5.1 Power Calculations

The Chassis Series-A power supply provides 24 Vdc, 5 Vdc, 3.3 Vdc, and 1.2 Vdc. Each module that is inserted into the chassis will consume a portion of the available power. The user must ensure that the planned configuration and mix of modules does not exceed the capability of the power supply. See power consumption section "Module Power Consumption Data".

5.2 Series-A Power Supply Specifications

Table 5-1 – Standard (non-redundant) Power Supply Modules

Model	**Uncoated:**	**TC-FPCXX2**	**TC-FPDXX2**
	Coated:	**TK-FPCXX2**	**TK-FPDXX2**
Input Voltage Range		85-132 VAC or 170-265 VAC (selectable)	19.2-32 VDC[1]
Input Power[2]		150 VA, 92 W	100 W
Maximum Inrush Current		15 A	30 A
Frequency Range		47-63 Hz	DC
Total power output maximum, watts		70 W @ 60 °C	70 W @ 60 °C
Backplane Output Current, Maximum[3]		1.5 A @ 1.2 V 4 A @ 3.3 V 10 A @ 5.1 V 2.8 A @ 24.0 V	
Fuse Protection[4]		non-replaceable fuse is soldered in place	
Wiring		#14 AWG (1.4 mm)	
Dimensions (L x D x H)		11.2 x 14.5 x 14.0 cm (4.41 x 5.71 x 5.51 in)	
Weight – Approximate		1.1 kg (2.5 lb.)	
Location		Left side of chassis (does not consume a slot)	

1. Input may drop to 16 V for a maximum of 2 minutes each hour for motor starting.
2. Note earlier models were rated as follows: TC-FPCXX1 -- 55 W @ 60°C; 70 W @ 45°C and TC-FPDXX1 -- 50 W @ 60°C; 70 W @ 40°C.
3. The combination of all output power (5 V backplane, 24 V backplane, 3.3 V backplane and 1.2 V backplane) cannot exceed 70 W.
4. This fuse is intended to guard against fire hazard due to short circuit conditions and may not protect the power supply from damage under overload conditions.

Table 5-2 Redundant Power Supply Modules

Model **Uncoated:**	**TC- RPCXX1**	**TC- RPDXX1**
Coated:	**TK- RPCXX1**	**TK- RPDXX1**
Input Voltage Range	85 – 265 VAC	16 – 32 VDC
Input Power	110VA, 110 W (estimated)	110 W (estimated)
Maximum Inrush Current	20 A	30 A @ 19 – 32 VDC
Frequency Range	47 – 63 Hz	DC
Total power output maximum, watts	75 W @ 60 C	75 W @ 60 C
Backplane Output Current, Maximum[1]	1.5 A @ 1.2 V 4 A @ 3.3 V 13 A @ 5.1 V 2.8 A @ 24.0 V	
Input Power Wiring	#14 AWG (1.4 mm)	
Annunciation User Connection[2]	Solid state relay rated for 120 VAC/DC at 100ma maximum	
Dimensions (L x D x H)	14.4 x 13.7 x 17.5 cm (5.67 x 5.39 x 6.89 in)	
Weight – Approximate	1.1 kg (2.5 lb.)	
Redundant Power Supply Cable Model (3ft)	TC-RPSC03 (one required per power supply)	
Power Supply Cable Weight – Approximate	0.57 kg (1.25 lb.)	
Location[3]	Upright mounting, typically above/below chassis to be powered.	

1. The combination of all output power (5 V backplane, 24 V backplane, 3.3 V backplane and 1.2 V backplane) cannot exceed 75 W.
2. In order to pass certain input power surge testing for CE certification, the length of the wiring from this relay must be limited to ten (10) meters.
3. It is not recommended to mount the power supply above/below its partner power supply as this could create ambient temperatures that are greater than 60 C within 1.0 inch of the bottom of the power supply.

Table 5-3 Redundant Power System Chassis Adaptor

Model **Uncoated:**	**TC-RPSCA2**
Coated:	**TK-RPSCA2**
Dimensions (L x D x H)	3.4 x 14.4 x 15.0 cm (1.34 x 5.67 x 5.91 in.)
Weight – Approximate	0.228 kg (0.50 lb.)
Location	Left side of chassis (does not consume a slot)
Environmental Conditions	See Table 3.
Chassis compatibility[1]	TC-FXX042, TC-FXX072, TC-FXX102, TK-FXX102, TC-FXX132, TK-TXX132, TC-FXX172

1. The Chassis Adapter Module will only mount to Chassis model numbers identified above due to a physical interlock. These chassis models are rated for the 13 A supplied by the redundant power supplies. Earlier versions of the chassis were only rated for 10 A.

The Redundant Power Supply System is designed with the following features:

- Current Sharing Control between each supply – for maximum power supply life
- Error Detection – for maximum security
- Error Annunciation – for immediate notification
- LED Indication – indicating redundant, non-redundant, and failure conditions

6. General Module Specifications

Table 6-1 General Environmental and Agency Certifications

Parameter	Specification	
Environmental Conditions	0 to 60 °C (32 to 140°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing ≤ 1°C/min. (≤ 5°C/min. storage)	
Coated Models (TK-xxxxxx)[2]	Mild (G1) Moderate (G2) or Harsh (G3)	
	Operative and Storage Limits	**Transportation Band**
Vibration (3 axes) Frequency Acceleration Displacement	 10 to 60 Hz 0.5 g max. 0.1 inches	 10 to 60 Hz 1 g max. 0.1 inches
Mechanical Shock Acceleration Duration	 5 g max. 30 ms max.	 20 g max. 30 ms max.
Barometric Pressure Altitude	-300 to +3000 m	Any
Agency Certification (when product is marked)	UL LISTED	UL 508 Industrial Control Equipment
	CSA FM APPROVED	Class I, Div 2, Groups A, B, C & D Hazardous and Ordinary locations (Maintenance may require a hot work permit)
	CE	89/336/EEC, EMC Directive EN 50081-2, Emissions, Industrial EN 50082-2, Immunity, Industrial
	(C-Tick)	Meets requirements of the Australian Radiocommunications Act of 1992, Section 182, relating to electromagnetic compatibility.
Removal/Insertion Under Power (RIUP)	**NOT PERMITTED** when equipment is installed in a Class I, Division 2, Hazardous (Classified) Location. **PERMITTED** when equipment is installed in ordinary, non-hazardous, locations (I/O modules reload automatically)	

The above environmental and agency specifications apply to all Experion Chassis Series A models, including Controllers, Power Supplies and I/O, except where noted.

- The maximum relative humidity specification applies up to 40°C. Above 40°C the RH specification is de-rated to 55% to maintain constant moisture content.
- With an enclosure.
- The 1/2AA Control Processor Lithium Battery (TC-BATT01) has a non-restricted classification due to its size. It can be shipped without any special documentation or note on the shipping list. The battery is specified for operation from -55 °C to +85 °C.

CE-Mark Approval. The C200 and Series-A I/O system fully meet stringent industrial CE-Mark (European Community) immunity and emissions requirements.