



UNIVERSAL SHIELDING CORP.

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FILTER SPECIFICATION FOR 400 AMP FILTER CABINET

<u>PART NUMBER:</u>	USC-W-400-B4 (Old PN USC-50-4X400)
<u>PART DESCRIPTION:</u>	Filter Cabinet containing four (4) individual filter elements rated up to 400 amps. Refer to accompanying diagram.
<u>PRODUCT SUMMARY:</u>	EMI/RFI Power Line Filters are used to block unwanted signals and remove interference from entering or exiting through the power lines and meeting TEMPEST requirements.
<u>INSERTION LOSS:</u>	100 dB from 14 KHz – 40 GHz
<u>STANDARDS</u>	
MIL-STD-220C	Method of insertion loss measurements for Radio Frequency filters
MIL-F-15733	Military Specifications - General Specifications for Filters and Capacitors, Radio Frequency Interference
MIL-STD-285	Shielded Effectiveness Testing
<u>CONSTRUCTION:</u>	Power line penetration filters may be mounted through the outer wall of a shielded enclosure. The filters are RFI secure and are supplied with threaded nipple. To prevent shock hazards, filters will be supplied with bleeder resistors.

ELECTRICAL

Current Rating:

The filters shall be capable of withstanding 140% of rated current for 15 minutes without any deterioration.

Insertion Loss:

The filters shall provide the specified insertion loss of 100 dB minimum over the indicated frequency range (14 KHz – 40 GHz) when measured in accordance with MIL-STD-220C.

Voltage:

The filters shall be capable of operating continuously at full-rated voltage and of withstanding an initial test of twice the rated voltage for one minute.

0-400 VDC

120/208 VAC (50/60 Hz)

277/480 VAC (50/60 Hz)

MECHANICAL

CASE:

The filter case shall be made of cold-rolled steel.

CONSTRUCTION:

Input and output terminals shall be completely enclosed in RF shielded compartments. Cover on the input compartment shall be screw-down type.

FINISH:

All filter cases shall be made corrosion-resistant with suitable plating.

IMPREGNANT:

The impregnant shall be non-flammable as classified by U.L. and MIL-F-15738.

TERMINALS:

The terminals shall be made of high temperature ceramic.

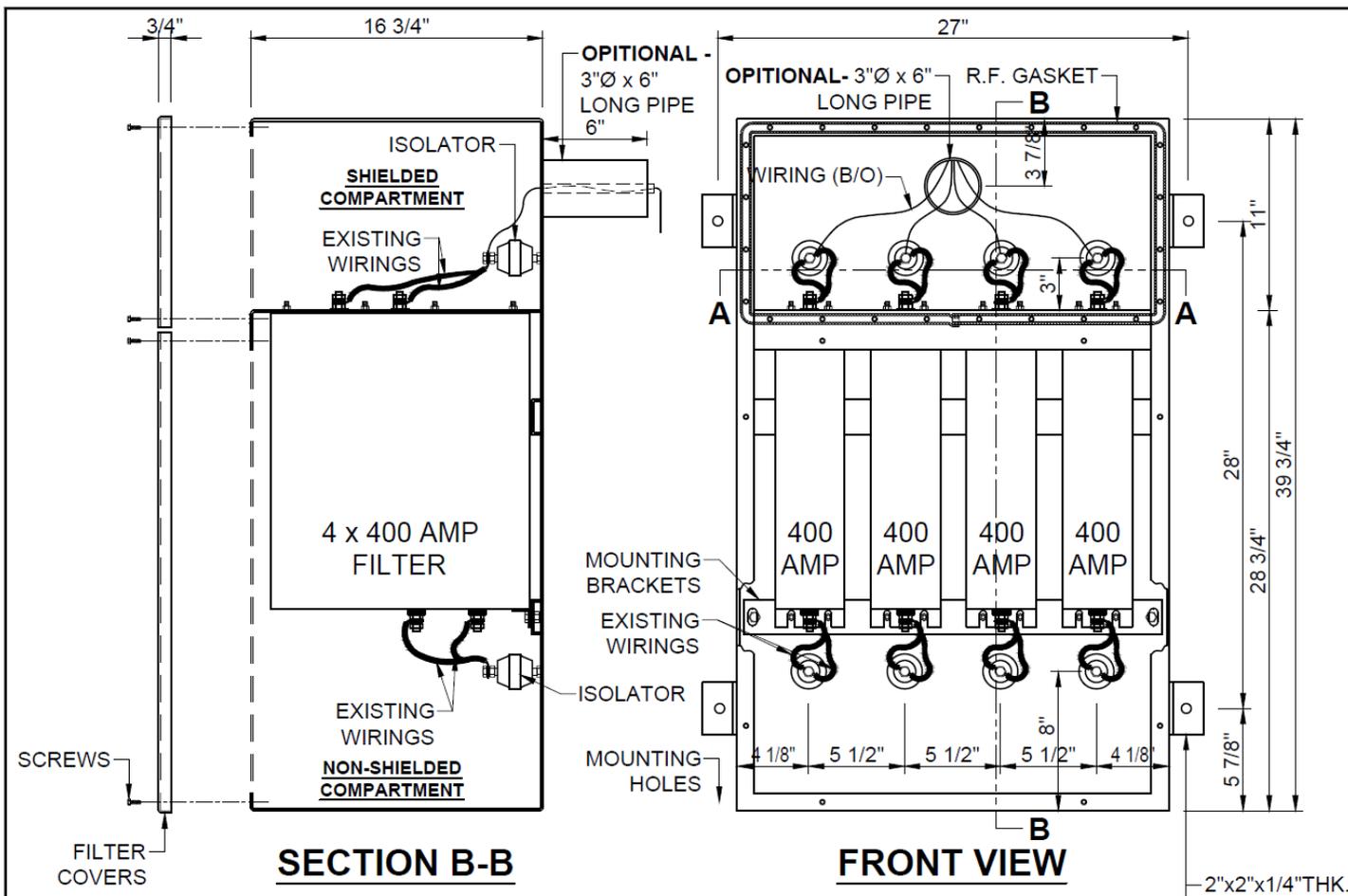
POWER FACTOR CORRECTION COILS

Will be required where limited generator output requires reduced reactive current.

Since screen room filters consist of inductors and capacitors, they apply a fixed reactive load to power lines. Filters which provide high attenuation at low frequencies present the greatest no-load current problems due to their large capacitive component.

If the power source has sufficient reserve to furnish the added reactive current, there is no difficulty. However, if the power source is limited, RF Power Factor Correction Coils must be used to cancel the undesirable capacitive-reactive load component.





FACILITY FILTER FUNCTIONAL CHARACTERISTICS

- Voltage Ratings:
 - o 10 - 1000 VDC
 - o 120/208 VAC (50/60 Hz)
 - o 277/480 VAC (50/60 Hz)
- Voltage Drop:
 - o 2% maximum at full rated unity power factor load.
- Harmonic Distortion:
 - o 4% maximum at full rated unity power factor load
- Temperature Rating:
 - o MIL-PRF-15733
- Current Overload:
 - o 140% maximum current rating for 15 minutes
- RF Attenuation:
 - o Greater than 100 dB isolation
- Dielectric With-Standing Voltage:
 - o 1500 VDC
- Insulation Resistance:
 - o MIL-PRF-15733
- Insertion loss:
 - o 100 dB 14 KHz to 18 GHz Per MIL-STD-220A
 - o 50/50 Ohm System
- Flexible Connection between Filter & Stand Off Isolator

INTERNAL FILTERS

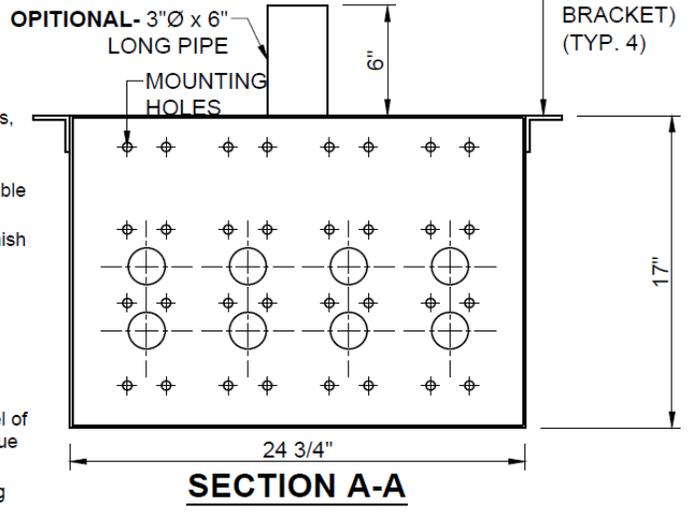
- Low Pass filter circuits ~ passive components which includes inductors, capacitors, resistors and optional transient suppression devices
- Manufactured and tested per applicable portions of MIL-PRF-15733
- Filter cases 14 gage, CRS, plated finish
- Sealed with welded and soldered seams for shielding effectiveness
- Discharge resistors incorporated to eliminate potential shock hazard

ENCLOSURE

- Modified NEMA type fabricated panel of 14 gauge cold rolled steel painted blue
- RF tight inner area secured with RF gasket for 100 dB minimum shielding effectiveness, 14 kHz to 18 GHz
- Pre-wired standoffs and cable lugs
- Front covers access to filters and terminal standoffs
- RF pipe penetration

APPLICABLE SPECIFICATIONS

- Military Specifications
 - o MIL-PRF-15733 General
- Military Test Methods
 - o MIL-STD-202 Environmental
 - o MIL-STD-220 Insertion Loss
 - o MIL-STD-285 Shielding Effectiveness



ITEM # 1
QTY: 1

R.F. FILTER CABINET FOR:
PART # USC-W-400-B4

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PROJECT: -	
SCALE: 1 1/4"=1'-0"	DRAWN BY: ALFONSO
DATE: 12-05-2021	DRAWING # USC-00000N