605 440 | 451 | 463 | 476

	VWS400 Range	VWS400J	VWS400L	VWS400N
Definitions	I_{MAX} = the maximum rated output current at 25°C ambient and >198V input: V_{NOM} = Nominal output voltage.			
Input characteristics				
Voltage Range	85 – 264V a.c.			
Frequency	47 – 63Hz			
Supply Type	Single phase TN-S (as defined by IEC 364)			
r.m.s. Current	??A maximum at 400W output power and 88V a.c. input, ??A at 400W and 198V a.c. input.			
Peak Inrush Current	10A maximum at 400W output power and 264V a.c. input, hot or cold start.			
Power	??W maximum at 400W output power and 88V a.c. input.			
Phase Angle	2107W maximum at 1800W output power and 198V a.c. input.			
Apparent Power Factor	0.99 typical, 0.95 minimum at 400W output power and 100 to 240V a.c. input			
Efficiency	Typically 80% at 230V a.c. input and 400W resistive load.			
Harmonic Distortion	Units comply with the requirements of EN61000-3-2.			
Turn On and Turn Off characteristics				
Turn On Delay	Output starts to rise within ??s of application of input power.			
Start Up Characteristic	Output voltage rise is monotonic and typically reaches nominal voltage in ??ms.			
Start Up Time	Output voltage reaches nominal within 1.5s at 100V input and 400W output power, 0.5s at 230V input.			
Hold Up Time	20ms minimum at 400W output power over the full input voltage range.			
Output characteristics				
Nominal Voltage	The output voltage is factory set to within ±?? of ...	12V	24V	48V
Adjustment Range	The output voltage is adjustable by multi-turn potentiometer over the range ...	10 – 16V	20 – 36V	40 – 58V
Current	Maximum continuous current ratings (I_{MAX}) as shown are available up to 60°C for input voltages above 100V a.c. Below 100V, the maximum temperature is reduced to 50°C. For temperatures up to 70°C, derate by 2.5%/°C above maximum rated temperature.	30A	16A	8A
Power	Maximum available output power into a resistive load is 400W up to 60°C for input voltages above 100V a.c. Below 100V, the maximum temperature is reduced to 50°C. For temperatures up to 70°C, derate by 2.5%/°C above maximum rated temperature.			
Load Regulation	A load change from 0 to I_{MAX} results in a maximum voltage deviation of 1%V_{NOM}.			
Line Regulation	A change of input voltage over the range 100V to 240V a.c. results in a maximum output voltage deviation of 0.2%V_{NOM}.			
Combined Regulation	– Not specified –			
Dynamic Regulation	A step change in output current from 50% to 100% of full load results in a maximum output voltage deviation of 250mV, recovering to 1% of nominal within 1ms.			
Quiescent Current	– Not specified –			
Temperature Coefficient	±0.02%/°C typ/max?? over the range ?? to +??°C.			
Ripple and Noise	Differential ripple over a 500kHz bandwidth does not exceed 50mV pk-pk.			
	Differential noise over a 30MHz bandwidth does not exceed ...	100mV pk-pk	100mV pk-pk	150mV pk-pk
Protection				

	VWS400 Range	VWS400J	VWS400L	VWS400N
Input Fusing	An internal fuse is fitted, rated ??A T 250V.			
Input Undervoltage	– Not specified –			
Output Current Limit	Output current limit is set at 105% I_{MAX} ±5%. Current limit characteristic is ??			
Series Output Diode	– Not available –			
Output Overvoltage	Unit will shutdown in the event of the output voltage exceeding the overvoltage limit. Reset is achieved by interrupting the input power. The overvoltage threshold is set to 120%V_{NOM} ±5%. The overvoltage threshold is adjustabel by a 20-turn potentionmeter over the range ??			
Parallel Voltage	– Not specified –			
Fan Operation	– Not available –			
Sensor Thermal Overload	In the event of thermal overload, the unit will be inhibited. Output power is reinstated when the unit has cooled. Latching thermal trip is available by specifying option ??.			

Auxiliary Functions

Remote Sense	Remote sense is available on all units to compensate for load lead voltage drops. Output terminal voltage must not exceed...	16.5V	36.5V	58.5V
Current Share	Units may be operated in parallel without limitation. The current share facility forces sharing of load current between units to within 10%.			
Postmate	– Not available –			
Remote On/Off	– Not available –			
	TTL compatible input. A logic low input (>150ms duration) will inhibit the unit output, removal of the logic input will reinstate the output. A short pulse (1 – 30ms duration) will toggle the unit on or off. This action will also reset any latched condition caused by overvoltage or overtemperature.			
Enable	– Not available –			
Disable	– Not available –			
Voltage Trim	– Not available –			
Marginate Down	– Not available –			
Marginate Up	– Not available –			
Voltage Programming	– Not available –			
Current Limit Programming	– Not available –			
Output Healthy Relay	– Not available –			
Rectifier Fail Alarm	– Not available –			
Temperature Compensation	– Not available –			
Power Fail Warning	An open collector output. A high to low transition provides at least 5ms warning of output power failure due to loss of input.			
DC OK	Open collector output and green LED. Active low (on) when output voltage exceeds DC OK threshold of 85% V_{NOM}.			
Current Signal	– Not available –			
Input Healthy Signal	– Not available –			
Standby Signal	– Not available –			
Output Healthy Signal	– Not available –			

	VWS400 Range	VWS400J	VWS400L	VWS400N
Output Current Detect Signal	– Not available –			
Current Limit Signal	– Not available –			
Overvoltage Trip Signal	– Not available –			
Thermal Control Signal	– Not available –			
Thermal Warning Signal	– Not available –			
Fan Fail	Open collector output available when option ?? is specified. Active low when fan has slowed or stopped.			
Auxiliary Output	A power output for interface circuitry available when option ?? is specified. Rated at 5V ±5%, 100mA. This output is present even when the unit is inhibited.			
Indicators	3 visual indicators are provided:			
	DC OK: Green LED			
	Overtemperature: Red LED			
	Overvoltage: Red LED			
Signals	Reference for signals internally linked to –Sense.			

Insulation

Primary to Earth	1,500V a.c.
Secondary to Earth	700V d.c.
Primary to Secondary	4,000V a.c.
Leakage Current	1.2mA maximum at 240V, 60Hz input.

Absolute maximum ratings

Output to Earth	100V d.c. working voltage.
Signal to Earth	100V d.c. working voltage.
Signal to Output	100V d.c. working voltage.
Output to Signal Input	– Not applicable –

Electromagnetic Compatibility

General	Compliant with EN50081-1(92) with compliance to the following specific conditions:
Emission, Conducted 0 - 2kHz	EN61000-3-2
Emission, Conducted 0.15 - 30MHz	EN55022-B
Emission, Radiated 0.03 - 1GHz	EN55022-B at 10m.
Immunity, General	Compliant with EN50082-1(94)
Immunity, Fast Transients	IEC1000-4-4-B
Immunity, ESD	IEC1000-4-2-A
Immunity, RF Field	ENV50140-A at 3V/m
Immunity, Magnetic Field	EN61000-4-8-A at 3A/m
Immunity, Conducted RF	ENV50141-A at 3V r.m.s.

	VWS400 Range	VWS400J	VWS400L	VWS400N
Immunity, Surge	ENV50142-B			

Environmental Specification

Ambient Temperature	0 to +70°C operating. See output current and power for derating requirements. –40 to +85°C transportation.
Humidity	0 to 85% R.H. non-condensing, operating. 0 to 95% R.H. non-condensing, non-operating.
Altitude	0 to 3,000m operating. 0 to 10,000m non-operating.
Mechanical shock and vibration	Compliant with the requirements of BS2011 Test Fc. Drop and topple to EN60068-2-31 Test Ec. Bump test to EN60068-2-47 Test Eb. Transportation to BS2011 Part 2.1 Test Fc when in original packing. Drop test to EN60068-2-32 Test Ed when in original packing.
Pollution	EN60950 degree 2 i.e. office type environments.

Reliability

MTBF	100,000 hours calculated to HRD4. 100,000 hours calculated MIL217 at 25°C ground benign.

Mechanical Specification

Dimensions	W x H x D = 127 x 63.5 x 239.5mm, 5.00 x 2.50 x 9.43 in.
Mass	Typically ??kg, ??lb.
Fixings	Units are provided with three sets of universal fixings: two fixings in each side and four in the base. Threaded inserts will accept M4 or 8-32 UNC screws. Maximum penetration 6mm (0.24").
Mounting Orientation	This unit can be mounted in any orientation without derating.
Ventilation and Cooling	The unit is cooled by an internal fan. Free airflow must be available in the region of the fan inlet and over the connector end of the power supply.
Finish	All external metalwork is finished in gold coloured chemical etch.

Connectors

Input	IEC320 connector as standard. Screw terminal block type Beau 72000 series available by specifying option ??
Output	Beau Eurostyle 86 series 6-way connector on VWS400L and VWS400N. Busbars with M?? screw terminals on VWS400J.
Signals	Molex 7478 series 10-way pin wafer. Mating with Molex 6471 series header, part number 22-01-2105.
Connector kits	

Dimensions

Outline Drawing 2SZU10111

Pin connections

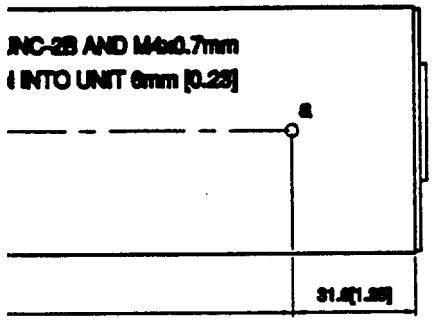
DRG No.
2SZU10111

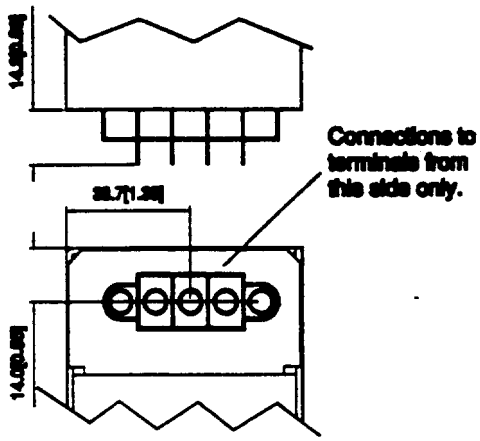
DRAWN MCW | CHKD No.

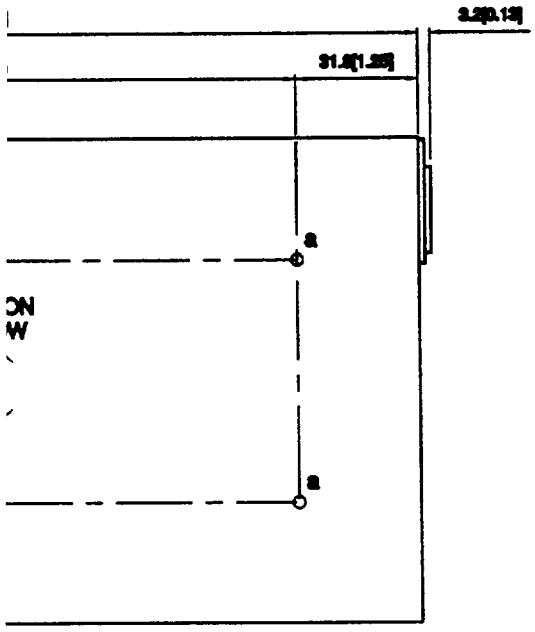
SHEET OF SHEET

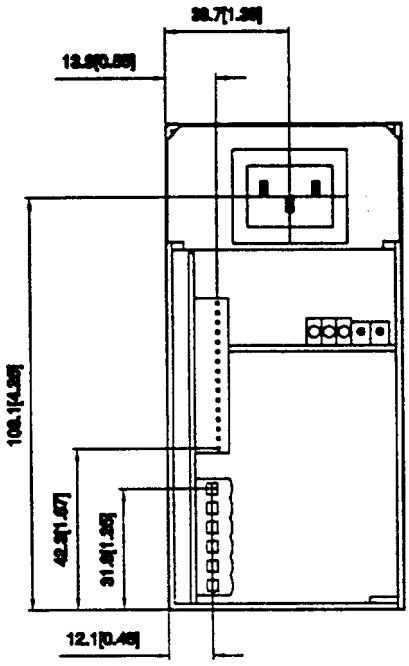
MOD No.	DATE	CH
A	[illegible]	

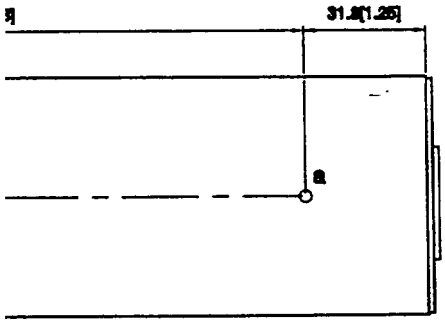
"J" Option











SCALE: N.T.S
DO NOT SCALE

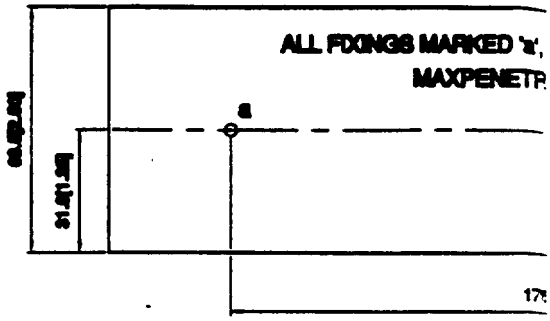
DIMENSIONS IN mm
TOLERANCES
GENERAL ±0.2
UNLESS OTHERWISE STATED
HOLE SIZES
UP TO 70 ±0.1
70 —→ ±0.2
REMOVE ALL BURRS AND SHARP EDGES
PROTECTIVE FINISH TO ES 2
No STAMP PART No WHERE SHOWN

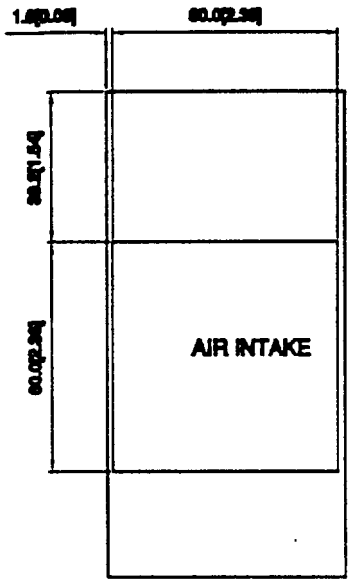
advance ADVANCE POWER LTD
BOROUGHBRIDGE YO5 9UY U.K.

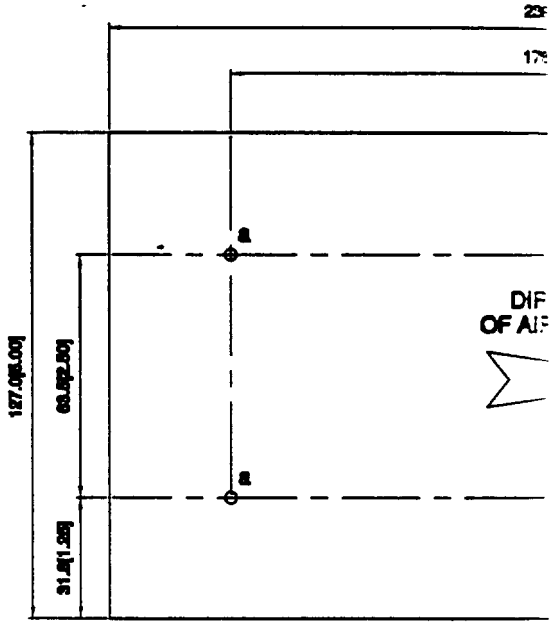
IF IN DOUBT ASK
ALL ERRORS TO BE REPORT
TO THE DRAWING OFFICE
DRAWN TO BS 308

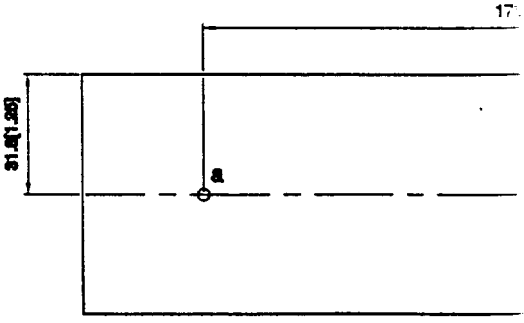
TITLE:
VWS400 OUTLINE DRAWING

DRG. No
2SZU1011









MATL	RAW MATL TO RELEVANT DO STANDARD			e			
——	HOLE SIZE	QTY	COMP No	f			
a				g			
b				h			
c				k			
d				m			