PLC-5 Processors

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Standard PLC-5 Processors

- **Total I/O, Max.** is the actual I/O circuits, regardless of the number of connection points or I/O image bits. The number of I/O image bits (8, 16, or 32) that correspond to an I/O module limit the number of I/O at that module; however, some modules may have less I/O than I/O image bits. This includes local I/O, extended local I/O, and Universal Remote I/O combined. This does not include DeviceNet I/O.
  Any mix means that any number of the I/O can be inputs and any number can be outputs, with no placement restrictions.
  Complementary means that to configure this many I/O, pairs of modules must have duplicate addresses. This pair must be either 2 output modules sharing the same output image bits or an input module and an output module complementing each other. In either case, module placement must conform to these restrictions.
- **I/O rack** is an I/O addressing unit that can contain a max. of 128 I/O with unique addressing of I/O modules or 256 I/O with duplicate addressing of I/O modules.

Cat. No.	Processor	User Memory Words, Max.★	Memory Types	Total I/O, Max.	Analog I/O, Max.	I/O Scan Time per RackΔ
Standard PLC-5 Processors						
1785-L11B	PLC-5/11	8K	•Battery-backed static RAM •EEPROM program backup option using: 1785-ME16, -ME32, -ME64, and -M100	•512 (any mix) or •384 in + 384 out (complementary)	512	•10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s
1785-L20B	PLC-5/20	16 kB	•Battery-backed static RAM •EEPROM program backup option using: 1785-ME16, -ME32, -ME64, and -M100	•512 (any mix) or •512 in + 512 out (complementary)	512	•10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s
1785-L30B	PLC-5/30	32K	•Battery-backed static RAM •EEPROM program backup option using: 1785-ME16, -ME32, -ME64, and -M100	•1024 (any mix) or •1024 in and 1024 out (complementary)	1024	•10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s
1785-L40B	PLC-5/40	48 kB‡	•Battery-backed static RAM •EEPROM program backup option using: 1785-ME16, -ME32, -ME64, and -M100	•2048 (any mix) or •2048 in + 2048 out (complementary)	2048	•10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s
1785-L40L	PLC-5/40L	48K‡	•Battery-backed static RAM •EEPROM program backup option using: 1785-ME16, -ME32, -ME64, and -M100	•2048 (any mix) or •2048 in + 2048 out (complementary)	2048	•0.5 ms (ext. local) •10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s
1785-L60B	PLC-5/60	64 kB§	•Battery-backed static RAM •EEPROM program backup option using: 1785-ME16, -ME32, -ME64, and -M100	•3072 (any mix) or •3072 in + 3072 out (complementary)	3072	•10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s
1785-L60L	PLC-5/60L	64 kB§	•Battery-backed static RAM •EEPROM program backup option using: 1785-ME16, -ME32, -ME64, and -M100	•3072 (any mix) or •3072 in + 3072 out (complementary)	3072	•0.5 ms (ext. local) •10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s
1785-L80B	PLC-5/80	100 kB♣	•Battery-backed static RAM •EEPROM program backup option using: 1785-ME16, -ME32, -ME64, and -M100	•3072 (any mix) or •3072 in + 3072 out (complementary)	3072	•10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s
Standard PLC-5 Processors with Protected Memories						
1785-L26B	PLC-5/26	16 kB	•Battery-backed static RAM •EEPROM program backup option using: 1785-ME16, -ME32, -ME64, and -M100 •Protected	•512 (any mix) or •512 in + 512 out (complementary)	512	•10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s
1785-L46B	PLC-5/46	48K‡	•Battery-backed static RAM •EEPROM program backup option using: 1785-ME16, -ME32, -ME64, and -M100 •Protected	•2048 (any mix) or •2048 in + 2048 out (complementary)	2048	•10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s
1785-L86B	PLC-5/86	100 kB♣	•Battery-backed static RAM •EEPROM program backup option using: 1785-ME16, -ME32, -ME64, and -M100 •Protected	•3072 (any mix) or •3072 in + 3072 out (complementary)	3072	•10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s

★ Max. number of data table words and max. number of timers and counters are user-configured.
‡ Limit of 32K words per data table file.
§ Limit of 32K words per data table file and 56K words per program file.
♣ Limit of 32K words per data table file and a total data table size of 64K words. Limit of 56K words per program file.
Δ In a single chassis, extended-local or remote. For Universal Remote I/O unless otherwise specified.

Standard PLC-5 Processors (continued)

Cat. No.	Processor	Universal Remote / Extended Local-I/O / DH+ Ports (Mode)	Number of I/O Chassis, Max.			RS-232-C / 422-A / 423-A Ports‡	Backplane Current Load @ 5V
			Total	Extended Local	Universal Remote★		
Standard PLC-5 Processors							
1785-L11B	PLC-5/11	1 DH+/Remote I/O (Adap or Scan)	5	0	4	1	2.3 A
1785-L20B	PLC-5/20	1 DH+ 1 DH+/Remote I/O (Adap or Scan)	13	0	12		2.3 A
1785-L30B	PLC-5/30	2 DH+/Remote I/O (Adap or Scan)	29	0	28		2.3 A
1785-L40B	PLC-5/40	4 DH+/Remote I/O (Adap or Scan)	61	0	32 max. per I/O link		3.3 A
1785-L40L	PLC-5/40L	2 DH+/Remote I/O (Adap or Scan) 1 Extended Local I/O	61	16	32 max. per I/O link		3.3 A
1785-L60B	PLC-5/60	4 DH+/Remote I/O (Adap or Scan)	93	0	32 max. per I/O link		3.3 A
1785-L60L	PLC-5/60L	2 DH+/Remote I/O (Adap or Scan) 1 Extended Local I/O	81	16	32 max. per I/O link		3.3 A
1785-L80B	PLC-5/80	4 DH+/Remote I/O (Adap or Scan)	93	0	32 max. per I/O link		3.3 A
Standard PLC-5 Processors with Protected Memories							
1785-L26B	PLC-5/26	1 DH+ 1 DH+/Remote I/O (Adap or Scan)	13	0	12	1	2.3 A
1785-L46B	PLC-5/46	4 DH+/Remote I/O (Adap or Scan)	61	0	32 max. per I/O link		3.3 A
1785-L86B	PLC-5/86	4 DH+/Remote I/O (Adap or Scan)	93	0	32 max. per I/O link		3.3 A

★ **Universal Remote I/O Chassis** — any device with a remote I/O adapter port compatible with the Allen-Bradley Universal Remote I/O link. This includes 1771 I/O chassis, 1791 I/O blocks, PanelView displays, RediPANEL displays, Dataliner displays, 1336 drives.
‡ RS-422-A and RS-423-A both have a cable length limitation of 61 m (200 ft).

Ethernet and ControlNet PLC-5 Processors

- **Total I/O, Max.** is the actual I/O circuits, regardless of the number of connection points or I/O image bits. The number of I/O image bits (8, 16, or 32) that correspond to an I/O module limit the number of I/O at that module; however, some modules may have less I/O than I/O image bits. This includes local I/O, ControlNet I/O, and Universal Remote I/O combined. This does not include DeviceNet I/O.
  Any mix means that any number of the I/O can be inputs and any number can be outputs, with no placement restrictions.
  Complementary means that to configure this many I/O, pairs of modules must have duplicate addresses. This pair must be either 2 output modules sharing the same output image bits or an input module and an output module complementing each other. In either case, module placement must conform to these restrictions.
- **I/O rack** is an I/O addressing unit that can contain a max. of 128 I/O with unique addressing of I/O modules or 256 I/O with duplicate addressing of I/O modules.

Cat. No.	Processor	User Memory Words, Max.★	Memory Types	Total I/O, Max.	Analog I/O, Max.	I/O Scan Time per RackΔ
Ethernet PLC-5 Processors						
1785-L20E	PLC-5/20E	16K	•Battery-backed static RAM •EEPROM program backup option using 1785-ME16, -ME32, and -ME64	•512 (any mix) or •512 in + 512 out (complementary)	512	•10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s
1785-L40E	PLC-5/40E	48K‡	•Battery-backed static RAM •EEPROM program backup option using 1785-ME16, -ME32, and -ME64	•2048 (any mix) or •2048 in + 2048 out (complementary)	2048	•10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s
1785-L80E	PLC-5/80E	100K§	•Battery-backed static RAM •EEPROM program backup option using 1785-ME16, -ME32, -ME64, -M100	•3072 (any mix) or •3072 in + 3072 out (complementary)	3072	•10 ms at 57.6 kbit/s •7 ms at 115.2 kbit/s •3 ms at 230.4 kbit/s
ControlNet PLC-5 Processors						
1785-L20C15	PLC-5/20C	16K	•Battery-backed static RAM •EEPROM program backup option using 1785-ME32, -ME64, and -M100	Forcible •512 (any mix) or •512 in + 512 out (complementary) Non-forcible♦ •32000	Forcible •512 Non-forcible♦ •32000	ControlNet I/O •0.5 ms (average)♠ Universal Remote I/O •10 ms @ 57.6 kbit/s •7 ms @ 115.2 kbit/s •3 ms @ 230.4 kbit/s
1785-L40C15	PLC-5/40C	48K‡	•Battery-backed static RAM •EEPROM program backup option using 1785-ME32, -ME64, and -M100	Forcible •2048 (any mix) or •2048 in + 2048 out (complementary) Non-forcible♦ •48000	Forcible •2048 Non-forcible♦ •48000	ControlNet I/O •0.5 ms (average)♠ Universal Remote I/O •10 ms @ 57.6 kbit/s •7 ms @ 115.2 kbit/s •3 ms @ 230.4 kbit/s
1785-L80C15	PLC-5/80C	100K§	•Battery-backed static RAM •EEPROM program backup option using 1785-ME32, -ME64, and -M100	Forcible •3072 (any mix) or •3072 in + 2048 out (complementary) Non-forcible♦ •50176	Forcible •3072 Non-forcible♦ •50176	ControlNet I/O •0.5 ms (average)♠ Universal Remote I/O •10 ms @ 57.6 kbit/s •7 ms @ 115.2 kbit/s •3 ms @ 230.4 kbit/s
ControlNet PLC-5 Processors with Protected Memories						
1785-L46C15	PLC-5/46C	48K‡	•Battery-backed static RAM •EEPROM program backup option using 1785-ME32, -ME64, and -M100 •Protected	Forcible •2048 (any mix) or •2048 in + 2048 out (complementary) Non-forcible♦ •48000	Forcible •2048 Non-forcible♦ •48000	ControlNet I/O •0.5 ms (average)♠ Universal Remote I/O •10 ms @ 57.6 kbit/s •7 ms @ 115.2 kbit/s •3 ms @ 230.4 kbit/s

★ Max. number of data table words and max. number of timers and counters are user-configured.
‡ Limit of 32K words per data table file.
§ Limit of 32K words per data table file and a total data table size of 64K words. Limit of 56K words per program file.
Δ In a single non-local chassis.
♦ Non forcible I/O is only available as ControlNet I/O.
♠ With several I/O chassis connected to the processor across a ControlNet link, the average I/O scan time per I/O rack in a single chassis is 0.5 ms. However the min. time for a complete ControlNet I/O scan (network update time) is 2 ms. Therefore, with a single I/O chassis connected to the processor across a ControlNet link, the min. I/O scan time for that single I/O chassis is 2 ms. Even with several I/O chassis connected to the processor across a ControlNet link, the min. time for an individual I/O chassis to be updated is 2 ms.

Ethernet and ControlNet PLC-5 Processors (continued)

Cat. No.	Processor	ControlNet / Ethernet / Remote / Extended Local-I/O / DH+ Ports (Mode)	Number of I/O Chassis, Max.			RS-232-C / 422-A / 423-A Ports♣	Backplane Current Load at 5V
			Total★	Extended Local	Universal Remote‡		
Ethernet PLC-5 Processors							
1785-L20E	PLC-5/20E	•1 Ethernet •1 DH+ •1 DH+/Remote I/O (Adap or Scan)	13	0	12	1	3.6 A
1785-L40E	PLC-5/40E	•1 Ethernet •2 DH+/Remote I/O (Adap or Scan)	61	0	60	1	3.6 A
1785-L80E	PLC-5/80E	•1 Ethernet •2 DH+/Remote I/O (Adap or Scan)	65	0	64	1	3.6 A
ControlNet PLC-5 Processors							
1785-L20C15	PLC-5/20C	•1 ControlNet (dual media) •1 DH+ •1 DH+/Remote I/O (Adap or Scan)	77	0	12	1	2.7 A (typ) 3.0 A (max)
1785-L40C15	PLC-5/40C	•1 ControlNet (dual media) •2 DH+/Remote I/O (Adap or Scan)	125	0	60	1	3.0 A
1785-L80C15	PLC-5/80C	•1 ControlNet (dual media) •2 DH+/Remote I/O (Adap or Scan)	125	0	60	1	3.0 A
ControlNet PLC-5 Processor with Protected Memory							
1785-L46C15	PLC-5/46C	•1 ControlNet (dual media) •2 DH+/Remote I/O (Adap or Scan)	125	0	60	1	3.0 A

★ Limited by data-table size and how much data table you use for each chassis.
‡ **Universal Remote I/O Chassis** — any device with a remote I/O adapter port compatible with the Allen-Bradley Universal Remote I/O link. This includes 1771 I/O chassis, 1791 I/O blocks, PanelView displays, RediPANEL displays, Dataliner displays, 1336 drives.
§ The ControlNet I/O map table can contain up to 128 entries. Each map-table entry corresponds to one scheduled transfer of data.
♣ RS-422-A and RS-423-A both have a cable length limitation of 61m (200 ft).

Memory Devices

Cat. No.	Description	For this Product	Function	Memory Size
1785-ME16	EEPROM	Standard PLC-5 processors	Program backup	16K words
1785-ME32	EEPROM	Standard PLC-5 processors	Program backup	32K words
1785-ME64	EEPROM	Standard PLC-5 processors	Program backup	64K words
1785-M100	EEPROM	Standard PLC-5 processors	Program backup	100K words