

PROTECTION CHARACTERISTICS					
Parameter	Conditions	Min.	Typ.	Max.	Units
Over Current Protection	V2, auto-recovery	110		150	%
	V3; non-resettable fuse <sup>1</sup>			1.5	Adc
Over Voltage Protection <sup>2</sup>	Latching	110		140	%Vdc
Over Temperature Protection	Auto-recovery				
Primary Heatsink Temperature				130	°C
Secondary Temperature				130	
Remote Sense Short Circuit Protection			Complies		--
Remote Sense Reverse Connection Protection			Complies		--

<sup>1</sup>OCP of the 12V Fan (V3) output is provided by an SMD fuse (accessible from top) rated at 1.5A; therefore if ruptured the 12V Fan output will not be available and the fuse shall require to be replaced.

<sup>2</sup>Refers to percentage of nominal voltage

ISOLATION CHARACTERISTICS					
Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation	Primary to Chassis	1500			Vac
	Primary to Secondary (2xMOPP)	4000			
	Secondary to Chassis <sup>1</sup>	1500			
	Output to Output <sup>1</sup>	1500			
Earth Leakage Current (under normal conditions)	264Vac, 60Hz, 25°C			400	µAac

<sup>1</sup> Meets PoE isolation limits

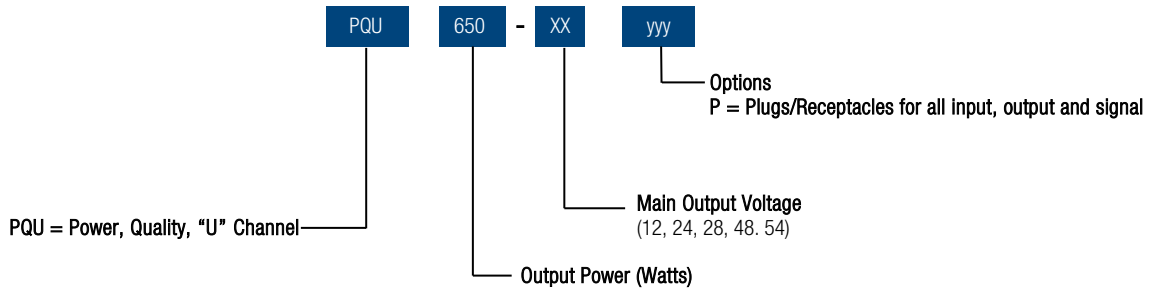
CURRENT SHARING OPTION	
Model Number	Description
All PQU650 Refer to ACAN-107 for additional details	<p>Main output current share is achieved using the "droop" method. Nominal output voltage is achieved at 50% load; the output voltage increases/decreases (approximately <math>\pm 3\%</math> of nominal voltage) with decreasing/increasing (respectively) load current. This regulation window does not include the additional tolerance due to line, temperature, long term stability etc.</p> <p>Startup of parallel power supplies is not internally synchronized. No more than 800W combined power is allowed at start-up. To account for <math>\pm 10\%</math> full load current sharing accuracy, and the reduction in full load output voltage due to droop, available output power must be derated by 15% when units are operated in parallel. Current sharing can be achieved with or without remote sense connected to the common load.</p> <p>External ORing protection is recommended (see Application notes, ACAN-105 for additional details); Aux (V2) outputs can be tied together for redundancy but total combined output power must not exceed 2.5W; external ORing devices are recommended to preserve redundancy.</p> <p>It is not recommended that the 12V Fan (V3) outputs are connected in parallel since these outputs are only semi regulated.</p>

EMISSIONS AND IMMUNITY		
Characteristic	Standard	Compliance
Input Current Harmonics	IEC/EN 61000-3-2	Class A
Voltage Fluctuation and Flicker	IEC/EN 61000-3-3	Complies
Conducted Emissions	CISPR 32/EN 55032	Class B
	FCC Part 15	Class B
Radiated Emissions	CISPR 32/EN 55032	Class B
	FCC 15.109 - 3 meter	Class B
ESD Immunity	IEC/EN 61000-4-2	Level 4, Criterion 2
Radiated Field Immunity	IEC/EN 61000-4-3	Level 3, Criterion A
Electrical Fast Transient Immunity	IEC/EN 61000-4-4	Level 4, Criterion A
Surge Immunity	IEC/EN 61000-4-5	Level 3, Criterion A (Com. Mode: 2kV 12 OHM, Diff. Mode: 1kV, 2ohm)
Radiated Field Conducted Immunity	IEC/EN 61000-4-6	Level 3, 10V/m, Criterion A
Magnetic Field Immunity	IEC/EN 61000-4-8	Level 3, Criterion A
Voltage dips, interruptions	IEC/EN 61000-4-11	Level 3, Criterion B

EMI CONSIDERATIONS
<p>For optimum EMI performance, the power supply should be mounted to a metal plate grounded to all 4 mounting holes of the power supply. To comply with safety standards, this plate must be properly grounded to protective earth (see mechanical dimension notes). Pre-compliance testing has shown the stand-alone power supply to comply with EN55032 class B radiated emissions with a metal enclosure with grounded base plate. See PQU-COVER for details - testing was based on adding a toroid (4 turns of both main output wires wound as common mode choke on FAIR-RITE#5961002701). Radiated emission results vary with system enclosure and cable routing paths.</p> <p>A minimum 10% load current is required, on the main output.</p>

STATUS AND CONTROL SIGNALS		
Parameter	Models	Conditions
PS_ON Connector J3 Pin 4	All Models (Except as noted)	<p>This pin can be left unterminated (or alternatively pulled high to +5V_AUX; Connector J3 Pin 1) to (enable) turn on the main output. The +5V_AUX output is independent of the PS_ON signal, and comes up automatically when the input AC or input DC voltage is applied (within their respective specified operating ranges).</p> <p>If it is desired to turn off the Main Output (during normal operation) then this pin can be pulled "low" (sink current &gt;2mA) to +5V_AUX_RTN.</p>
PWOK Connector J3 Pin 2	All Models	<p>The PWOK is a combined digital signal that signifies the status of the Main V1 output. It changes state due to loss of the incoming AC source and any condition that causes the Main V1 DC output shutdown (JVP, OCP, OTP protection).</p> <p>The output is via an open drain CMOS buffer that transitions high 15-25ms after the main output is within regulation; it transitions low at least 1msec</p>

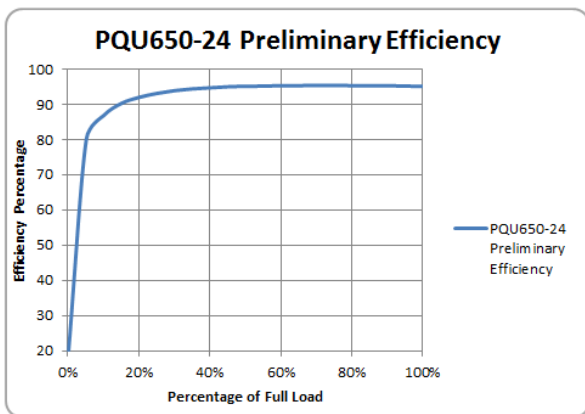
**PART NUMBER STRUCTURE**



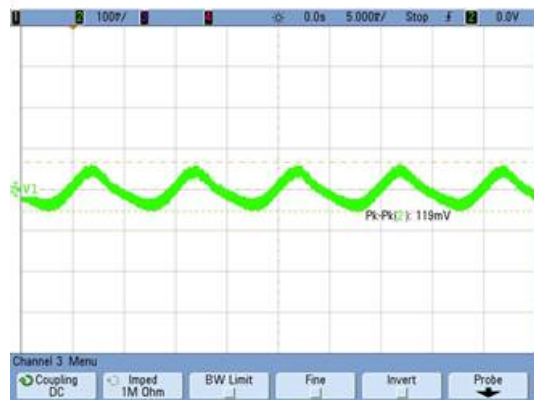
Examples: PQU650-24 = Base 24V Model; no options  
PQU650-24P = Plug/Receptacles for all input, output and signal connections

**PERFORMANCE TYPICAL DATA EXAMPLES (BASED ON 24V VARIANT)**

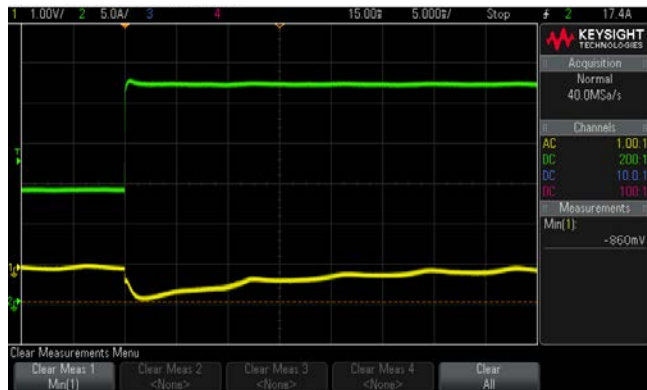
Efficiency 24V Model



Typical Ripple & Noise (24V Model)



Transient Performance, 24V Model Half to Full Load



NB: Waveforms as shown include the effects of 3% droop regulation.  
Inrush Current; 264Vac Input, Cold Start, 10.5Apk

Transient Performance, 24V Model Full to Half Load



Hold Up Time; 90Vac; 650W

