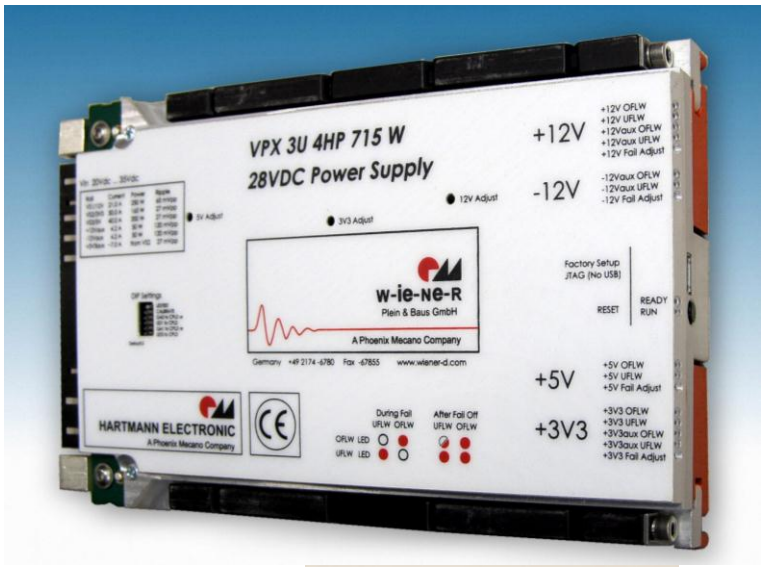
OpenVPX™	**VPX Power 3U / 6U**	HARTMANN ELECTRONIC A Phoenix Mecano Company

VPX

OpenVPX™

Power Supplies 3U and 6U



3 Power Supply 6U 8HP 1300W, DC/DC, air & conduction cooled

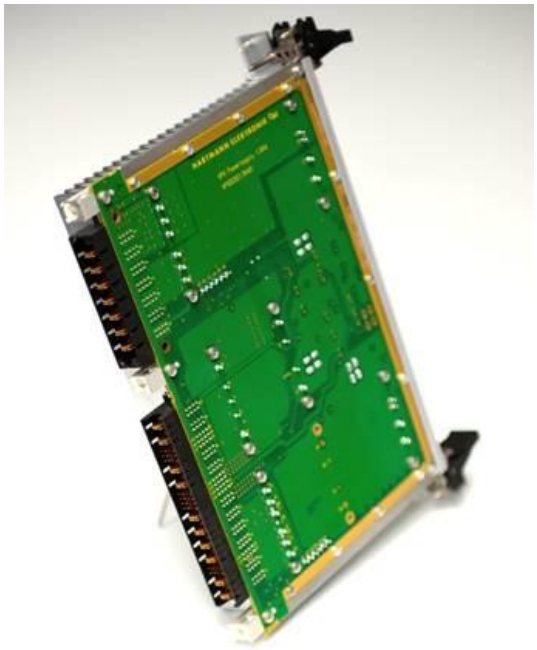
3.1 Key Features

- Compliant to VITA 62 baseline specification
- 1.300 W over all
- up to 100A for 12V
- up to 70A for 5V, (80A)*
- up to 30A for 3.3V, (50A)*
- +12V / -12V AUX 1,25A
- up to 92% efficiency
- -40 to +85°C Operating Temperature
- Voltage sense controlled
- 24V or 48V DC INPUT
- conduction cooled or air cooled

*customized possible

24V air cooled 12V: D575.00501

- 24V DC Input (18V to 36V)
- +12V / -12V AUX 1.25A 87% efficency
- +3.3V AUX 30A 85% efficency
- +12V 100A 92% efficency



24V air cooled 5V: D575.00512

- 24V DC Input (18V to 36V)
- +12V / -12V AUX 1.25A 87% efficency
- +3.3V AUX 30A 85% efficency
- + 5V 70A 90% efficency
- +12V 50A 92% efficency

- **24V conduction cooled 12V: D575.00501CC**
- **24V conduction cooled 5V: D575.00631**

- **All version also available in 48V DC power in**

All voltage converters are isolated (1500V isolation voltage) and fed from the same 24V main supply (18V – 36V) protected by two (DCin1, DCin2") 40A fuses.

The "Power LED" is controlled by the "Power Good Signal" of the 12V converter.

The output voltages (+12V, +5V, 3,3V) are sensed for over- and under voltages which are monitored from the control logic in every converter. Any failure on the output voltages are signalled on the front panel by corresponding FAIL LED (OFF). In according to Vita62, the "FAIL-Signal" is connected to the "FAIL Pin" (B2) at the P1 connector. If all voltages are in normal conditions all FAIL LED's (green) are ON
Figure 5 shows an overview over the front panel elements.

3.1.1 Front panel

Figure 5 Front panel 6U

3.1.2 LED Status:

Power (LED green ON/OFF)	Indicates input power is present (LED ON)
CH1/2 (LED green ON/OFF)	
CH3 (LED green ON/OFF)	
+12V AUX (LED green ON/OFF)	Indicates the output power:
-12V AUX (LED green ON/OFF)	Power is present (inside of the specified range) = LED ON
+3,3V AUX (LED green ON/OFF)	Power is not present (not inside of the specified range) = LED OFF
+10V AUX (LED green ON/OFF)	

3.1.3 Air cooled version

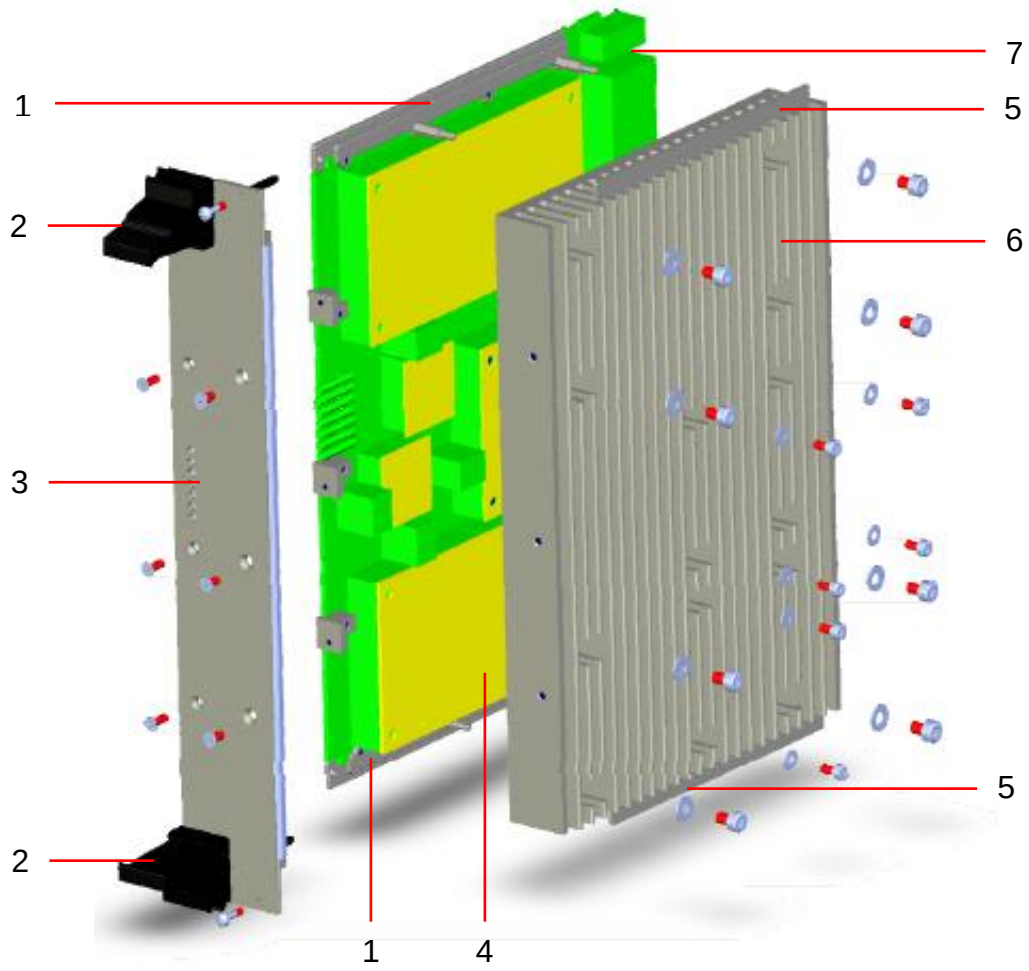


Figure 6 Air cooled version

1. Guide rail
2. Handle
3. Front panel
4. Converter (1 – 4)
5. Runner
6. Heat sink
7. Printed circuit board

3.1.4 Conduction cooled version

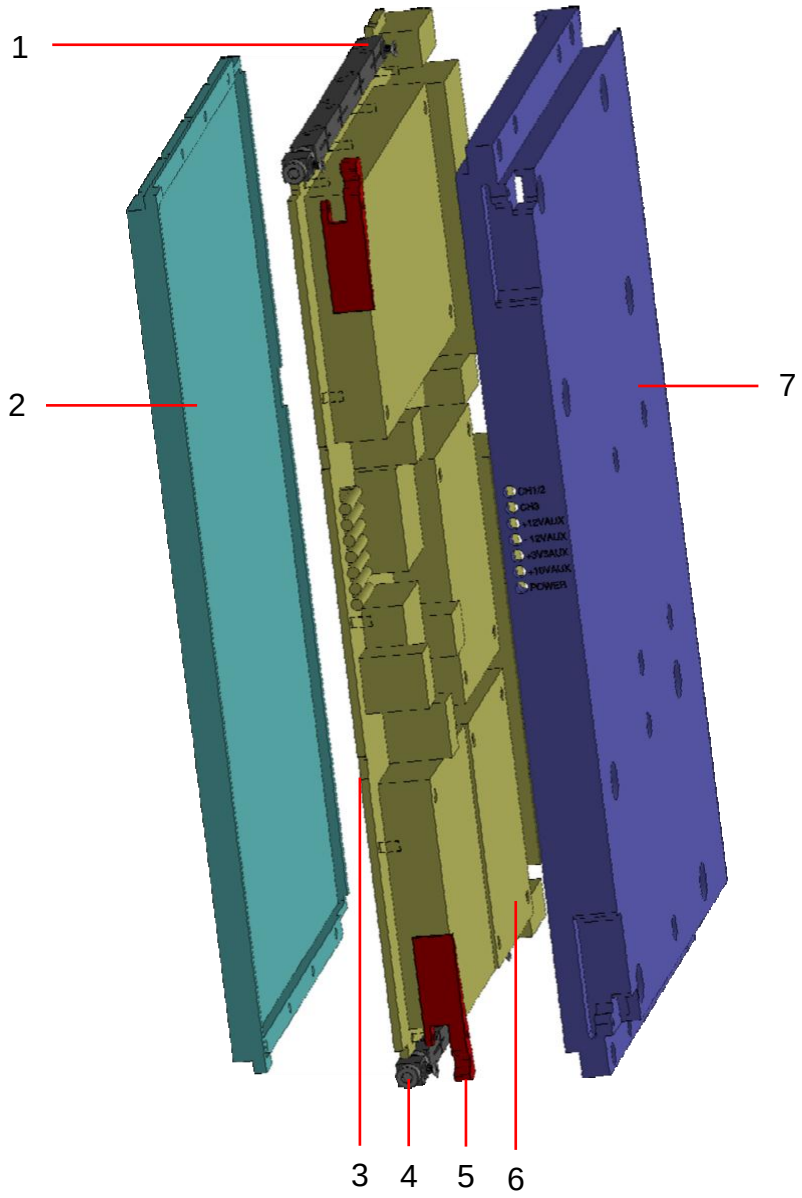


Figure 7 Conduction cooled version

1. Upper wedgelock
2. Bottom cover
3. Printed circuit board
4. Lower wedgelock
5. Handle
6. Converter (1 – 4)
7. Top cover

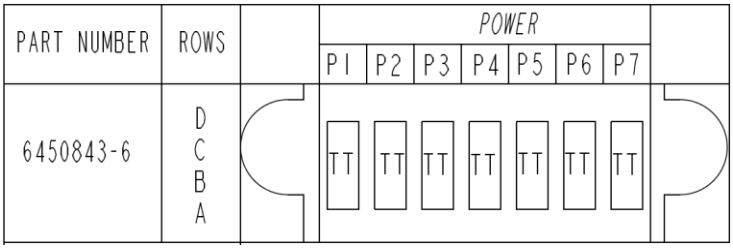
3.1.5 Technical Specification

Form Factor	6U
Pitch	8HP
Weight	2,0 kg
Storage Temperature	-55°C to 85°C
Operating Temperature	-40°C to 85°C
Input to Output Insulation	1500V
Main Power	
Maximum Output Power	1300W
Input Voltage 12V / 3,3V AUX / 5V	24Vdc (18Vdc – 36Vdc)
24V air cooled 12V: D575.00501	
Max. Currents 12V / 3,3V AUX	100 A / 30 A
Efficiencies 12V / 3,3	92% / 85%
24V air cooled 5V: D575.00512	
Max. Currents 12V / 3,3V AUX / 5V	50 A / 30 A / 70 A
Efficiencies 12V / 3,3V AUX / 5V	92% / 85% / 90%
Minimum Turn ON Voltage 12V / 3,3V / 5V	16,9V / 16,9V / 19,9V
Minimum Turn OFF Voltage 12V / 3,3V / 5V	16,0V / 16,0V / 18,8V
Hysteresis 12V / 3,3V / 5V	1,1V / 0,9V / 0,9V
Startup Delay Time from application of input voltage 12V / 3,3V / 5V	20ms / 18ms /. 18ms
Startup Delay Time from on/off 12V / 3,3V / 5V	3ms / 3ms / 3ms
Fixed Switching Frequencies 12V / 3,3 / 5V	120 kHz / 125 kHz / 130 kHz
Max. Output Ripple and Noise: 12V / 3,3 / 5V	15 mVrms / 4 mVrms / 4 mVrms
(0-20 MHz Bandwidth)	65 mVpp / 27 mVrms / 27 mVpp
Line Regulation: 12V / 3V3 / 5V.	40 mV / 2 mV / 4 mV
Load Regulation: 12V / 3V3 / 5V	70 mV / 2 mV / 4 mV
Overvoltage Protection: 12V / 3V3 / 5V	14,4V / 4,1V / 6,1V
Temperature Protection Sensing Point (identical to case)	85°C (Latching)
Maximum Internal Working Temperatures	115°C
Auxiliary +/-12V Power	
Input Voltage	24Vdc (18Vdc – 36Vdc)
Maximum Current	1,25 A
Input Under-Voltage Turn ON 18V / 24V / 36V	16,2V / 17,0V / 17,8V
Input Under-Voltage Turn OFF 18V / 24V / 36V	15,1V / 16,0V / 16,7V
Input Over-Voltage Turn ON 18V / 24V / 36V	37,8V / 40,0V / 41,7V
Input Over-Voltage Turn OFF 18V / 24V / 36V	38,6V / 40,7V / 42,6V
Fixed Switching Frequency	900 kHz
Efficiency	86,5%
Max. Output Ripple and Noise (0-20 MHz Bandwidth)	140 mVpp
Load Transient Recovery Time	100 µs
Over Current Protection	15A

Connector

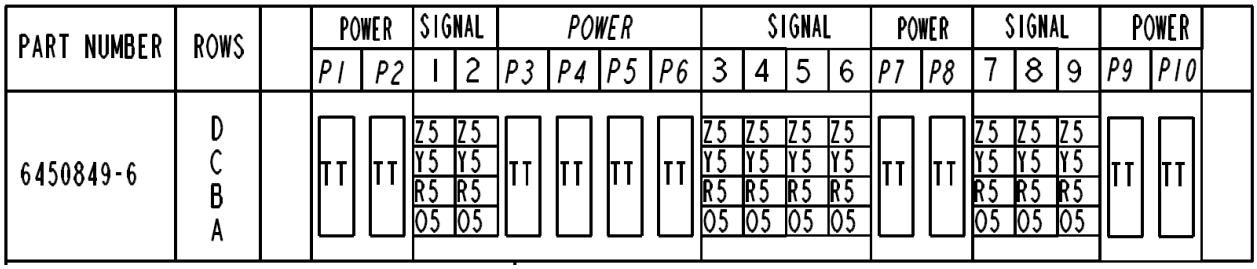
Vita 62 Tyco 6450843-6, 6450849-6

3.1.6 P0 Connector Pin Out



Pin Number	Voltage	Current (A)	Pin Name
P7	+DC_IN_1	40	+DC_In/cCL/L1
P6	+DC_IN_2	40	+DC_IN/L2
P5	-DC_IN	40	-DC_IN/L3
P4	-DC_IN	40	-DC_In/cCN
P3	n/c		POS_FILT_OUT
P2	n/c		NEG_FILT_OUT
P1	CHA_GND	40	CHASSIS

3.1.7 P1 Connector Pin Out



Pin Number	Voltage	Current (A)	Pin Name
P10	PO12	40	PO1
P9	PO13	40	PO2
A9	PO12_SENSE	<1A	PO1_SENSE
B9	PO12_SENSE	<1A	PO2_SENSE
C9	PO3_SENSE	<1A	PO3_SENSE
D9	n/c	<1A	UD0
A8	PO12_GND_SENSE	<1A	PO1_SENSE_RTN
B8	PO12_GND_SENSE	<1A	PO2_SENSE_RTN
C8	PO3_GND_SENSE	<1A	PO3_SENSE_RTN
D8	n/c	<1A	UD1
A7	PO12_SHARE	<1A	PO1_SHARE
B7	PO12_SHARE	<1A	PO2_SHARE
C7	PO3_SHARE	<1A	PO3_SHARE
D7	GND	<1A	SIGNAL_RETURN
P8	GND	40	POWER_RETURN
P7	GND	40	POWER_RETURN

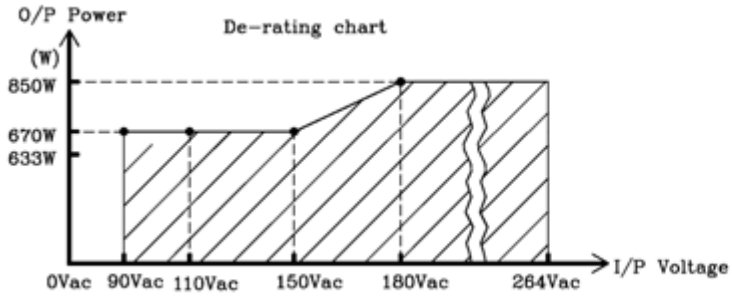
A6	n/c	<1A	SM2
B6	n/c	<1A	SM3
C6	-12V_AUX	<1.5A	-12V_AUX
D6	n/c	<1A	SYSRESET*
A5	n/c	<1A	GAP*
B5	n/c	<1A	GA4*
C5	n/c	<1A	SM0
D5	n/c	<1A	SM1
A4	n/c	<1A	GA3*
B4	n/c	<1A	GA2*
C4	n/c	<1A	GA1*
D4	n/c	<1A	GA0*
A3	n/c	<1A	UD2
B3	+12V_AUX	<1.5A	+12V_AUX
C3	n/c	<1A	NED
D3	n/c	<1A	NED_RETURN
P6	PO3	40	PO3
P5	PO3	40	PO3
P4	GND	40	POWER_RETURN
P3	GND	40	POWER_RETURN
A2	n/c	<1A	VBAT
B2	PWROK	<1A	FAIL*
C2		<1A	INHIBIT*
D2	PS_ON	<1A	ENABLE*
A1	n/c	<1A	UD3
B1	C	<1A	UD4
C1	C	<1A	UD5
D1	n/c	<1A	UD6
P2	3.3V_AUX		3.3V_AUX
P1			POWER_RETURN

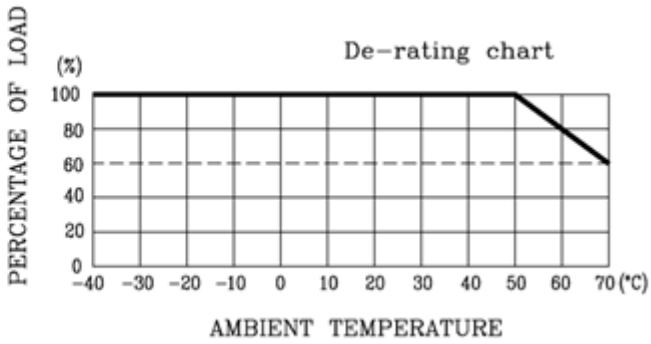
4 Power Supply 6U 10HP 850W, AC/DC, air cooled

4.1 Key Features

- Form factor: 6U/10HP
- Efficiency: 86% at 230VAC
- Input Frequency: 47-63Hz
- Inrush Current: 10A (rms) at 230VAC,
  37.2A (peak) at 230VAC
- Input Current: 7.1A at 115VAC,
  4.3A at 230VAC
- Output Power: 670W at 90-180VAC,
  850W at 180-264VAC
- Hold-Up Time: 5.3ms at 115VAC,
  2.2ms at 230VAC
- Line Regulation: Typ. 1%
- Load Regulation: VO1/2/3 typ. ± 2%
- Noise & Ripple: Typ 1% pk-pk.
- Current Sharing: Active current sharing at VO1,2,3
- DC OK Signal: Available for each output
- Power OK Signal: Available for each output
- Operating temperature: -40°C to + 70°C
- Storage temperature: -45°C to + 85°C
- Air cooled version, at least 800LFM
- compliant to VITA 62 baseline specification

Order number: D575.00660





4.1.1 Technical Specification

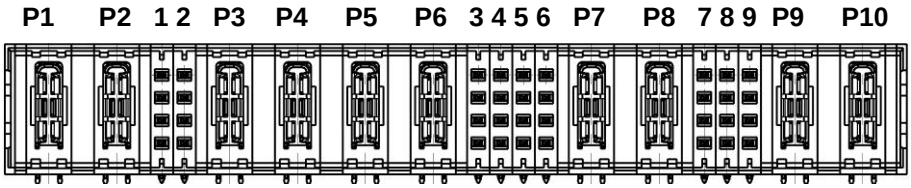
Form Factor	6U
Pitch	10HP
Weight	2,0 kg
Storage Temperature	-45°C to +85°C
Operating Temperature	-40°C to +70°C
Input to Output Insulation	1500V
Input	
Input Voltage	90 - 264Vac
Input Frequency	47-63Hz
Input Current:	7,1A at 115Vac /4,3A at 230Vac)
Inrush Current:	10A (rms) at 230VAC 37.2A (peak) at 230VAC
Output	
Maximum Output Power	850W (at 180 - 264Vac) 670W (at 90 - 180Vac)
Max. Currents 12V / 5V	60A / 25A
Efficiencies	86% at 230VAC
Hold-Up Time:	5.3ms at 115VAC, 2.2ms at 230VAC
Line Regulation	Typ. 1%
Load Regulation	VO1/2/3 typ. ± 2%
Noise & Ripple	Typ 1% pk-pk.
Current Sharing:	Active current sharing at VO1,2,3
DC OK Signal:	Available for each output
Power OK Signal:	Available for each output
Over Current Protection	
Auxiliary Power +/-12V / 3,3V	
Maximum Current	2A / 20A
Hold-Up Time:	5.3ms at 115VAC, 2.2ms at 230VAC

Connector
Vita 62 Tyco 6450843-6, 6450849-6

4.1.2 P0 Connector Pin Out

Pin Number	Voltage	Rated Current (A)	Assignment
P7	100 - 120V 200 - 240V	5,6A - 4,2A	Line
P4			Neutral
P1			GND

4.1.3 P1 Connector Pin Out



P1	P2	D1	D2	P3	P4	P5	P6	D3	D4	D5	D6	P7	P8	D7	D8	D9	P9	P10
COM	Vo3 3,3V AUX	PS_ RNT	EN	COM	COM	Vo2 P03 +5V	Vo2 P03 +5V	n/a	A0	n/a	SYS RST	COM	COM	COM	DEG	I/P_ OK	Vo1 P01 +12V	Vo1 P03 +12V
		C1	C2					C3	C4	C5	C6			C7	C8	C9		
		V3 +S	INH					n/a	A1	n/a	Vo5 AUX -12V			V2 CS	V2 -S	V2 +S		
		B1	B2					B1	B2	B3	B4			B7	B8	B9		
		V3 -S	FAL					Vo5 AUX +12V	A2	SCL	n/a			n/a	n/a	n/a		
		A1	A2					A3	A4	A5	A6			A7	A8	A9		
		V3 CS	n/a					n/a	Alert	SDA	n/a			V1 CS	V1 -S	V1 +S		

Pin Number	Voltage	Rated Current (A)				Assignment
	DC	min.	Typ.	max.	peak	
P9, P10	+12V	1A	50A	55A	60A	Vo1
P5, P6	+5V	1A	15A	15A	25A	Vo2
P2	+3,3V AUX	1A	10A	20A	20A	Vo3
B3	+12V AUX	0,1A	1A	2A	2A	Vo4
C6	-12V AUX	0;1A	1A	2A	2A	Vo5
P1, P3, P4, P7, P8, D7	Return of all output					COM
A9	The positive remode sense of Vo1					V1 +S
A8	The negative remode sense of Vo1					V1 -S
A7	The current share bus of Vo1					V1 CS
C9	The positive remode sense of Vo2					V2 +S
C8	The negative remode sense of Vo2					V2 -S
C7	The current share bus of Vo2					V2 CS
D2	Active Low to enable all output					EN
B2	Active Low to disable all output					INH
C2	Active Low to show power is fail					FAL
D6	Active Low to reset system					SYS RST
C1	The positive remode sense of Vo3					V3 +S
B1	The negative remode sense of Vo3					V3 -S
A1	The current share bus of Vo3					V3 CS
D9	Active Low to show I/P OK					I/P_OK
D8	Active Low to show temperature warning					DEG
B4						A2
C4	I²C Address bit 1					A1
D4	I²C Address bit 0					A0
A4	Alert signal of PMBus					Alert
A5	Data signal of PMBus					SDA
B5	Clock signal of PMBus					SCL
D1	Pull low inside PSU					PS_RNT