



# Certificate of Compliance

**Certificate:** 70090229

**Master Contract:** 170351

**Project:** 70090229

**Date Issued:** 2016-07-21

**Issued to:** **Bel Fuse Inc.**  
**206 Van Vorst St**  
**Jersey City, New Jersey 07302**  
**USA**

**Attention:** Editha S. Vergara

*The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.*



**Issued by:** *Juan-Carlos Olivera*  
Juan-Carlos Olivera, MSc.

## **PRODUCTS**

CLASS – 5311 11 - POWER SUPPLIES - Component Type (CSA 60950-1-07-2nd Ed)

CLASS – 5311 91 - POWER SUPPLIES - Component Type (UL 60950-1-2nd Ed) Certified to U.S. Stds

Component type power supplies intended for use with Information Technology and Business Equipment, where the suitability of the combination is to be determined by CSA International.

Power Supply Filter Module, Model F Series, rated Input: 0-45 V dc (24 V dc nominal) or 36-80 V dc (48 V dc nominal), specified as follows:

F	48	04	-X
I	II	III	IV

I - Product Series, Filter: F

II - Input Voltage:

48 = 80 V dc max; 48 V dc nominal

24 = 45 V dc max; 24 V dc nominal

III - Rated Current



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10 = 10 Amps

04 = 4 Amps

IV - Optional suffix not affecting safety

Notes:

1. X suffix may be any alphanumeric characters denoting non-safety critical options.
2. Any combination of input & output voltage within the nomenclature shown above creates a valid model number.

**APPLICABLE REQUIREMENTS**

CAN/CSA-C22.2 No 60950-1-07,  
+Am.1:2011 +Am.2:2014

UL 60950-1-2014

– Information Technology Equipment - Safety - Part 1: General Requirements

– Information Technology Equipment - Safety - Part 1: General Requirements

**CONDITIONS OF ACCEPTABILITY**

1. Subject models are intended for use with factory provided DC-DC converters
2. Subject models were tested for use at a manufacturer's recommended PWB temperature of 120°C; no external cooling was necessary to maintain the PWB at the maximum temperature of 120°C, with a current load of 4 Amps; 30 LFM airflow was necessary during full load testing of Model F2410 to maintain the PWB at or below the maximum temperature of 120°C; 30 LFM airflow was necessary during full load testing of Models F4810 and F4804A to maintain the PWB at or below the maximum temperature of 120°C
3. There is no insulation between input and output terminals; for the purpose of applying insulation requirements in the end system, the input circuits are classified as TNV-2, with the maximum voltage limited to 80 V dc.
4. Maximum measured working voltage was 80 Vrms/80 Vpk.
5. Subject models were tested for an input voltage 0-45 V dc (24 V dc nominal) or 36-80 V dc (48 V dc nominal), with zero tolerance. If used outside this voltage range additional testing may be required.
6. Abnormal and Component Failure Tests were conducted as follows: for units rated 4 A / 48 V, the unit was protected by a UL R/C (JDYX2) fuse manufactured by Littelfuse, Type 451004, rated F,4 A, 125 V dc; for units rated 10 A / 24 V and 10 A / 48 V, the unit was protected by a UL R/C (JDYX2) fuse manufactured by Littelfuse, Type 451012, rated F,12 A, 65 V dc; for model F4804A, the unit was protected by a UL R/C (JDYX2) fuse manufactured by Littelfuse, Type R451010, rated F,10A, 125 V dc; if a different type of fuse is used, additional testing may be required.



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7. Input and output pins are suitable for factory wiring only, intended for solder mount on PWB.
8. Suitable fire and electrical enclosure shall be provided in the end system.



## *Supplement to Certificate of Compliance*

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

### **Product Certification History**

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<b>Project</b>	<b>Date</b>	<b>Description</b>
70090229	2016-07-21	Power Supply Filter Module, Model F Series. (C/US) (transferred from 173688 - 2192877 and upgraded to include Am2).