



CSA INTERNATIONAL

Certificate of Compliance

Certificate: 1185383

Master Contract: 163661

Project: 1793395

Date Issued: 2006/09/14

Issued to: Astec International Limited
2 Wing Yip St
16th & 17th Flr Lu Plaza
Kwun Tong, Kowloon
Hong Kong
Attention: Mr. Gordhan Hingorani

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US'



Issued by: Jim Saunders, P. Eng.

Authorized by: Akbar Lalani, Product Group Manager

PRODUCTS

CLASS 5311 07 - POWER SUPPLIES - Component Type - (CSA 60950-1-03)

CLASS 5311 87 - POWER SUPPLIES - Component Type - Certified to US Stds. - (CSA 60950-1-03/UL 60950-1, First Edition, NRTL Program)

Component power supplies for use in Information Technology and Electrical Business Equipment where the suitability of the combination is to be determined.

MP4-XXX-XXX-XXX-XXX-XXX-XX (See model configuration), rated 100-240V, 7A, 50/60/400Hz or 200-240V, 7A, 50/60/400Hz, Outputs: Refer to model configuration

The 'C' and 'US' indicators adjacent to the CSA Mark signify that the product has been evaluated to the applicable CSA and ANSI/UL Standards, for use in Canada and the U.S., respectively. This 'US' indicator includes products eligible to bear the 'NRTL' indicator. NRTL, i.e. National Recognized Testing Laboratory, is a designation granted by the U.S. Occupational Safety and Health Administration (OSHA) to laboratories which have been recognized to perform certification to U.S. Standards.



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Notes:

1. Maximum continuous output power is 400W at 50 deg C maximum and 200W at 70 deg C maximum. With rear air exhaust option, maximum continuous output power is 400W at 40 deg C. Total loading of dual output modules not to exceed 144W and total loading of triple output modules not to exceed 36W.

Maximum continuous output power at AC200-240V input is 600W at 50°C maximum.

2. Output classification level may be 1, 3, 5 or 6 depending on model configuration.

3. The MP4 Series power supplies consist of a front end AC/DC converter and chassis (Model 73-540-0001) and DC/DC converter modules which are CSA approved and listed under the CB scheme.

Each MP4 Series model has 5 slots for the DC/DC converter modules. (4 slots when optional secondary monitor module is provided). There are single, dual and triple output DC/DC converter modules, some of which occupy more than 1 slot. The MP4 Series may be configured with various combinations of the following modules:

Single output 210 watt module, (width = 1 slot) - 73-551-Series

Single output 360 watt module, (width = 2 slot) - 73-552-Series

Single output 600 watt module, (width = 3 slot) - 73-553-Series

Dual output 144 watt module, (width = 1 slot) - 73-554-Series

Triple output 36 watt module, (width = 1 slot) - 73-550-Series

See the MP4 model configuration sheet for further details.

When the optional secondary monitor Module P/N 73-713 is provided, the code "VME" is used in the model designation. It will always be provided in slot of module 5 (ie the XXX for slot 5 will be replaced by "VME").

APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 60950-1-03 - Information Technology Equipment - Safety - Part 1: General Requirements (Bi-national Standard, with UL 60950-1)

ANSI/UL 60950-1-2002 - Information Technology Equipment - Safety - Part 1: General Requirements (Bi-national Standard, with CSA 60950-1)



Supplement to Certificate of Compliance

Certificate: 1185383

Master Contract: 163661

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
1793395	2006/09/14	Upgrade to 60950-1.
History		
1185383	2001/03/21	Update to add optional secondary monitor module P/N 73-713. Originally issued as LR 53982-125.
-167	98/03/12	To cover alternate construction.
-125	98/01/16	Original Certification.

MASTER CONTRACT: 163661

REPORT: 1185383

PROJECT: 1793395

Edition 1: January 16, 1998; Application No LR 53982-125 - Etobicoke
Issued by J. Kwong, P. Eng.

Edition 2: March 12, 1998; Application No LR 53982-167 - Etobicoke
Issued by T. Stafrace, C.E.T.

Edition 3: March 21, 2001; Project 1185383 - Toronto
Issued by Steve Siu; Reviewed by Anthony Lee, P. Eng.

Edition 4: September 14, 2006; Project 1793395 - Toronto
Issued by Jim Saunders, P. Eng.

Contents: Certificate of Compliance - Page 1 to 2
Supplement to Certificate of Compliance - Page 1
Description and Tests - Pages 1 to 4
Evaluation Document - CSA CB Report CB 163661-1185395 (-1793395)
(Only the pages listed on Page 3 are provided in Inspection Copies)

PRODUCTS

CLASS 5311 07 - POWER SUPPLIES - Component Type (CSA 60950-1-03)

CLASS 5311 87 - POWER SUPPLIES - Component Type - Certified to US Stds (CSA 60950-1-03/UL 60950-1, First Edition, NRTL Program) - Certified to U.S. Standards

Component power supplies for use in Information Technology and Electrical Business Equipment where the suitability of the combination is to be determined.

Model	Input	Output (dc)	Level
MP4-XXX-XXX-XXX-XXX-XXX-XX (See model configuration)	AC 100-240V, 7A, 50/60/400Hz AC 200-240V, 7A, 50/60/400Hz	Refer to model configuration supplement	See Note 2

Notes:

1. Maximum continuous output power is 400W at 50 deg C maximum and 200W at 70 deg C maximum. With rear air exhaust option, maximum continuous output power is 400W at 40 deg C. Total loading of dual output modules not to exceed 144W and total loading of triple output modules not to exceed 36W.

Maximum continuous output power at AC200-240V input is 600W at 50°C maximum.

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2. Output classification level may be 1, 3, 5 or 6 depending on model configuration.
3. The MP4 Series power supplies consist of a front end AC/DC converter and chassis (Model 73-540-0001) and DC/DC converter modules which are CSA approved and listed under the CB scheme. Each MP4 Series model has 5 slots for the DC/DC converter modules. (4 slots when optional secondary monitor module is provided). There are single, dual and triple output DC/DC converter modules, some of which occupy more than 1 slot. The MP4 Series may be configured with various combinations of the following modules:
 - Single output 210 watt module, (width =1 slot) - 73-551-Series
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 - Single output 600 watt module, (width =3 slot) - 73-553-Series
 - Dual output 144 watt module, (width =1 slot) - 73-554-Series
 - Triple output 36 watt module, (width =1 slot) - 73-550-SeriesSee the MP4 model configuration sheet for further details.

When the optional secondary monitor Module P/N 73-713 is provided, the code "VME" is used in the model designation. It will always be provided in slot of module 5 (ie the XXX for slot 5 will be replaced by "VME").

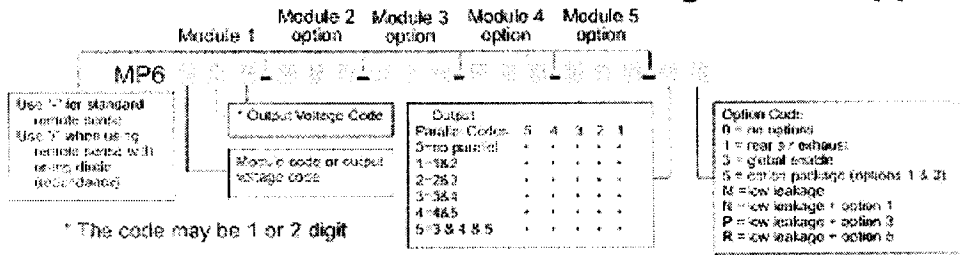
APPLICABLE REQUIREMENTS

- CAN/CSA-C22.2 No. 60950-1-03 - Information Technology Equipment - Safety - Part 1: General Requirements (Bi-national Standard, with UL 60950-1)
- ANSI/UL 60950-1-2002 - Information Technology Equipment - Safety - Part 1: General Requirements (Bi-national Standard, with CSA 60950-1)

CSA 60950-1-03/UL 60950-1 1st Edition DESIGN MANUAL, Rev.1 (ISSUED WITH 1467153) IS AN INTEGRAL PART OF THIS REPORT

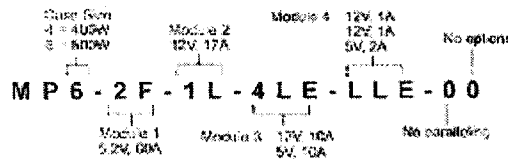
MVP Series 400 to 600 Watts
 Installation Instructions

Technical Description & Application Notes
 Model Configuration Supplement



* The code may be 1 or 2 digit

Examples:



- VME -

*VME/DC OK timing and system DC OK module (Always in last slot)
 ConSurFactory

Output Voltage Code
 1. Example: 5V, 60A; Module Code - 2 E

Output Voltage Code
 2. Example: 5V, 10A; Module Code - 4 E L (always)

*No Module Code required
 3. Example: 12V, 1A; 20V, 0.5A; 5V, 2A

Single Output 3-digit Code Selection Chart

Dual Output 3-digit Code Selection Chart

Triple Output 3-digit Code Selection Chart

Voltage Code	Voltage ±10%	Module Code		
		1 Takes up 1 Slot Current Max. (A)	2 Takes up 2 Slot Current Max. (A)	3 Takes up 3 Slot Current Max. (A)
A	2V	35	60	120
B	2.2V	35	60	120
C	3V	35	60	120
D	3.3V	35	60	120
E	5V	35	60	120
F	5.2V	35	60	115
G	5.5V	34	55	100
H	6.0V	23	42	75
I	8.0V	25	36	60
J	10V	15	32	60
K	11V	17	31	54.5
L	12V	17	30	50
M	14V	14	21	40.5
N	15V	14	20	30
O	18V	15	19	33.3
P	20V	10.5	18	30
Q	24V	8.5	16	28.0
R	28V	6.7	11	21.4
S	30V	8.0	11	20
T	33V	6.2	10.5	18.2
U	36V	5.0	10	16.0
V	40V	4.2	7.5	12.5
W	48V	4.0	7.0	12.0
X	54V	3.7	6.0	11
Y	60V	3.0	5.0	10

Voltage Code	Voltage ±10%	Takes up 1 slot Current Max. (A)	
		V1	V2
A	2V	-	10
B	2.2V	-	10
C	3V	-	10
D	3.3V	-	10
E	5V	10	10
F	5.2V	-	10
G	5.5V	-	10
H	6.0V	-	10
I	8.0V	10	4
J	10V	10	4
K	11V	10	4
L	12V	10	4
M	14V	9	4
N	15V	8	4
O	18V	-	-
P	20V	-	-
Q	24V	4	2
R	28V	3	2

Voltage Code	Voltage ±10%	Takes up 1 slot Current Max. (A)		
		V1	V2	V3
A	2V	-	-	2
B	2.2V	-	-	2
C	3V	-	-	2
D	3.3V	-	-	2
E	5V	-	-	2
F	5.2V	-	-	2
G	5.5V	-	-	2
H	6.0V	-	-	2
I	8.0V	1	1	1
J	10V	1	1	1
K	11V	1	1	1
L	12V	1	1	1
M	14V	1	1	1
N	15V	1	1	1
O	18V	1	1	1
P	20V	-	0.5	0.5
Q	24V	-	0.5	0.5
R	28V	-	0.5	0.5

* Note: Total loading not to exceed 144 watts.

* Note: Total loading not to exceed 36 watts.

Voltage Code	Voltage Range	SINGLE OUTPUT MODULE MAXIMUM (A)			DUAL OUTPUT MODULE MAXIMUM (A)		TRIPLE OUTPUT MODULE MAXIMUM (A)		
		1	2	3	V1	V2	V1	V2	V3
Z	2.4 - 2.7	35	60	120	-	10	-	-	2
	3.0 - 4.0	35	60	120	-	10	-	-	2
	0.6 - 7.2	20	25	60	10	4	-	-	1
	8.0 - 9.0	18	22	60	10	4	-	-	1



* Char Z will represent one voltage range only within the module.

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MARKINGS

Per Design Manual

ALTERATIONS

Markings as above appear on each unit.

FACTORY TESTS

Per Design Manual

DESCRIPTION

Conditions of Acceptability: Refer to the attached CSA Evaluation Document. (Ref. No. CB 163661-1185395 (-1793395)).

For Detailed Engineering Consideration: Refer to the attached CSA Evaluation Document. (Ref. No. CB 163661-1185395 (-1793395)).

For CSA Field Inspection: Refer to the following sections of the attached CSA Evaluation Document. ((Ref. No. CB 163661-1185395 (-1793395)).

- List of Safety Critical Components Page 26
- Photos Attachment 1
- MP4 - Series Block Diagram Attachment 2
- Installation and Operating Instructions Attachment 3
- MVP Series - Modular Power Supply Description Attachment 4
- Label Drawing and Model Configuration..... Pages 7 to 8
- Complete Component List, on File at CSA under subject Report Reference number.

TESTS

Refer to attached CSA Evaluation Document.