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

Table 6-3: Chassis - Series A Network and Specialty I/O Module Model Numbers

Description	Chassis Slots Used	Model Number
Specialty Modules		
PI (High Speed Pulse Input). 8-high speed counter inputs & 2- On/Off outputs. This module uses a 36 pin Terminal Block (TC-TBCH). Corresponding A-B model number is 1756-IJ4.	1	TK-MDP081
SI (Serial Interface) module. Provides 2-Serial Channels to communicate with smart devices.	2	TC or TK-MUX021
C200 Control Processor For complete information, consult the C200 Specification document.	2	TK-PRS021
RM (Redundancy Module) to support C200 redundancy	2	TK-PRR021
Communication/ Network/ Gateway Modules		
PBIM (PROFIBUS DP Interface Module) *Order directly from SST* For complete information, consult the PBIM Specification document.	1	SST-PFBCLX
DeviceNet Bridge Module. *Order directly from Allen-Bradley* For complete information, consult the DeviceNet Specification document.	1	1756-DNB
IOLIM (I/O Link Module), Interface for PMIO. For complete information, consult the PMIO Specification document.	2	TK-IOLI01
CNI (Single media Type)	1	TC-CCN014
CNI (Dual Media Type)	1	TC OR TK-CCR014
Ethernet Module	1	TK-FTEB01

6.2 Series-A Chassis Summary

Table 6-4 – Series-A Chassis Types & Specifications

Table 7. TC-FXX041, TC-FXX071, TC-FXX102, TC-FXX132, TC-FXX171, TK-FXX101, TK-FXX131			
Model	**Module slots**	**Dimensions (with mounting tabs & power supplies) W x H x D**	**Approx. weight (without modules)**
TC-FXX042	4	26.3 x 16.9 x 14.5 cm (10.3 x 6.7 x 5.8 in)	0.75 kg (1.6 lbs)
TC-FXX072	7	36.8 x 16.9 x 14.5 cm (14.5 x 6.7 x 5.8 in)	1.1 kg (2.4 lbs)
TC-, TK-FXX102	10	48.3 x 16.9 x 14.5 cm (19.0 x 6.7 x 5.8 in)	1.45 kg (3.2 lbs)
TC-, TK-FXX132	13	58.8 x 16.9 x 14.5 cm (23.1 x 6.7 x 5.8 in)	1.9 kg (4.2 lbs)
TC-FXX172	17	73.8 x 16.9 x 14.5 cm (29.1 x 6.7 x 5.8 in)	2.2 kg (4.8 lbs)
Minimum Chassis-to-Cabinet Vertical Distance		15.2 cm (6.0 in)	
Minimum Chassis-to-Cabinet Horizontal Distance		10.2 cm (4.0 in)	
Minimum Chassis-to-Chassis Vertical Distance		20.3 cm (8.0 in)	
Minimum Chassis-to-Chassis Horizontal Distance		10.2 cm (4.0 in)	
Type of mount		Panel mount	
Environmental Conditions Agency Certification		Same as Power Supply Specifications	
Minimum Enclosure Depth		20.3 cm (8.0 in)	