Power Supply Undervoltage Operation

SLC 500 controllers continue to operate (hold-up) for a short period of time if the input voltage to the power supply drops below the recommended operating voltage range. The controller continues to scan the user program and control I/O during this time. CPU hold-up for each power supply is shown on pages 14 and 16.

SLC 500 controllers turn OFF (stop scanning and disable outputs) if input voltage to the power supply is removed or drops below the recommended operating range for a period exceeding the CPU hold-up time. The controller resumes operation automatically when the input voltage is restored to normal.

If the input voltage to the 1746-P7 power supply falls into a range of 4 to 9V for a period exceeding the CPU hold-up time, the controller turns OFF and will not turn back ON until input voltage is increased to 11V dc.

General Specifications (1746-P1, 1746-P2, 1746-P3, and 1746-P4)

Attribute	Value			
	1746-P1	**1746-P2**	**1746-P3**	**1746-P4**
Line voltage	85...132/170...265V ac 47...63 Hz		19.2...28.8V dc	85...132/ 170...250V ac 47...63 Hz
Typical line power requirement	135VA	180VA	90VA	150VA
Inrush current, max	20 A			45 A
Internal current capacity	2 A at 5V dc 0.46 A at 24V dc	5 A at 5V dc 0.96 A at 24V dc	3.6 A at 5V dc 0.87 A at 24V dc	10.0 A at 5V dc 2.88 A at 24V dc(1)
Fuse protection(2)	1746-F1 or equivalent(3) (4)	1746-F2 or equivalent(3) (5)	1746-F3 or equivalent(3) (6)	Fuse is soldered in place.
24V dc user-power current capacity	200 mA		Not applicable	1 A(1)
24V dc user-power voltage range	18...30V dc			20.4...27.6V dc
User-supplied overcurrent protection(7), max	15 A		Not applicable	15 A
Temperature, ambient operating	0...60 °C (32...140 °F) Current capacity is derated 5% above 55 °C (131 °F).			0...60 °C (32...140 °F) no derating
Isolation(8)	1800V ac RMS for 1 s		600V ac RMS for 1 s (version B or later)	2600V dc for 1 s
CPU hold-up time(9)	20 ms (full load) 3000 ms (no load)		5 ms (full load) 1000 ms (no load)	20 ms (full load) 3000 ms (no load)

Attribute	Value			
	1746-P1	**1746-P2**	**1746-P3**	**1746-P4**
Certification (when product is marked)	UL Listed Industrial Control Equipment for Class 1, Division 2, Groups A, B, C, D Hazardous Locations			UL Listed Industrial Control Equipment
	C-UL Listed Industrial Control Equipment for Class 1, Division 2, Groups A, B, C, D Hazardous Locations			CSA Certified Process Control Equipment for Class 1, Div 2, Groups A, B, C, D Hazardous Locations
	CE(10) European Union 89/336/EEC EMC Directive, compliant with: EN 50082-2 Industrial Immunity EN50081-2 Industrial Emissions European Union 73/23/EEC LVD Directive, compliant with: EN61131-2 Programmable Controllers			
	C-Tick Australian Radiocommunications Act, compliant with: AS/NZS 2064 Industrial Emissions			

(1) The combination of all output power (5V backplane, 24V backplane, and 24V user source) cannot exceed 70 W.

(2) Power supply fuse is intended to guard against fire hazard due to short-circuit conditions. This fuse may not protect the supply from miswiring or excessive transient in the power line.

(3) Fuse sizes specified are for end-devices only. Fuse size may need to be reduced depending on the size of circuit wiring.

(4) Equivalent fuses: 250V-3A fuse, nagasawa ULCS-61ML-3, or BUSSMAN AGC 3.

(5) Equivalent fuse: 250V-3A fuse, SANO SOC SD4, or BUSSMAN AGC 3.

(6) Equivalent fuse: 125V-5A fuse, LITTLEFUSE 233.

(7) Use time-delay type overcurrent protection in all ungrounded conductors.

(8) Isolation is between input terminals and backplane.

(9) CPU hold-up time is for 0V unless specified. Hold-up time is dependent on power supply loading.

(10) See the Product Certification link at http://ab.com for Declarations of Conformity, Certificates, and other certification details.