star topology is possible.
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)		0.89A
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
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.

Display Module Specifications

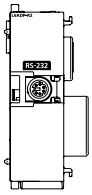
Use the Display Module for on-site maintenance and troubleshooting, directly from the PLC without a computer or software. Monitor devices, force devices and adjust intelligent function module parameters, all while using User Messages prompted by the program.

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.

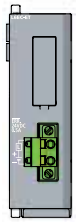
RS-232 Adapter Specifications

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 with Error Terminal

Model Number	L6EC-ET
Stocked Item	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 2.0mm² (AWG22 to 14) (Stranded wire/single wire)
Internal Current Consumption	0.06A
Weight (kg)	0.11
Dimensions (W x H x D) mm	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 Programmable Automation Controllers section for more details.

Memory Cards

Mitsubishi 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
L1MEM-2GBSD	2GB	S
L1MEM-4GBSD	4GB	S