Trusted™ Power System

Introduction

The Trusted™ Power System is a high density flexible power supply designed to convert main line voltages of either 110V or 240Vac. Outputs are either 24Vdc for Trusted™ product or 28Vdc adjustable field power.

The Trusted™ Power System consists of a 1U Power Shelf with mechanical support, containing up to three 750W Power Packs. The Power Packs load share in configurations using one or more Power Shelves. Each Power Pack has an individual supply connection via a mechanically retained IEC320 type connector. Each Power Shelf can supply 2250Watts of power or 1500Watts with n+1 redundancy from a single source. Multiple units can be connected for further capacity or redundancy requirements.

Diagnostics information of Power Pack status is provided via the Power Port, which connects to the rear of the Power Shelf. This device monitors input and output conditions and reports out of range faults and over temperature/fan failure using relay contacts. The Power Port also allows connection of the optional rack mounted Power Controller for live configuration of output voltage and current, monitoring up to 12 Power Packs in 4 Power Shelves.

Features

- Redundant and N+1 configurations
- Hot replaceable power Packs
- Current sharing
- Current limiting
- Power factor correction
- Diagnostics contacts
- Configurable output voltage
- Input/output fail diagnostics per power pack

1. Product Range

Catalogue No.	Product name	Description
T8230	Power Shelf	19” x 1U chassis for up to 3 Power Packs. Includes 4U fixing kit, Power Port (with push fit BLZF 3.5/10 connector), mains plugs and retaining clips.
T8231	Power Pack 24Vdc	750Watt, universal input, 24Vdc out.
T8232	Power Pack 28Vdc	750Watt, universal input, 28Vdc out.
T8233	Power Port	Plug in diagnostic interface.
T8234	Power Controller	For live adjustment of output voltage. 19” x 1U.
T8235	Power Shield	Covers unused Power Pack positions
TC-323	Power Shelf Interconnect	For connection to a Power Controller or for current sharing

Table 1 T823X Power System Product Range

4.5. Output Specification

Parameter	Min	Typ	Max	Unit	Note
V_{OUT} set point: T8231 T8232		 24 28		 Vdc Vdc	
Regulation (line, load, temperature & set point)	-2		2	%	Measured at remote sense
Remote-sense Drop			0.5	Vdc	
I_{OUT} (rated): T8231 ($24V_{OUT}$) T8232 ($28V_{OUT}$)	 0 0		 31.25 26.78	 Adc Adc	 750W maximum 750W maximum
Ripple (20MHz bandwidth)			150	mVp-p	
Noise (20MHz bandwidth)			300	mVp-p	Under any load conditions
Transmission Noise (C message)			45	dBmc	
Output Rise Time	10		100	mS	Rise from 10% to 90% of final output level (resistive load)
Overvoltage Protection	29		32	Vdc	Reset by cycling ac input, on/off, or reinsertion
Output Current Limit (Steady state)			40A	Adc	
Transient Response Voltage Range	 -2		 2	 %	25% step load transient with slew rate 0.1A/us within the range from 25% to 75% of full load
Active Current Sharing Differential			±3.2	A	Single-wire current share at full load
Efficiency	80 83.5	81 84		% %	At full load, 120Vac with ORing diode At full load, 264 Vac with ORing diode
Reserve Output Current Protection					ORing diode
Start-Up delay		1.3	2	s	Measured from application of valid ac voltage
Turn-On delay			250	ms	Measured from DC on/off

Table 5 Output Specification

9. Power System Specification

Voltage Range	
Input	90V ac to 264V ac
Output	24V dc to 28V dc
Frequency Range	47Hz to 63Hz
Inrush Current	50A Max per Pack
Power Factor	0.95 min, 0.99 typical
Efficiency	78 – 84%
Output Power	750W per Power Pack
Power Hold-up Time	20ms
Operating Temperature	0^0C to 60^0C (30^0 to 140^0 F)
Operating Humidity	5 to 95%, non-condensing
Environmental Specifications	Refer to Document N^o 552517
Power Shelf dimensions	
Height:	43mm (1.71in)
Width:	483mm (19in)
Depth:	340mm (13.36in)
Weight Data	
T8231,T8232 Power Pack	2.7kg
T8230 Shelf (without supports)	4.4kg
UL Approvals	
Power Supplies, Information Technology Equipment Including Electrical Business Equipment - Component	E223750
Power Supplies, Medical and Dental - Component	E223749