TDK-Lambda UK Limited
Kingsley Avenue, Ilfracombe
Devon, EX34 8ES, United Kingdom
Tel: +44 (0) 1271 856600
Fax: +44 (0) 1271 864894
www.emea.lambda.tdk.com/uk

EU DECLARATION OF CONFORMITY

Alpha 600/CA600 Series

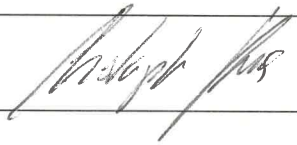
We, TDK-Lambda UK Limited, of Kingsley Avenue, Ilfracombe, Devon, EX34 8ES declare under our sole responsibility that the TDK-Lambda Alpha 600/CA600 series of power supplies, as detailed on the attached products covered sheets, complies with the provisions of the following European Directives and is eligible to bear the CE mark:

Low Voltage Directive	2014/35/EU
RoHS Directive	2011/65/EU
RoHS Directive (EU)	2015/863

Assurance of conformance of the described product with the provisions of the stated EC Directive is given through compliance to the following standards:

Electrical Safety (LVD)	EN60950-1:2006 + A2:2013

Our representative in the EU is TDK-Lambda Germany GmbH, located at Karl-Bold-Str. 40, 77885 Achern, Germany.

Name of Authorized Signatory	Christopher Haas
Signature of Authorized Signatory	
Position of Authorized Signatory	Technical Manager and Head of Quality & Compliance, TDK-Lambda Germany GmbH
Date	22nd October 2019
Date series first CE marked	2nd January 1997
Place where signed	Achern, Germany

CA600 SERIES PRODUCTS COVERED

Unit Configuration Code:

Alpha 600, Alpha 600W and CA600 are identical.
(May be prefixed by NS - # / or - where # may be up to any four letters and may be followed by - $; where $ may be any number between 000 and 999, indicating non-safety related model differences.)

Alpha 600 or CA600 may be followed by: TL, RL, LL, ML, A or no letter,

where TL = Tiny leakage input filter
RL = Reduced leakage input filter
LL = Low leakage input filter
ML = Medium leakage input filter
A = Class A input filter
No letter = Class B input filter

may be followed by: LSF, RA or QF

Where LSF = Low speed fan
RA = Reverse air fan
QF = Quiet fan

followed by up to five of the following:

@ followed by AA, A, BB, B, C, D, F, G, J, K, L, M, N, Q, R, S, T, U, W, or Z.

Optionally followed by _MF, MFE, MFU, MFV, _PA, _IN, _PP, MJ, RJ, PJ, IJ, _RP, RPA, RPB, RPC, RPD or _MG

or B/S

or @/@ (Where / may be replaced with _) followed by: E, EB, EQ, H or P:

where @ and @/@ = applicable voltage range and the following one or two letters are the module type.
_MF, MFE = Mains fail option (may also be called X).
MFU = Mains fail option with uncommitted output connections.
MFV = Mains fail option with VME bus
_PA, _PP, _IN, _RP = Secondary module options.
B/S = Blanking slot which occupies one 23mm slot.

Only up to five 23mm slots may be filled up per unit, noting that all modules occupy one 23mm slot except for AA, A, F, G, J, K, R, S and T modules which occupy two 23mm slots. All primary MF options can only be fitted in slot 1.

Valid voltage ranges for @ and @/@ for each module is as follows:

Module	Voltage Range	Module	Voltage Range
A	@ = 4.5 – 5.5V	K	@ = 18 – 29V
AA	@ = 4.5 – 6.5V	L	@ = 1.8 – 3.2V
B	@ = 4.5 – 5.5V	M	@ = 5 – 16V
BB	@ = 4.5 – 6.5V	N	@ = 18 – 32V
C	@ = 5 – 16V	P	@/@ = 18 – 29V / 5 – 16V
D	@ = 18 – 29V	Q	@ = 2. 7 – 3.9V
E	@/@ = 5 – 16V / 5 – 16V	R	@ = 2. 7 – 3.9V
EB	@/@ = 4.5 – 5.5V / 4.5 – 5.5V	S	@ = 2.5 – 5.7V
EQ	@/@ = 4.5 – 5.5V / 2.7 – 3.9V	T	@ = 1.8 – 3.2V
F	@ = 9 – 16V	U	@ = 10 – 21V
G	@ = 17.5 – 29V	W	@ = 4.5 – 5.5V
H	@/@ = 18 – 32V / 18 – 32V	Z	@ = 4.5 – 5.7V
J	@ = 30 – 48V		

Secondary Options:

Option	Description
_MG	Provides a module good signal with indicates output voltage is within limits.
_PA, RJ	Forces paralleled modules to share load current. Additionally it also provides the module good signal.
_PP, PJ	Provides either of the following functions: a) Reduces module current limit and caters for paralleled modules with busbar linking. For use with modules providing a max output of up to 16V only; or b) Identical to _PA except that the module is paralleled at the output of the module with busbar linking.
_IN, IJ	Provides an external signal which may be used to inhibit the output of the module.
_RP	Provides remote programming of the module output voltage.
RPA	Provides voltage programming of the module output voltage only.
RPB	Provides voltage programming of the module output voltage and has an output VA limiting circuit.
RPC	Provides an output VA limiting circuit
RPD	Provides voltage programming of the module output voltage and has an output VA limiting circuit.

Note:

The RPA option can only be used on modules with output voltages rated up to 32V.
The RP, RPB, RPC and RPD options can only be used on modules with output voltages rated up to 16V.
Not for use with a module voltage range of 18-29V or twin output modules.

ELECTRICAL & THERMAL RATINGS:

Input parameters

NOMINAL INPUT VOLTAGE RANGE	100-240VAC or 177- 326VDC*
MAX. INPUT VOLTAGE RANGE	90-264VAC or 160-358VDC*
INPUT FREQUENCY	47-63Hz
MAXIMUM INPUT CURRENT	10A AC or 6A DC*
INRUSH CURRENT	<50 AMPS

*DC ratings are applicable to specific, non-standard, versions only.

Adjustment and Derating.

The Alpha 600 series is designed to provide a maximum output power of 600W at nominal output voltages. The following procedure must be used to ensure the PSU is operated within its ratings:

a) Calculate user power for each module (volts x amps).
b) Add all the individual module powers together. The total power must not exceed the power rating of the converter, 600W.
c) Calculate secondary transformer turns x amps or each module see outputs table for transformer secondary turns.
d) Add all the module turns x amps together and this must not exceed 120AT.
e) If necessary reduce the loading until the conditions are met. i.e. power and ampere-turns maxima.

Standard modules:

Module	Note	Output range	Current	Occupied Slots	Turns	Max Current Limit	Setting for Hazardous Energy
A		4.5-5.5V	60A	2	1	79.2A	>3V
AA		4.5-6.5V	60A	2	1	79.2A	>3V
B		4.5-5.5V	25A	1	1	33A	-
BB		4.5-6.5V	25A	1	1	33A	-
C	1, 8	5-16V	16A	1	2	21.2A	>11.3V
D	8	18-29V	8A	1	4	10.6A	>.22.6V
E	2	5-16V	8A	1	2	10.6A	-
		5-16V	8A		2	10.6A	-
EB		4.5-5.5V	9A	1	1	11.9A	-
		4.5-5.5V	9A		1	11.9A	-
EQ		4.5-5.5V	9A	1	1	11.9A	-
		2.7-3.9V	9A		1	11.9A	-
F	8	9-16V	33A	2	2	43.6A	>5.5V
G	8	17.5-29V	25A	2	4	33A	>7.2V
H	3	18-32V	5A	1	4	6.6A	-
		18-32V	5A		4	6.6A	-
J	5,8,9	30-48V	10A	2	4	13A	>18.4V
K	8	18-29V	15A	2	4	19.8A	>12V
L	8,10	1.8-3.2V	25A	1	1	33A	-
M	8	5-16V	8A	1	2	10.6A	-
N	6,8	18-32V	5A (8)	1	4	6.6A	-
P	4	18-29V	5A	1	4	6.6A	-
		5-16V	8A		2	10.6A	-
Q	8	2.7-3.9V	25A	1	1	33A	-
R	8	2.7-3.9V	60A	2	1	79.2A	>3V
S	7,8	2.5-5.7V	85A	2	1	110.5A	>2.2V
T	8	1.8-3.2V	60A	2	1	79.2A	>3V
U	8	10-21V	16A	1	3	21.2A	>11.3V
W		4.5-5.5V	15A	1	1	19.8A	-
Z		4.5-5.5V	25A	1	1	33A	-

Additional module limitations:

Notes:

1) For C modules the max output current is 12A for voltages > 12V.
2) For E modules the max output current is limited to 7A in slot 3 and 6A in Slot 4.
3) For H modules the max output current is limited to 4A in slot 4. For voltages >29V, the output current is limited to 1A
4) For P, PL modules the max output current is limited to 5A for channel 1 and for channel 2, 8A in slot 1, 7A in slots 2, 3 and 5, and 6A in slot 4.
5) For J modules output current derates by 0.25A per volt above 40V.
6) N modules with output voltage greater than 29V have max output current of 1 Amp.
7) For S modules the max output current is limited to 75A in slots 2 & 3, 77A in slots 3 & 4, & 80A in slots 4 & 5.
8) When using remote sense, the max output voltage will be reduced by 0.5V for L, S, T, Q and R modules, and by 1.0V for C, D, F, G, J, M, K, N, U modules.
9) Ampere turns for J module is calculated as AT = (output current + 15A) x 4.
10) For L modules the max output current is limited to 20A in slot 5.
11) Adjusting output voltage beyond the stated range may cause overvoltage protection (OVP) to operate, whereby all outputs will turn off. To reset OVP, turn back the output voltage adjustment and remove the mains supply for 30 seconds and then switch back on.

Unit limitations:

i) For PSUs fitted with RA option (reverse air flow), the output is limited to 475W and 100AT at a max ambient of 40°C, or 400W, 85AT for a max ambient of 50°C (horizontal only). Operation in any vertical position is not permitted.

ii) For PSUs fitted with the LSF option, the output is limited to 400W and 88.9AT. The QF option is limited to 600W and 120AT.

iii) For power supplies having input or output connector housings fitted there is no effect on ratings in any orientation.

SELV and Outputs Connected In Series:

- Outputs can be connected in series thus producing non-SELV levels, or in parallel thus producing new energy hazards, and this must be taken into account in the end-use application. When non-seriesed outputs are earthed in the end use equipment they are SELV. If the outputs are not earthed they must be considered hazardous, as a single fault in the secondary may make them exceed the SELV limits between output and earth. If any output is non-SELV then all outputs become non-SELV.
- All outputs have operational spacing to earth, and due consideration must be given to this in the end product design.

Custom Model:

Model: CA600 18G (NS-WAK-001)
Input voltage range: 90-264Vac
Outputs 18V 25A (450W, 100AT total)
Ambient 50°C max
Orientations All except psu vertical with airflow downwards and psu upside down
Model NS-WAK-001 is identical to Model Alpha 600 18G.
Both Models are identical to the standard product, except they may be fitted with a Papst 612NGM fan.