

Modular PLCs MELSEC L series

The MELSEC 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 MELSEC L series ideal for both stand-alone and networked machines.

- Rack-free design
- CPUs packed with comprehensive built-in features/functions
- Integrated data logging

- Built-in I/O features
- Communication and networking capabilities
- High-end 4/16-axis motion expansion possible using SSCNETIII

Equipment features

The modular design of MELSEC L series allows flexible usage in a broad range of applications. The following modules are available for assembling and expanding the system:

Use of digital and special function modules

The use of digital and analog modules and most special function modules is dependent only on the maximum available number of addresses and thus on the CPU used in each case.

The built-in data logging function provides an easy way to collect information for troubleshooting, performance evaluation, and other uses. The included configuration tool makes setting up the data logging function a breeze with a step-by-step wizard like interface.

Using GX LogViewer, the captured data is easy to interpret and understand.

Communications modules

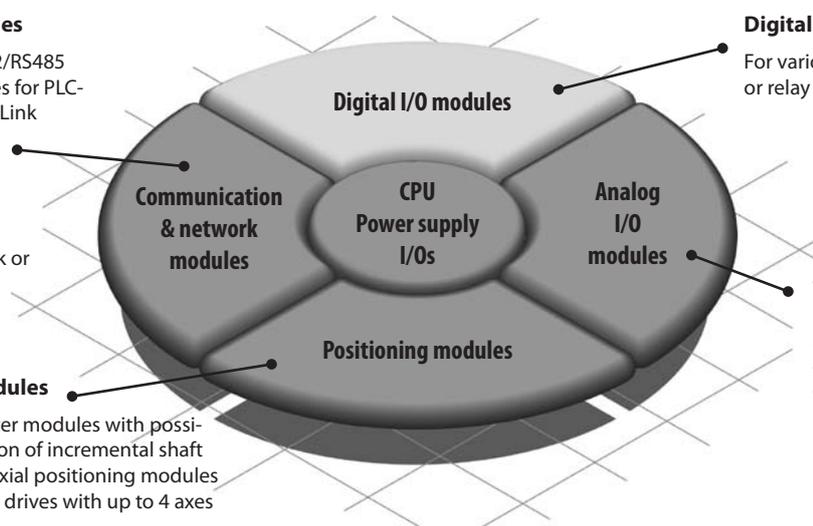
Modules with RS232/RS422/RS485 interface to connect devices for PLC-to-PLC communication. IO-Link module for the connection of intelligent sensors.

Network modules

For interfacing with CC-Link or CC-Link IE networks.

Positioning modules

High-speed counter modules with possibility for connection of incremental shaft encoder or multi-axial positioning modules for servo and step drives with up to 4 axes per module.



Digital input/output modules

For various signal levels with transistor, or relay switches.

Analog input/output modules

For processing current/voltage signals and for temperature value acquisition as well as temperature control.

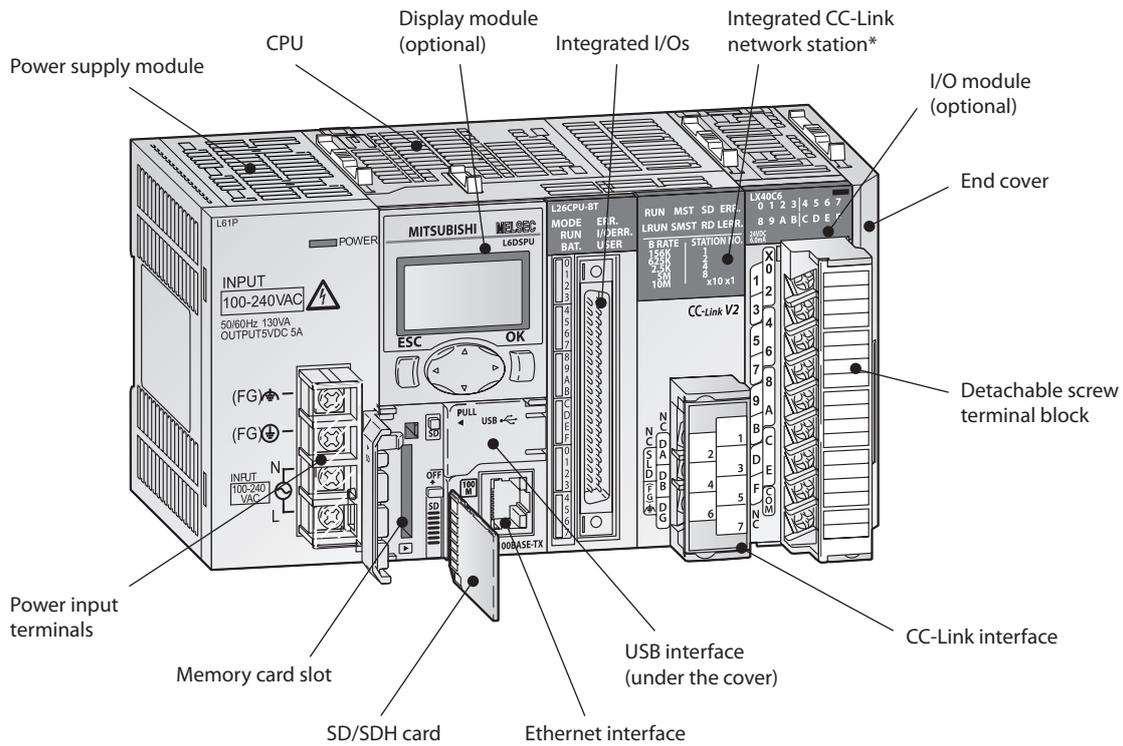
Built-in I/O features

Every MELSEC L series CPU comes with 24 points of built-in I/Os as standard. These I/O points are capable of many functions usually reserved for separate modules. System costs can be saved by using the built-in functions rather than relying exclusively on additional modules.

Function		Features
Positioning*	Control of maximum two axes	Maximum speed: 200 kpulse/s High-speed activation: 30 μ s (shortest activation time) S-curve acceleration and deceleration are supported
High-speed counter*	Two built-in channels	Maximum counting speed: 200 kpulse/s Open collector, differential line driver input High accuracy ON/OFF measurements with a resolution of 5 μ s High precision PWM control up to 200 kHz (High speed pulse output)
Pulse catch	16 input points	Minimum input response time: 10 μ s Pulse signals whose ON time is shorter than the scan time can be detected.
Interrupt input	16 interrupt input points	Built-in CPU provides high-speed processing. All input points support interrupt inputs.
General input	6 high-speed input points, 10 standard input points	Minimum input response time of high-speed input: 10 μ s Minimum input response time of standard input: 100 μ s
General output	8 output points	Output response time: 1 μ s or less

* Points used by the positioning and high speed counting functions are fixed (as in A phase, B phase, near-point dog). Custom points for these functions may not be assigned.

What a system looks like



* High-performance CPU only

System structure

The MELSEC 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. By connecting various types of modules, the system can be enhanced according to the application. Up to 10 expansion modules can be added per system configuration. As a baseless structure is employed, the space of the control panel can be used effectively without being limited by the size of the base.

MELSEC L series controllers are all-in-one programmable controllers that have the following functions built into the CPU module:

- 2 channels of high-speed counters up to 200 kHz
- Positioning possibilities for two axes, also up to 200 k pulses per second
- Built-in Ethernet communication

- Built-in I/Os which are available via a 40-pin high density connector supporting several I/O options
- High-speed data logging to the SD memory card
- CC-Link Ver. 2 Master/Slave interface (in the high-performance CPU)
- Full support in iQ Works and GX Works2

What you need

Power supply

This provides 5 V DC power for all modules on the back plane. There are two types of power supplies available, the selection is dependent on the available supply voltage.

CPU

There are several CPU types for different applications available in a range of standard, middle and high performance. All CPUs come with built-in Mini-B USB and digital I/Os for simple high-speed counting and positioning functions. Most of the CPUs have also built-in Ethernet for easy communication, along with a built-in SD/SDHC memory slot for data logging and memory storage.

The high-performance version CPU also includes a CC-Link interface for Master/Local station networking.

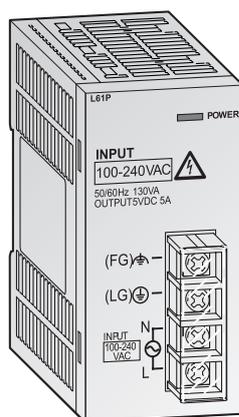
I/Os

There is a wide selection of digital input and output modules depending on the signal level, sink or source designation and density of points required. Modules are available in 16 point input or output with screw terminals mounted on the module, higher densities of 32 and 64 point require a connector, cable and terminal block.

Special function modules

For special applications analog I/O and intelligent modules for motion, positioning, high-speed counting, communication, and networking are available.

Power supply modules



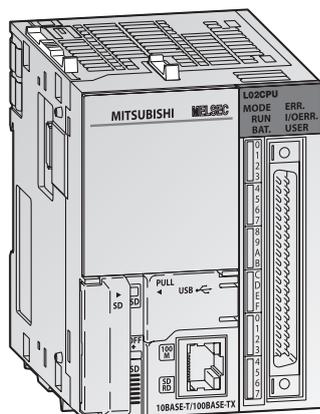
These units power the CPU and all connected modules. The choice is dependent on the input power that is available.

- The power module L61P can be used worldwide with its wide input range from 100 to 240 V AC at 50/60 Hz.

- For applications powered by 24 V DC the L63P is used.
- LED indicator for operating status
- Screw terminals for power input on the front side

Specifications	L61P	L63P
Input voltage	(+10 %, -15 %) V AC (+30 %, -35 %) V DC	100–240 —
Input frequency	Hz	50/60 (±5 %) —
Inrush current	20 A within 8 ms	100 A within 1 ms (24 V DC input)
Max. input apparent power	130 VA	—
Max. input power	—	45 W
Rated output current (5 V DC)	A	5 5
Overcurrent protection (5 V DC)	A	≥5.5 ≥5.5
Overvoltage protection	V	5.5–6.5 V 5.5–6.5 V
Efficiency	≥70 %	≥70 %
Max. compensation time at power failure	ms	Within 10 ms Within 10 ms (24 V DC input)
Dimensions (WxHxD)	mm	45x90x109 45x90x109
Order information	Art. no.	238063 238064

CPU modules



The CPU modules are the heart of a MELSEC L series system and contain a diverse range of control functions. Every CPU comes with 24 points of built-in I/Os.

For many standard applications the L02SCPU(-P) or L02SCPU(-P) is appropriate. When higher operation processing speed is needed the L06CPU(-P) or L26CPU(-P)(BT) is the right choice. The L26CPU(-P)(BT) provides the highest program capacity. This CPU provides furthermore a built-in CC-Link connectivity.

- High-speed processing
- Large memory capacity
- Integrated Data logging
- Integrated USB port for programming
- Integrated Ethernet interface for efficient network or PC communication
- SD card memory slot for quick and easy backup of programs and parameters

Specifications	L02SCPU/ L02SCPU-P	L02CPU/ L02CPU-P	L06CPU/ L06CPU-P	L26CPU/ L26CPU-P	L26CPU-BT/ L26CPU-PBT	
Control method	Stored program repeat operation					
Number of I/O points	1024/8192*	1024/8192*	4096/8192*	4096/8192*	4096/8192*	
Programming language	Function block, relay symbol language, MELSP3 (SFC), MELSP-L, structured text (ST), logic symbolic language					
Basic operation processing speed	60 ns	40 ns	9.5 ns	9.5 ns	9.5 ns	
Program size (no. of steps)	20 k	20 k	60 k	260 k	260 k	
Memory capacity	program memory	byte	80 k	80 k	240 k	1040 k
	memory card	—	Depends on the SD/SDHC memory card used			
	standard RAM	byte	128 k	128 k	768 k	768 k
	standard ROM	byte	512 k	512 k	1024 k	2048 k
Built-in functions	integrated I/Os	16 inputs (24 V DC)/8 outputs (5–24 V DC, 0.1 A per channel) ①				
	data logging	10 data logging settings (for each any of 32–4832 kB can be specified)				
	communication	RS232	10 BASE-T/100 BASE-TX (10/100 Mbps)	USB	USB	USB
CC-Link connectivity	—	—	—	—	CC-Link Master/ Local station (up to 10 Mbps)	
Dimensions (WxHxD)	mm	70x90x95	70x90x95	70x90x95	98.5x90x118	
Order information	Art. no.	238057/244976	263070/**	263068/**	263069/**	238056/244977

* number of points available on a program ** on request

① Model name with "P": source type digital output, model name without "P": sink type digital output.