Python 120

- ***MIL-STD-704 / 1275 / DEF STAN 61-5 part 6 issue 5 Wedgelock cooled 120W VPX power supply.***
- ***28V or 48V Input to 5V, 3v3, ±12V with integrated MIL-STD-461E filtering, surge protection & optional holdup.***
- ***Wide -46...90C operating temperature range***
- ***Military / Avionic 28V or 48V DC input with complete under and over voltage control***
- ***Four fully controlled and regulated outputs with power share capability***
- ***High shock and vibration withstand for harsh environments***

Description

The **Python 120** is an industry standard conduction cooled VPX power supply.

The unit is manufactured in the UK, and is assembled in our facility certified to AS-9100, J-STD-001, & IPC-A-610 Class 3.

General

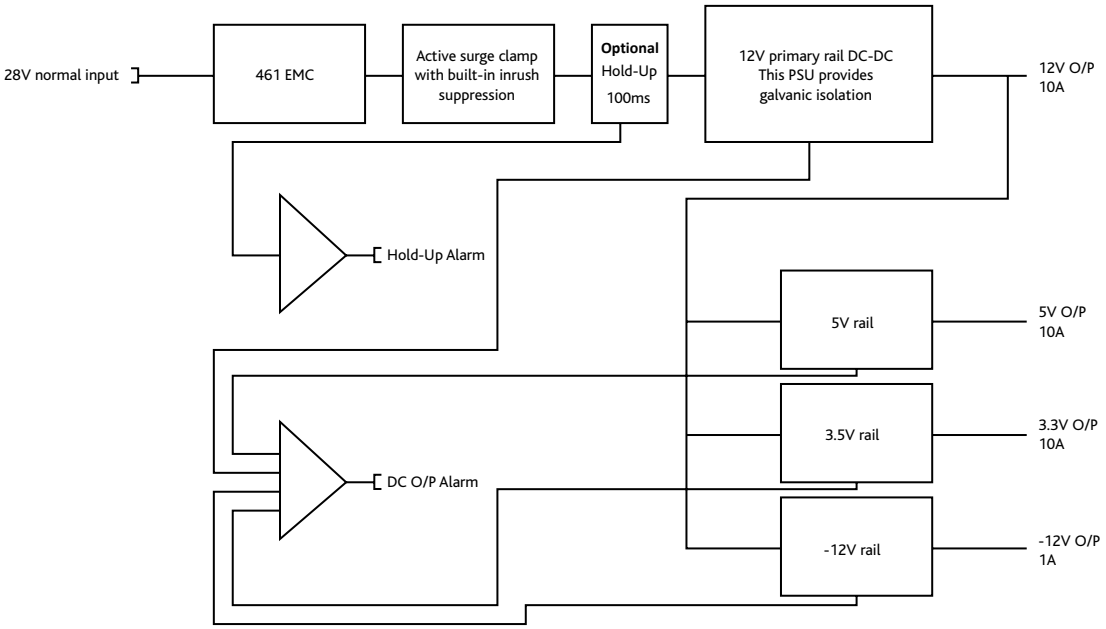
3U High
1" slot wide
Wedge lock cooled through chassis

Features

Wide DC input ranges; 18..38V DC, 36V..72V DC
MIL-STD-1275A-D, MIL-STD-704A-F, DO-160E/F,
MIL-STD-461E EMC compliance,
DEF STAN00-35 & MIL STD 810D Environmental compliance,
VITA46 (VPX) compliant mechanical interface,
120W Output power over the full input range,
Four independently regulated outputs with flexible power capability,
Efficiency up to 85% (typical),
3 Year Warranty,
CE Marked LVD and EMC,
Optional 100ms Hold Up Time (75W load),
Over Temperature Shut Down at 110°C

Environmental

Operating Temp:	-46°C to +90°C baseplate,
Storage Temp:	-55°C to +105°C,
Humidity:	5-95% RH, non-condensing,
Altitude:	51,000 ft (DO160E/F),
Safety Approvals:	EN60950-1, UL60950-1



Power Supply Schematic diagram

Input

Input Voltage	18..38V DC
Input Current	4.6A @ 28v DC 120W output

General

Input to Output Isolation	3000 VAC RMS Test Voltage
Input to Case Isolation	1500 VAC RMS Test Voltage
Output to Case Isolation	500V RMS
Hold Up Time	100mS with 75W load

Outputs

This unit has a total of four outputs, each individually controlled and regulated

Output 1 : 5V DC	**Min**	**Typical**	**Max**	
Output Voltage		5V DC		Setpoint ±1%, nominal output, full load, 25°C
Voltage Sense (Vs)		-		Compensates up to 500mV drop in output cables
Load Current		10A		
Current Limit		11A		Constant current topology
Ripple & Noise		50mV		Pk-Pk nominal input, full load, 20MHz bandwidth
Overvoltage Setpoint	6.03V	6.25V	6.47V	
Load Regulation			±0.02%	±0.2% No load to full load, nominal input
Line Regulation	±0.02%			
Minimum Load		0		No minimum load
Dynamic Regulation		1%		Max deviation of output for 10% load change
Recovers within	1ms			
Rise time		20ms		Up to 20ms, load dependent.
Temperature Coefficient		-	±0.002%	- ±0.005% , (range -40...95°C)

***Outputs** (cont.)*

Output 2 : 3.3V DC	**Min**	**Typical**	**Max**	
Output Voltage		3.3V DC		Setpoint ±1%, nominal output, full load, 25°C
Voltage Sense (Vs)		-		Compensates up to 500mV drop in output cables
Load Current		10A		
Current Limit		11A		Constant current topology
Ripple & Noise		50mV		Pk-Pk nominal input, full load, 20MHz bandwidth
Overvoltage Setpoint	6.03V	6.25V	6.47V	
Load Regulation			±0.02%	±0.2% No load to full load, nominal input
Line Regulation	±0.02%			
Minimum Load		0		No minimum load
Dynamic Regulation		1%		Max deviation of output for 10% load change
Recovers within	1ms			
Rise time		20ms		Up to 20ms, load dependent.
Temperature Coefficient		-	±0.002%	- ±0.005% , (range -46...95°C)

Output 3 : +12V DC	**Min**	**Typical**	**Max**	
Output Voltage		+12V DC		Setpoint ±1%, nominal output, full load, 25°C
Voltage Sense (Vs)		-		Compensates up to 500mV drop in output cables
Load Current		10A		
Current Limit		11A		Constant current topology
Ripple & Noise		50mV		Pk-Pk nominal input, full load, 20MHz bandwidth
Overvoltage Setpoint		13V		
Load Regulation			±0.02%	±0.2% No load to full load, nominal input
Line Regulation	±0.02%			
Minimum Load		0		No minimum load
Dynamic Regulation		1%		Max deviation of output for 10% load change
Recovers within	1ms			
Rise time		20ms		Up to 20ms, load dependent.
Temperature Coefficient		-	±0.002%	- ±0.005% , (range -46...95°C)

Output 4 : -12V DC	**Min**	**Typical**	**Max**	
Output Voltage		-12V DC		Setpoint ±1%, nominal output, full load, 25°C
Voltage Sense (Vs)		-		Compensates up to 500mV drop in output cables
Load Current		1A		
Current Limit		1A		Constant current topology
Ripple & Noise		120mV		Pk-Pk nominal input, full load, 20MHz bandwidth
Overvoltage Setpoint		13V		
Load Regulation			±0.02%	±0.2% No load to full load, nominal input
Line Regulation	±0.02%			
Minimum Load		0		No minimum load
Dynamic Regulation		1%		Max deviation of output for 10% load change
Recovers within	1ms			
Rise time		20ms		Up to 20ms, load dependent.
Temperature Coefficient		-	±0.002%	- ±0.005% , (range -46...95°C)

Environmental

Operating Temperature	-46°C to +90°C
Storage Temperature	-55°C to +105°C
Over Temperature Shut Down	110°C (automatic re-start at 95°C)
Cooling	Conduction
Operating Humidity	DO-160E Section 6 category B
Operating Altitude	51,000 ft
Operating below sea level	1,500 ft
Shock & Vibration	DO-160E Shock +-6g 11ms any direction, BS EN60068-2-27 15g shocks 11ms ½ sine Vibration DO-160E Section 8 Procedure 8.7.2 Test level C1

WEEE Directive 2002-96-EC
RoHS Directive 2002-95-EC
REACH Regulations EU-1907-2006
HAZMAT compliant
Unit is conformal coated with non fungus growth compliant coating.

Lifetime

The unit design lifetime is minimum 15 years and the unit does not contain any parts that require periodic maintenance.

EMC and Safety

Safety Approvals	EN60950-1:2006 , UL60950-1
Emissions	MIL-STD-461E
ESD Immunity	EN61000-4-2, Level 3
Radiated Immunity	EN61000-4-3, 10V/m, Level 3 Performance Criteria A
Surge	EN61000-4-5, Installation class 3, Perf Criteria A
Conducted Immunity	EN61000-4-6, 10V RMS, Perf Criteria A

Signals and Indicators

Global PSU OK Open collector	Closed = OK, Open = FAIL
Holdup Active Open collector	Closed = Holdup active, Open = Normal mode

Part Numbering

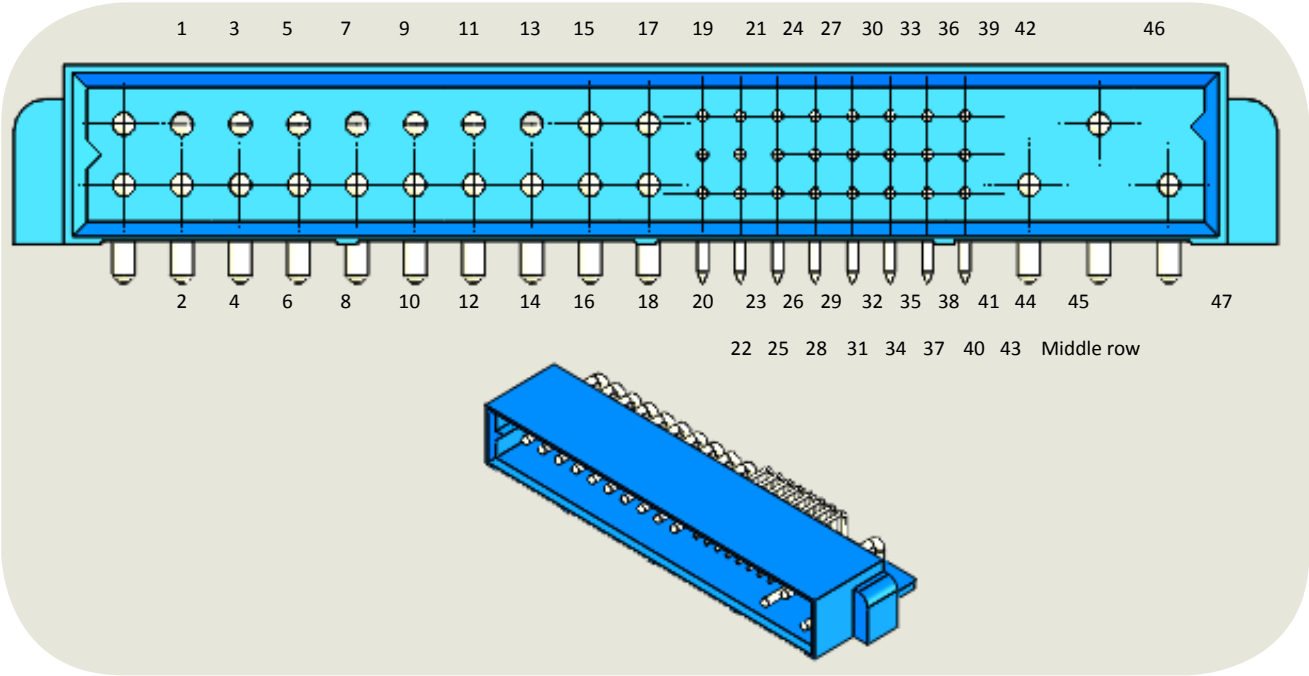
PYTHON120S28Q-05-3V3-12-(12)-MWA (28V input, Option A Pinout)
PYTHON120S28Q-05-3V3-12-(12)-MWB (28V input, Option B Pinout)
PYTHON120S48Q-05-3V3-12-(12)-MWA (48V input, Option A Pinout)
PYTHON120S48Q-05-3V3-12-(12)-MWB (48V input, Option B Pinout)

Connector Pinouts

OPTION A PICMG 2.11 CONNECTOR PIN OUT PICMG 2.11 Type	
1,2,3,4	+5V O/P
5, 6, 7, 8, 9, 10, 11, 12, 19, 22, 24	0V O/P
13,14,15,16,17,18	+3.3V O/P
20	+12V
21	-12V O/P
27	O/P Enable/Disable
29,32	Ext. Hold-up +
30	5V Sense (Opt)
33	3.3V Sense (Opt)
35	5V Power Share
36	12V Sense (Opt)
38	Hold-up Active
39	O/P Inhibit
41	3.3V Power Share
42	O/P Fail
44	12V Power Share
45	Chassis GND
46	+V I/P
47	-V I/P

OPTION B CONNECTOR PIN OUT PICMG 2.11 Type	
1,2,3,4,5,6	+3.3V O/P
7, 8, 9, 10	+5V O/P
11	+12V O/P
12,13,14,15,16,17,18,19,20,22,24	Ground
32	O/P Fail
35	5V Power Share
38	Hold-up Active
41	3.3V Auxiliary Output
44	12V Auxiliary Output
45	Chassis GND
46	+V I/P
47	-V I/P

Alarm signals:
Low = Fault High = OK



Ordering Information

The PYTHON 120 is designed and manufactured by On-Systems.

To request a quotation or place an order,
please contact your sales representative,
or the On-Systems sales office.

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