Processor Specifications

Backplane Current	1785-L20C15: 2.7A @ 5Vdc 1785-L40C15, -L46C15, -L80C15: 3.3A @ 5Vdc
Heat Dissipation	1785-L20C15: 54 BTU/hour 1785-L40C15, -L46C15, -L80C15: 59 BTU/hour
Operating Temperature	IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock): 0-60°C (32–140°F)
Storage Temperature	IEC 60068-2-1 (Test Ab, Un-packaged Non-operating Cold), IEC 60068-2-2 (Test Bc, Un-packaged Non-operating Dry Heat), IEC 60068-2-14 (Test Na, Un-packaged Non-operating Thermal Shock): –40 to 85°C (–40 to 185°F)
Relative Humidity	IEC 60068-2-30 (Test Db, Un-packaged Non-operating Damp Heat): 5–95% non condensing
Vibration	IEC60068-2-6 (Test Fc, Operating): 2g @10–500Hz
Shock	IEC60068-2-27:1987, Test Ea (Unpackaged shock, ES#002) Operating - 30g Non-operating - 50g
Emissions	CISPR 11: Group 1, Class A
ESD Immunity	IEC 61000-4-2: 4kV contact discharges
Radiated RF Immunity	IEC 61000-4-3: 10V/m, 3V/m Broadcast Bands, with 1kHz sine-wave 80% AM from 30MHz to 1000Mhz
EFT/B Immunity	IEC 61000-4-4: ±2kV at 5kHz on communications ports
Surge Transient Immunity	IEC 61000-4-5: ±2kV line-earth(CM) on signal ports
Conducted RF Immunity	IEC 61000-4-6: 10Vrms with 1kHz sine-wave 80%AM from 150kHz to 30MHz
Enclosure Type Rating	None (open style)
Time-of-Day Clock/Calendar[1]	Maximum Variations at 60° C: ±5 min per month Typical Variations at 20° C: ±20 s per month Timing Accuracy: 1 program scan
Available Cartridges	1785-CHBM ControlNet Hot Backup Cartridge[2] (required for each processor used in a hot backup system)
	1785-RC Relay Cartridge
Battery	Allen-Bradley 1770-XYC
Memory Modules[3]	• 1785-ME32 • 1785-ME64 • 1785-M100
I/O Modules	Bulletin 1771 I/O, 1794 I/O, 1746 I/O, and 1791 I/O including 8-, 16-, 32-pt, and intelligent modules

[1] The clock/calendar will update appropriately each year.

[2] The 1785-CHBM cannot be used with the 1785-5/60C processor.

[3] The 1785-ME16 cannot be used with ControlNet PLC-5 processors.

[4] For more information, refer to publication 1770-4.1, *Industrial Automation Wiring and Grounding Guidelines*.

[5] See the Product Certification link at http://www.ab.com for Declarations of Conformity, Certificates, and other certification details.

Hardware Addressing	2-slot • Any mix of 8-pt modules • 16-pt modules must be I/O pairs • No 32-pt modules 1-slot • Any mix of 8- or 16-pt modules • 32-pt modules must be I/O pairs 1/2-slot—Any mix of 8-,16-, or 32-pt modules	
Communication	• Serial • DH+ • DH using 1785-KA • Remote I/O • ControlNet	Wire Category 2[4]
	• Relay Cartridge	Wire Category 1[4]
Location	1771-A1B, -A2B, A3B, -A3B1, -A4B chassis; left-most slot	
Weight	PLC-5/20C15: 3 lbs, 3 oz (1.45 kg) PLC-5/40C15: 3 lbs, 2 oz (1.42 kg) PLC-5/46C15: 3 lbs, 2 oz (1.42 kg) PLC-5/80C15: 3 lbs, 2 oz (1.42 kg)	
Keying	• Between 40 and 42 • Between 54 and 56	

Certifications
(when product is marked)
	UL UL Listed Industrial Control Equipment
	CSA CSA Certified Process Control Equipment
	CSA CSA Certified Process Control Equipment for Class I, Division 2 Group
	              A,B,C,D Hazardous Locations
	CE[5] European Union 89/336/EEC EMC Directive, compliant with:
	             EN 50081-2; Industrial Emissions
	             EN 50082-2; Industrial Immunity
	             European Union 73/23/EEC LVD Directive, compliant with:
	                EN 61131-2; Programmable Controllers
	C-Tick[5] Australian Radiocommunications Act, compliant with:
	                AS/NZS 2064; Industrial Emissions	

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		PLC-5/20C15	PLC-5/40C15	PLC-5/46C15	PLC-5/80C15
Maximum User Memory Words		16K	48K[1]	48K[1]	100K[2]
Maximum Total I/O	**Any Mix**	512	2048	2048	3072
	Complimentary	512 in and 512 out	2048 in and 2048 out	2048 in and 2048 out	3072 in and 3072 out
Program Scan Time		0.5 ms per K word (bit logic) 2 ms per K word (typical)			
ControlNet I/O[3]	**Transmission Rate**	5M bit/s			
	Network Update Time (NUT)	2-100 ms (user selectable)			
	Number of ControlNet Ports	1 (redundant)			
	Maximum Number of Nodes per Link without a Repeater	48—with 250 m (approx. 820 ft) cable length			
	Maximum Number of Nodes per Link with Repeaters	99			
	Maximum Link Cable Length without a Repeater	1,000 m (approximately 3,280 ft)—with 2 nodes 500 m (approximately 1,640 ft)—with 32 nodes 250 m (approximately 820 ft)—with 48 nodes			
	Maximum Number of I/O Map Entries	64	96	96	128
	Maximum DIF/DOF Size	2000 words	3000 words	3000 words	4000 words
	Maximum Link Cable Length with Repeaters	6,000 m (approximately 19,680 ft)—with 2 nodes 3,000 m (approximately 9,840 ft)—typical			
Remote I/O and DH+	**Transmission Rate**	57.6K bit/s 115.2K bit/s 230.4K bit/s			
	I/O Scan Time (Typical)	10 ms per rack @ 57.6 bit/s 7 ms per rack @ 115.2K bit/s 3 ms per rack @ 230K bit/s			
	Maximum Number of Remote I/O Racks	3	15	15	23
	Maximum Number of Remote I/O Devices	12	60	60	92
	Number of Ports Configurable for DH+ or Remote I/O (Adapter or Scanner)	1	2	2	2
	Number of Dedicated DH+ Ports	1	0	0	0
Number of Serial Ports		1			
Number of Coprocessor Ports		1			
Maximum Number of MCPs		16			

[1] The PLC-5/40C15 and -5/46C15 processors have a limit of 32K words per data-table file.

[2] The PLC-5/80C15 processor has a limit of 56K words per program file and 32 K words per data table file. The PLC-5/80C processor has 64K words of total data table space.

[3] For more information, see the ControlNet Cable System Planning and Installation Manual, publication 1786-6.2.1.