

The logo for solo, featuring a stylized green swoosh to the left of the word "solo" in a blue, sans-serif font.

Ultra compact 500W and 1000W single output power supplies

- *High Efficiency*
- *Convection Cooled*
- *Digital Communications*



Ultra-high efficiency 1U size

FEATURES

- Single output: 24V or 48V
- EN60950 2nd Edition & EN60601-1 2nd and 3rd Edition
- Ultra high efficiency, >92%
- Low profile: 1U height (40mm)
- Convection Cooled 500W
- Fan Cooled 1000W (variable speed fan)
- 12V/300mA bias standby voltage provided
- Remote ON/OFF Signal
- Power Good Signal
- MIL810G
- 2 MOPP
- SEMI F47 Compliant
- Optional I²C PMBus™ Communications
- Optional OR-ing Function
- 5 Year Warranty
- Adjustable output voltage
- Product Options: Conformal Coating, Low Leakage Current and Ruggedised

APPLICATIONS INCLUDE

- Industrial
- Test & Measurement
- Medical
- Hi-Rel COTS
- Communication

The Xsolo family of single output power supplies provides up to an incredible 1008W in an extremely compact package.

Available in two package types, the high efficiency Xsolo delivers an incredible **convection cooled 504W** in an open-frame U-channel form factor and up to **1008W in an enclosed, fan cooled chassis**.

The Xsolo platform comes with a host of features including: variable speed fan, 12V/300mA isolated bias supply, remote ON/OFF, output voltage control and parallel operation for higher power applications. Nominal output voltages are 24V and 48V with wide adjustment ranges and user defined set-points. Xsolo carries **dual safety certification, EN60950 2nd Edition** for Industrial Applications and **EN60601-1 2nd and 3rd Edition** for Medical Applications, meeting the stringent creepage and clearance requirements, 4KVAC isolation and <300uA leakage current. Xsolo is designed to meet **MIL810G** and is also compliant with **SEMI F47** for voltage dips and interruptions as well as being compliant with all relevant EMC emission and immunity standards.

Optional features include I²C digital communications and OR-ing Function for N+1 redundancy. The product can also be conformal coated and ruggedised for use in harsh environments. With convection cooled power capability of over 500W, the Xsolo is ideal for use in a wide range of applications: industrial, Hi-Rel MIL-COTS applications, as well as acoustically sensitive laboratory and medical environments.



XS Models

	Model	Power (W)	Output Voltage	Output Current (A)	Medical Approval UL/EN60601-1 3rd edition	Industrial Approval UL/EN60950 2nd edition
XS	XS500-24	504	24	21.0	Yes	Yes
	XS1000-24	1008	24	42.0	Yes	Yes
	XS500-48	504	48	10.5	Yes	Yes
	XS1000-48	1008	48	21.0	Yes	Yes

	Model	Vnom (V)	Power (W)	Description	Set Point Adjust Range (V)	Dynamic Vtrim Range (V)	I _{max} (A)	Remote Sense	Power Good
XS	XS500-24	24	504	Convection Cooled U-Channel	19-28	14-28	21.0	Yes	Yes
	XS1000-24	24	1008	Enclosed Fan Cooled	19-28	14-28	42.0	Yes	Yes
	XS500-48	48	504	Convection Cooled U-Channel	36-58	29-58	10.5	Yes	Yes
	XS1000-48	48	1008	Enclosed Fan Cooled	36-58	29-58	21.0	Yes	Yes

*Full part numbering information including product options and ordering information on page 5.

INPUT						
Parameter	Conditions/Description	Min	Nom	Max	Units	
Input Voltage Range	Universal Input 47-440Hz	85		264	VAC	
		120		380	VDC	
Power Rating	XS500		504		W	
	XS1000		1008		W	
Input Current	XS500		5		A	
	XS1000		10		A	
Inrush Current	230VAC @ 25°C			25	A	
Undervoltage Lockout	Shutdown	65		74	VAC	
Fusing	XS500 250VAC		F8A HRC			
	XS1000 250VAC		F12A HRC			
OUTPUT						
Parameter	Conditions/Description	Min	Nom	Max	Units	
Output Voltage Range	XS500/1000-24: Multi-turn potentiometer	19		28	VDC	
	XS500/1000-24: Dynamic Vtrim range	14		28	VDC	
	XS500/1000-48: Multi-turn potentiometer	36		58	VDC	
	XS500/1000-48: Dynamic Vtrim range	29		58	VDC	
Output Current Range	XS500-24			21	A	
	XS1000-24			42	A	
	XS500-48			10.5	A	
	XS1000-48			21	A	
Load & Cross Regulation	For 25% to 75% load change			±0.2	%	
Transient Response	For 25% to 75% load change			Voltage Deviation	2.5	%
				Settling Time	500	µs
Ripple and Noise	XS500/1000-24: 20MHz		240		mV pk-pk	
	XS500/1000-48: 20MHz		480		mV pk-pk	
Overvoltage Protection	XS500/1000-24: Latching	33	34	37	VDC	
	XS500/1000-48: Latching	61	63	69	VDC	
Overcurrent Protection	Straight line with hiccup activation at <30% of Vnom.	105	115	130	%	
Line Regulation	For ±10% change from nominal line		±0.5		%	
Remote Sense				0.5	VDC	
Overshoot				2	%	
Rise Time	Monotonic		3	5	ms	
Turn-on Delay	From AC in		500	800	ms	
	From Remote On/Off		10		ms	
Hold-up Time	For nominal output voltages at full load.	17			ms	
GENERAL						
Parameter	Conditions/Description	Min	Nom	Max	Units	
Isolation Voltage	Input to Output	4000			VAC	
	Input to Chassis	1500			VAC	
	Output to Chassis	1500			VDC	
Efficiency	230VAC, 1008W @ 24V/48V		>92		%	
Safety Agency Approvals	EN60601-1 2nd and 3rd Edition, cTUVus 60601-1 EN60950 2nd Edition, cTUVus 60950					
Leakage Current	264VAC, 60Hz, 25°C			300	µA	
	264VAC, 60Hz, 25°C (Option 4)			150	µA	
Signals	See Page 3					
Bias Supply	Always on, current 300mA		12.0		VDC	
Weight	XS500		1.1		Kg	
	XS1000		1.3		Kg	
MTBF	Telecordia SR-332, 40°C ground benign, parts count.			550,000	Hours	
EMC						
Parameter	Standard	Level		Units		
Emissions						
Conducted	EN55011, EN55022, FCC		Level B			
Radiated	EN55011, EN55022, FCC		Level B			
Harmonic Distortion	EN61000-3-2 Class A		Compliant			
Flicker & Fluctuation	EN61000-3-3		Compliant			
Immunity						
Electrostatic Discharge	EN61000-4-2		Level 2			
Radiated Immunity	EN61000-4-3		Level 3			
Fast Transients-Burst	EN61000-4-4		Level 3			
Input Line Surges	EN61000-4-5		Level 3			
Conducted Immunity	EN61000-4-6		Level 3			
Voltage Dips	EN61000-4-11, SEMI F47 Compliant.(1)		Compliant			
ENVIRONMENTAL						
Parameter	Conditions/Description	Min	Nom	Max	Units	
Operating Temperature		-40		+70	°C	
Storage Temperature		-40		+85	°C	
Derating	See Page 4 for full temperature deratings					
Relative Humidity	Non-condensing	5		95	%RH	
Shock and Vibration	Designed to meet MIL810G (2)		55		G	
Altitude				3000	m	

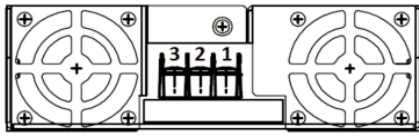
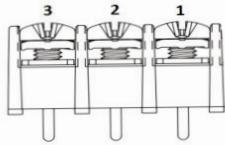
Note 1. SEMI F47 compliant at input voltages >160VAC. Consult Excelsys for details.

Note 2. Consult Excelsys for HALT report.

Connectors

Input Connector J7

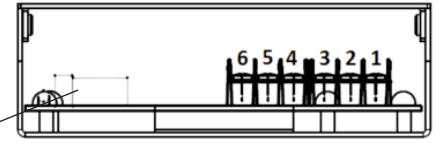
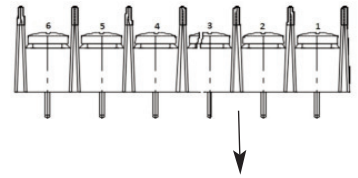
Connector, Barrier Terminal Block, Vertical, 3 position, Pitch:0.375in
Molex - 38720-7503



O/P Connector J10 and J12

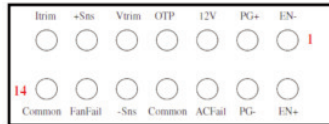
Connector, Barrier STRIP DL 3CIRC .325
Tyco - 2-1437667-5

*Note maximum current per screw terminal is 20Amps.



Output Signal Connector J5

Connector, Header 14POS 2MM Pitch T/H
Molex - 87831-1420



J5 Mating Connectors

Locking Molex 51110-1451; Non Locking 51110-1450;
Crimp Terminal: Molex p/n 50394

***I²C Interface (Option)**

The I²C PM Bus compatible interface can be used for monitoring the output voltage and current. It can also be used to manage real time data for the PSU.

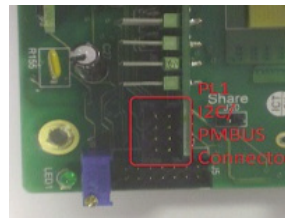
For full details on PM Bus please contact sales@excelsys.com.

PMBus Connector:

PL1: Molex - 87833-0831

PL1 Mating Connector:

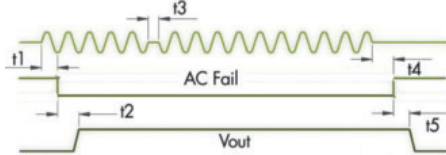
Locking Molex 51110-0860; Non Locking 51110-0850; Crimp Terminal: Molex p/n 50394



Connector Details

Pin	Input	Output	Signal	PMBus Connector
1	L	+Vo	EN-	ALERT
2	N	+Vo	EN+	SDA
3	E	+Vo	PG+	SCL
4		-Vo	PG-	PMB_Control
5		-Vo	12V	Not Used
6		-Vo	ACFail	Not Used
7			OTP	Not Used
8			Common	GND
9			Vtrim	
10			-Sns	
11			+Sns	
12			FanFail	
13			Itrim	
14			Common	

AC Fail Signal



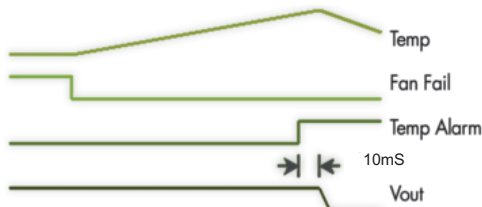
- 80ms < t1 < 600ms
- 10ms < t2 < 20ms
- t3 = 10ms
- t4 > 10ms
- t5 > 2ms

AC Fail

AC Mains Fail signal is implemented by an Opto-isolated signal with a maximum sink current of 4mA. During normal operation the transistor is ON. When the input voltage is lost or goes below 80Vac, the opto-transistor is turned OFF at least 10mS before loss of output regulation (at nominal voltage or below).

Temperature Alarm

Open collector signal indicating that excessive temperature has been reached due to fan failure or operation beyond ratings. This signal is activated at least 10mS prior to system shutdown.



Fan Fail

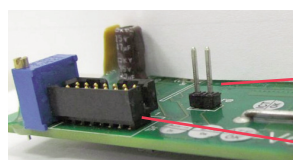
Open collector signal indicating that at least one of the fans has failed. This does not cause power supply shutdown. The power supply will continue to operate until 10ms after the temperature alarm signal is generated.

Paralleling Xsolo's

To achieve increased currents Xsolo products can be paralleled.

To connect in parallel the outputs must be trimmed to within 5mV of each other and then the current share header J20 must be added to each Xsolo product.

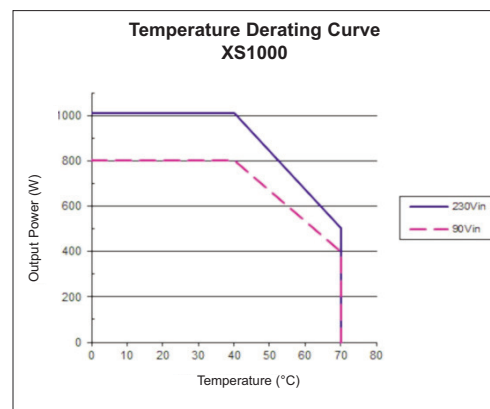
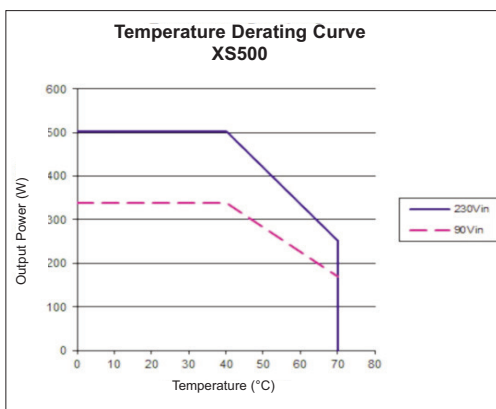
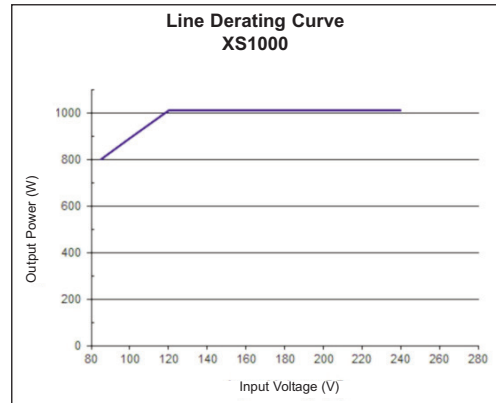
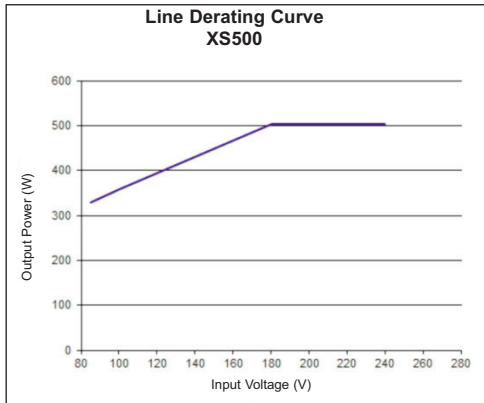
Recommended Jumper for J20: HARWIN M7567-05
(Jumper Socket, Black, 2.54mm, 2-way)



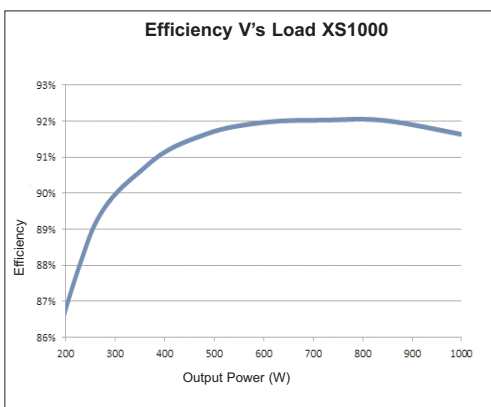
J20 (Attach jumper here)

Output Signal Connector J5

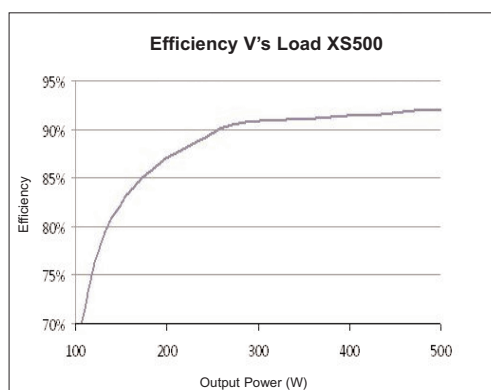
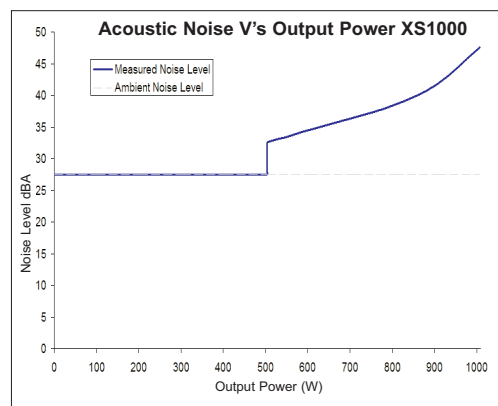
Derating Curves



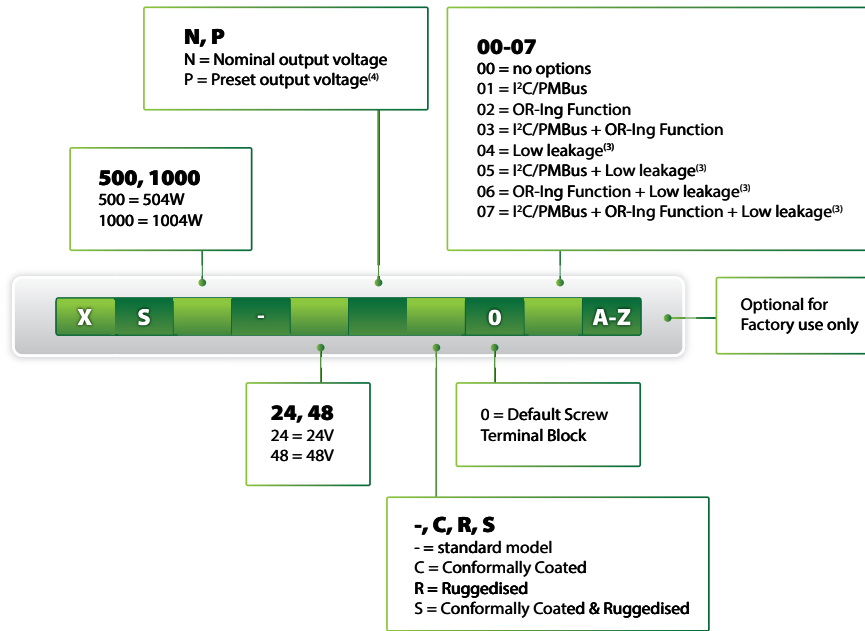
Efficiency Curve



Acoustic Noise Curve



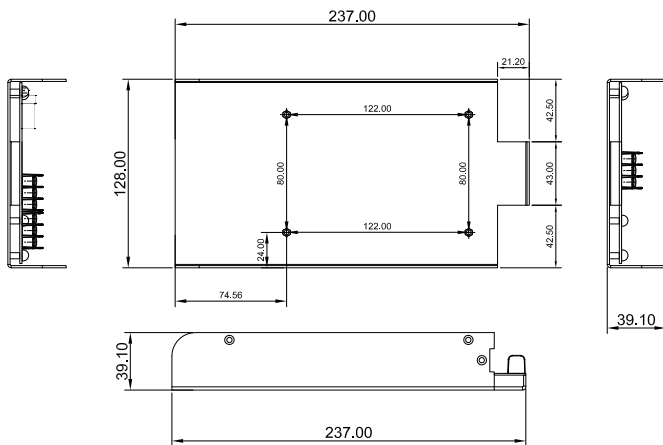
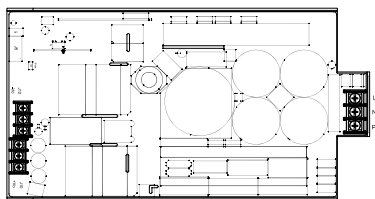
Configuring your Xsolo



Example 1: XS1000-24N-000 = Xsolo 1000W, 24V output with no options
 Example 2: XS1000-24N-003 = Xsolo 1000W, 24V output with I²C/PMBus and OR-Ing function.

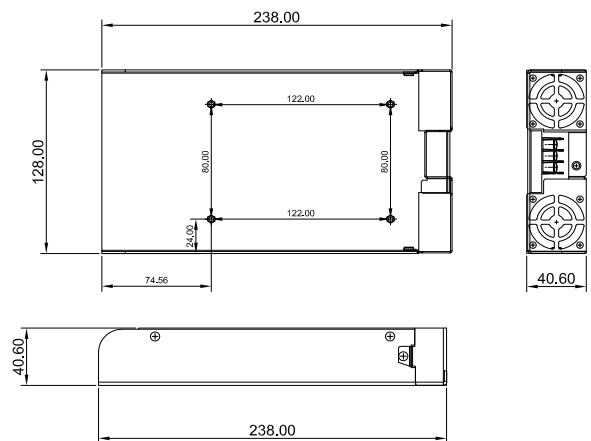
Mechanical Drawings

XS500 Mechanical Specifications
(All dimensions in mm)



Mounting Holes
4 M4 threaded PEMS on Base. Max Screw Penetration is 6mm from Base

XS1000 Mechanical Specifications
(All dimensions in mm)



Mounting Holes
4 M4 threaded PEMS on Base. Max Screw Penetration is 6mm from Base

Note 3. System design with low leakage capacitors requires particular attention to EMI. Please consult Excelsys for application details.
 Note 4. Contact sales@excelsys.com for details including MOQs on alternative preset output voltages.
 Note 5. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
 Note 6. All specifications at nominal input, full load, 25°C unless otherwise stated.