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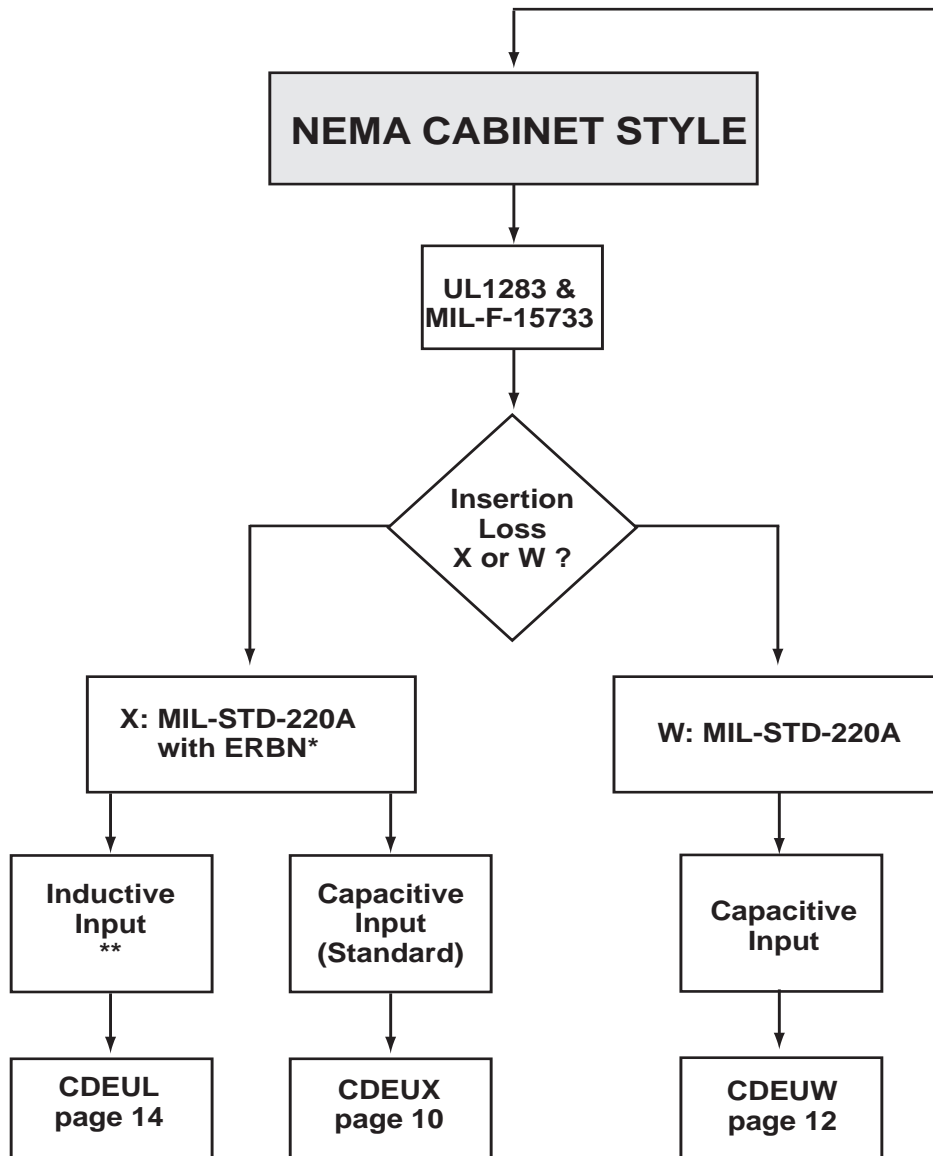
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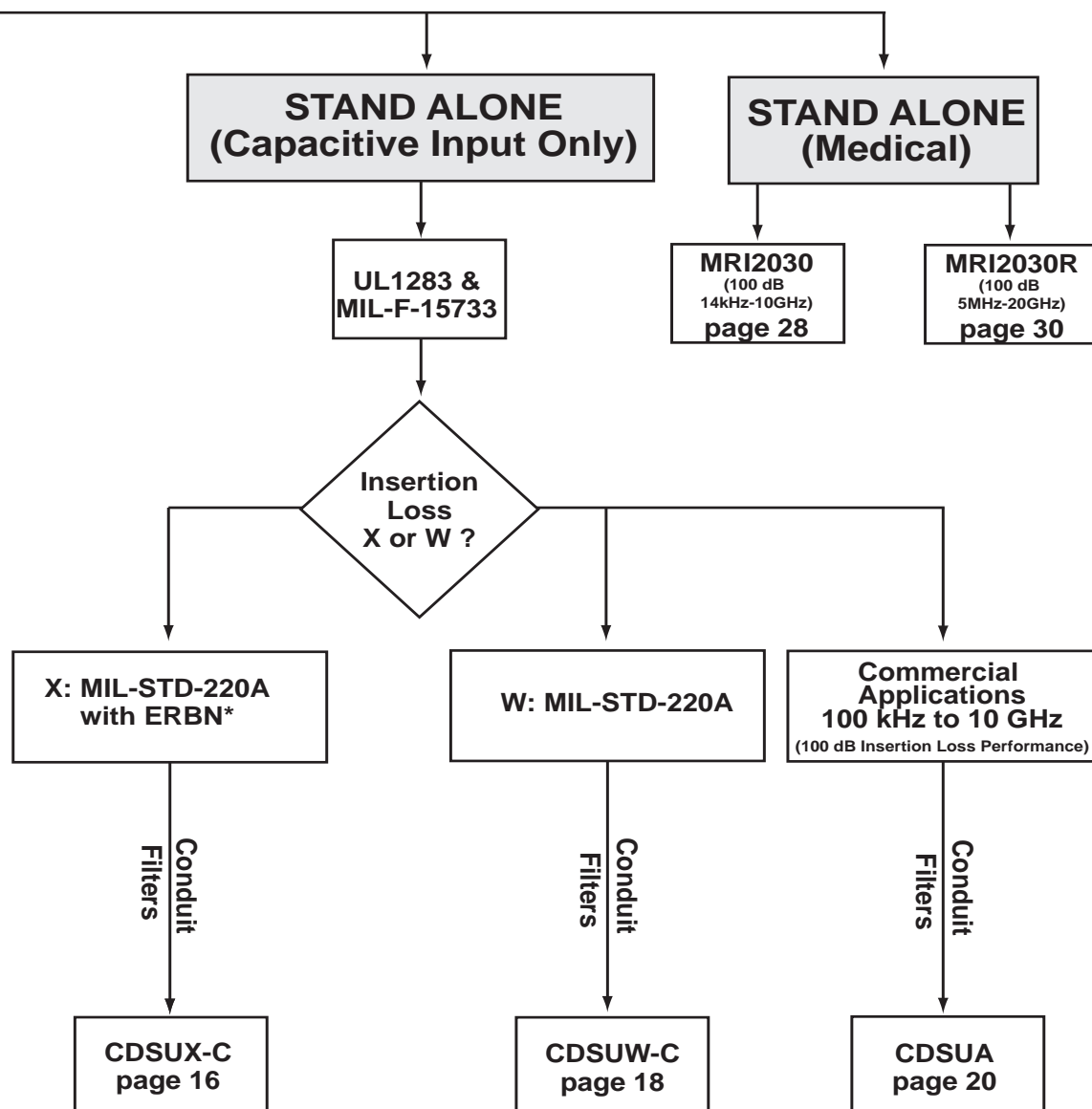
**Facility EMI Filters Selection Guide**



\*ERBN = Extended Range Buffer Network

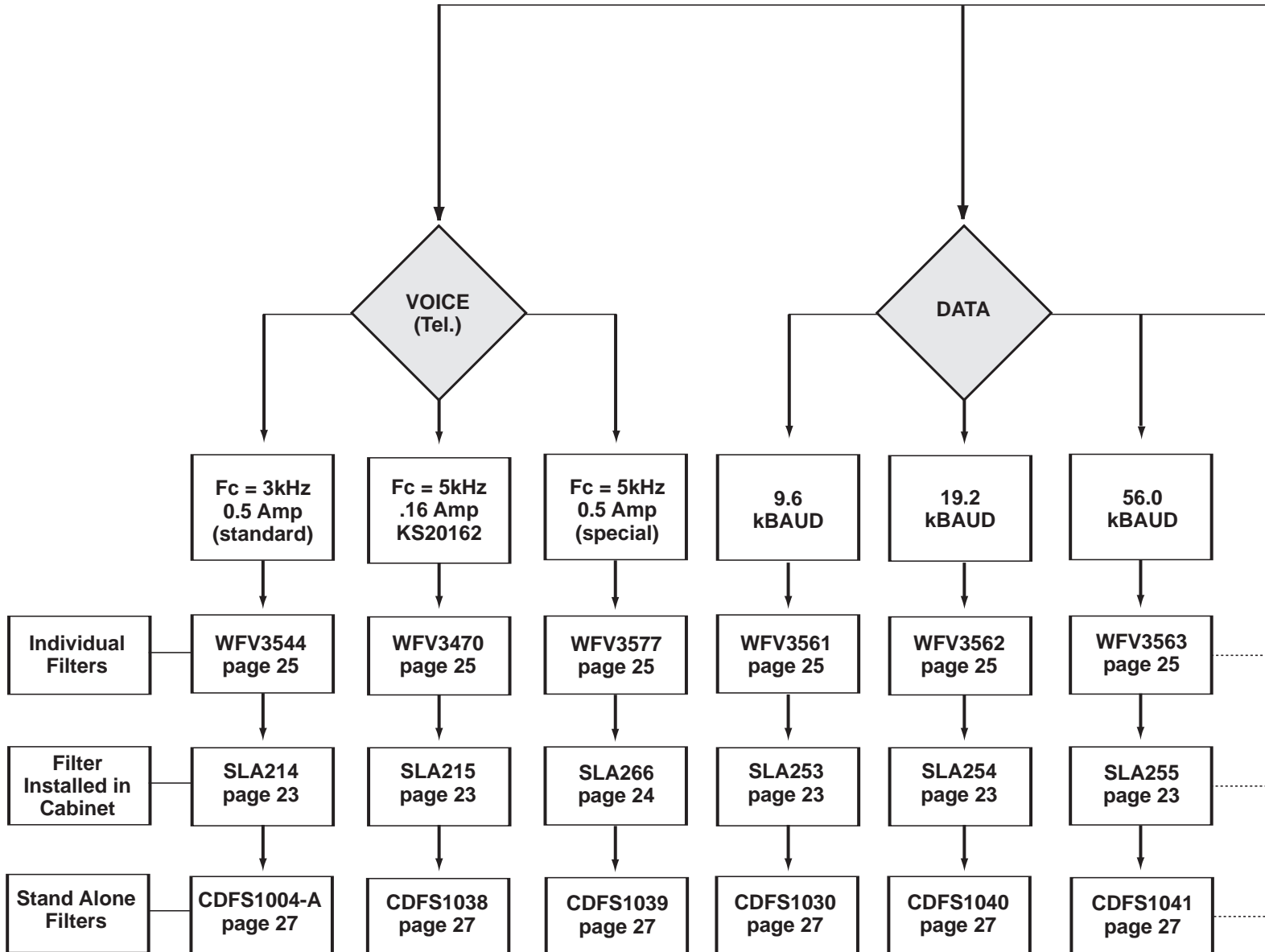
\*\* Recommended for HEMP Installations

**Facility EMI Filters Selection Guide** (Continued)

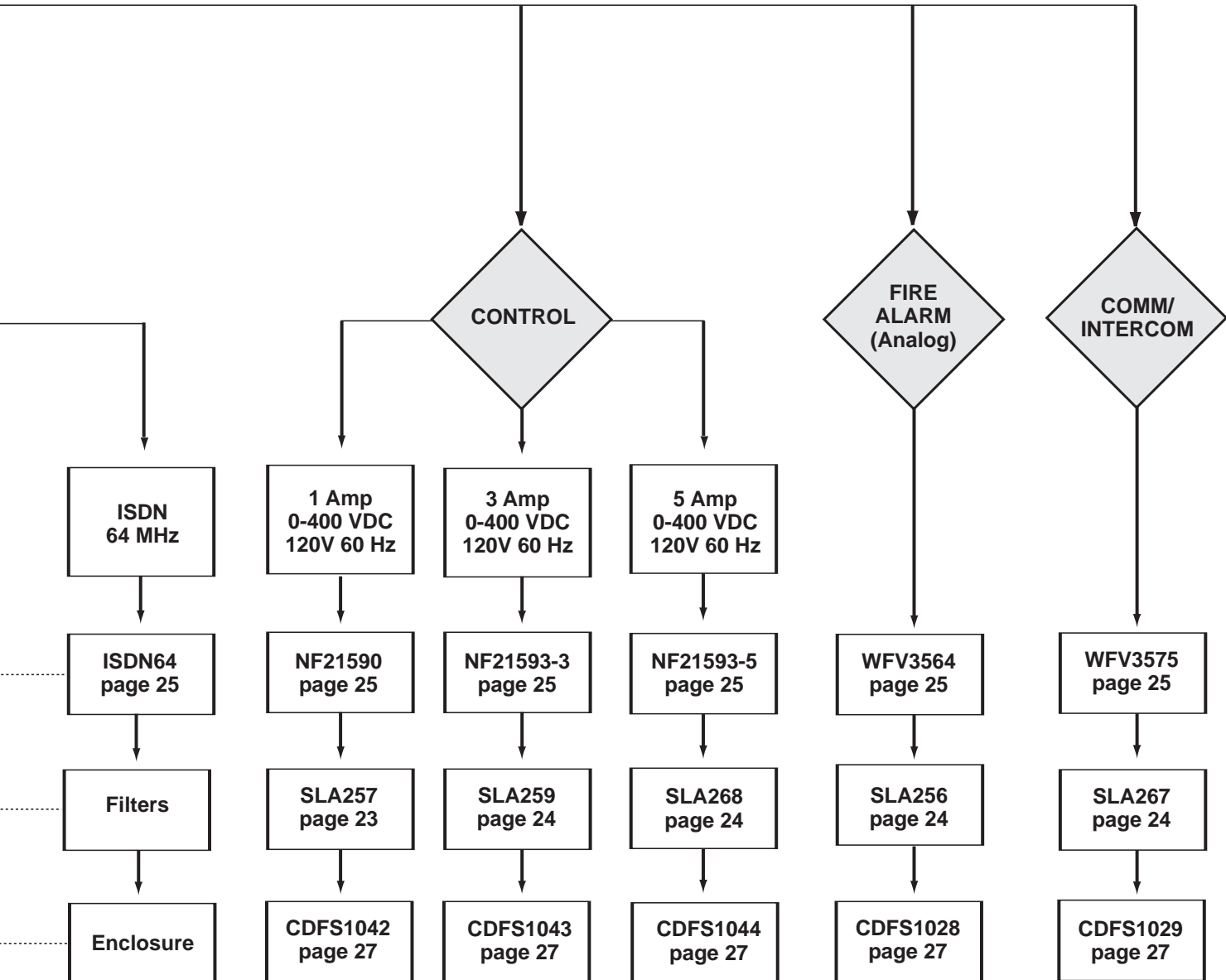


\*ERBN = Extended Range Buffer Network

**Signal/Data/Control Filters Selection Guide**



**Signal/Data/Control Filters Selection Guide** (Continued)



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**Technical Notes**

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**Facility Filter Questions and Answers:**

The following are examples of the most commonly asked questions about Tyco Electronics CORCOM Power and Signal Line Filter products.

Although every RF filter installation must be considered according to the user's individual requirements, these general principles apply to a wide range of applications and should prove helpful as an introduction to our product.

**Why do I need RF filters for my facility?**

CORCOM facility filters have both protective and security functions. Shielded installations and applications involving sensitive measurements or equipment require an environment free from conducted or radiated EMI/RFI emissions.

Facility filters for power, data, telephone and all other signals are used for every electrical penetration in EMI/RFI enclosures to reduce conducted emissions. When the shielded area is sealed, all emissions are reduced or contained.

**What is the difference between "W" and "X" styles?**

All CORCOM "W" style facility power filters are designed to provide 100 dB from 14 kHz-10.0 GHz when tested per MIL-STD-220A. However, this standard only requires testing under load conditions from 100 kHz – 20 MHz.

The majority of current government programs specify MIL-STD-220A, with the additional specification of under load testing from 14 kHz - 100 kHz. This is due to requirements for sensitive electronic or national security related activities.

A filter for this higher performance application would generally be designated an "X" or "Extended Range Buffer Network" style.

**What is the difference between "Enclosure Style" and "Stand-Alone" Filters?**

Enclosure style filters consist of removable inserts mounted in a radio frequency secure cabinet. This is the type specified by the U.S. government for a number of important advantages in heavy power and multi-line communications applications.

An enclosure makes for a simplified, single penetration field installation, providing greater RF integrity and simpler filter maintenance.

Stand-alone filters offer the identical levels of filter performance as the enclosure models, but are available with self-enclosed terminals for individual and dual line applications. Penetrations for installation are provided for this type of unit directly from the factory.

**What is the difference between MIL-F-15733 and UL-1283 filters?**

All CORCOM power filter products are designed to meet MIL-F-15733, which is the general U.S. Military standard for RF filters. UL1283 is an Underwriter's Laboratories requirement for features which are primarily related to safety considerations.

The individual heavy power filters or inserts for both UL and MIL-STD applications are all equipped with oil-filled, hermetically sealed bypass and feed-through capacitors. UL1283 listed models use capacitors which are designed to withstand mandatory high potential factory tests of up to 2,200 volts.

**What types of factory tests are performed on the filters?**

Tyco Electronics has one of the most comprehensive automated quality assurance programs in the filter industry.

Certified factory test data is available upon request. Filters are factory tested for:

- Insertion Loss
- Voltage Drop, Harmonic Distortion, Terminal Strength, Temperature Rating\*
- Dielectric Withstanding Voltage
- D.C. Insulation Resistance
- Current and Overload Ratings\*

\* Customer requested data

**Which are the "input" and "output" sides of the filters?**

Unless otherwise specified, CORCOM signal and power filter products are electrically symmetrical. Either side of the unit may be used as "input" or "output" terminal.

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**Technical Notes** (Continued)

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An exception to this general rule is found in enclosure style filter assemblies where only one of the two compartments is secure of "RF-tight". If the filter unit is mounted outside of the shielded area, the secure compartment would be the "output" side. Because the reverse is also true, the non-secure side would be used as the "output" if the filter is mounted inside the shielded room.

**Do I need to filter the neutral line for 3-phase/4-wire power installations?**

All electrical lines entering a shielded area must be filtered to prevent conducted emissions. Even though the neutral conductor may be grounded elsewhere in the installation, this is no guarantee that radiated signals will not induce additional conducted emission.

The neutral filter must also be rated for the full system power levels, since phase imbalances and short-circuit faults can cause substantial currents to flow in the neutral line.

**What is the function of Electronic Surge Arrestors?**

Although CORCOM filter products are designed for heavy duty use and subjected to rigorous testing requirements, surge currents greater than the design parameters can cause damage to sensitive equipment which is only protected from conducted radio frequency emissions by the filter.

Electronic Surge Arrestors or ESAs limit overvoltage surges and spikes to levels which prevent damage to the user's equipment. ESA installations are also available which are designed for military applications to protect from the effects of electromagnetic pulses caused by nuclear explosions or EMP.

**Why do I need filter discharge "bleeder" resistors?**

Bleeder resistors drain away any residual charge which may remain across the filter's capacitors when the power is turned off within one minute. The purpose of this feature is to prevent the possibility of harmful electrical shock.

All CORCOM power products above 10 Amperes per phase are equipped with external bleeder resistors.

**When are "Power Factor Correction Coils" required?**

Power factor correction coils are required for CORCOM products in 400 Hz applications where power levels exceed 25 amperes per phase.

All 400 Hz power filters in heavy power installations draw a high level of reactive current when compared with equivalent 50/60 Hz systems. To counteract this effect, external-mounted inductors can be placed in parallel with the filter's capacitors to provide more efficient operation and are specifically recommended.

## CDEUX Series (Capacitive Input)

### Filter Cabinet

- Modified Nema I, constructed of not less than #14 gauge CRS with galvanized bulkhead
- Finish: Blue enamel per FED-STD-595 to all non-conductive surfaces
- R. F. Radiation of the shielded (load) compartment shall be greater than 100 dB from 14 kHz to 10 GHz
- Front cover access, dual cover design
- Prewired standoffs and lugs
- Lifting hooks and mounting tabs
- Legs for floor mount available
- Surge arrestors (optional)

### Individual Filters

- Hermetically sealed components with welded and/or soldered seams
- Constructed of not less than #16 gauge steel with corrosion resistant plating
- Bleeder resistor to eliminate shock hazard provided
- HEMP surge arrestors provided upon request

### Electrical Characteristics

#### Voltage Drop:

Less than 1% @ unity power factor.

#### Overload:

140% of rated current for 15 minutes.

#### Harmonic Distortion:

Less than 2% @ full rated current.

#### Dielectric Withstanding Voltage:

Per MIL-F-15733 and UL1283.

#### D.C. Insulation Resistance:

Per MIL-STD-202, Method 202.

#### Terminal Strength:

Per MIL-STD-202, Method 211, Condition E.

#### Temperature Rise:

Per MIL-F-15733.

#### R.F. Radiation:

100 dB minimum shielding effectiveness.

#### Insertion Loss:

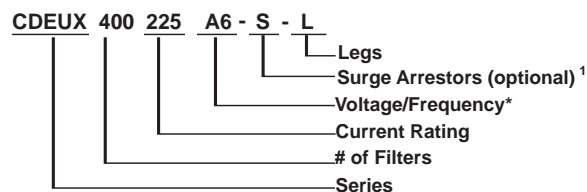
100 dB from 14 kHz - 10 GHz per MIL-STD-220A, under load condition, using extended range buffer networks over the frequency range of 14 kHz - 20 MHz.

### Applicable Publications:

MIL-F-15733 — Filters, radio interference  
MIL-STD-202F — Test methods for Components  
MIL-STD-220A — Test method of Insertion Loss  
MIL-STD-285 — Test method for Shielding Effectiveness  
NFPA 70-1987 — National Electric Code  
486A - 1983 — Wire Connectors and Lug  
UL1283 — Underwriter Laboratories



### How to Order:



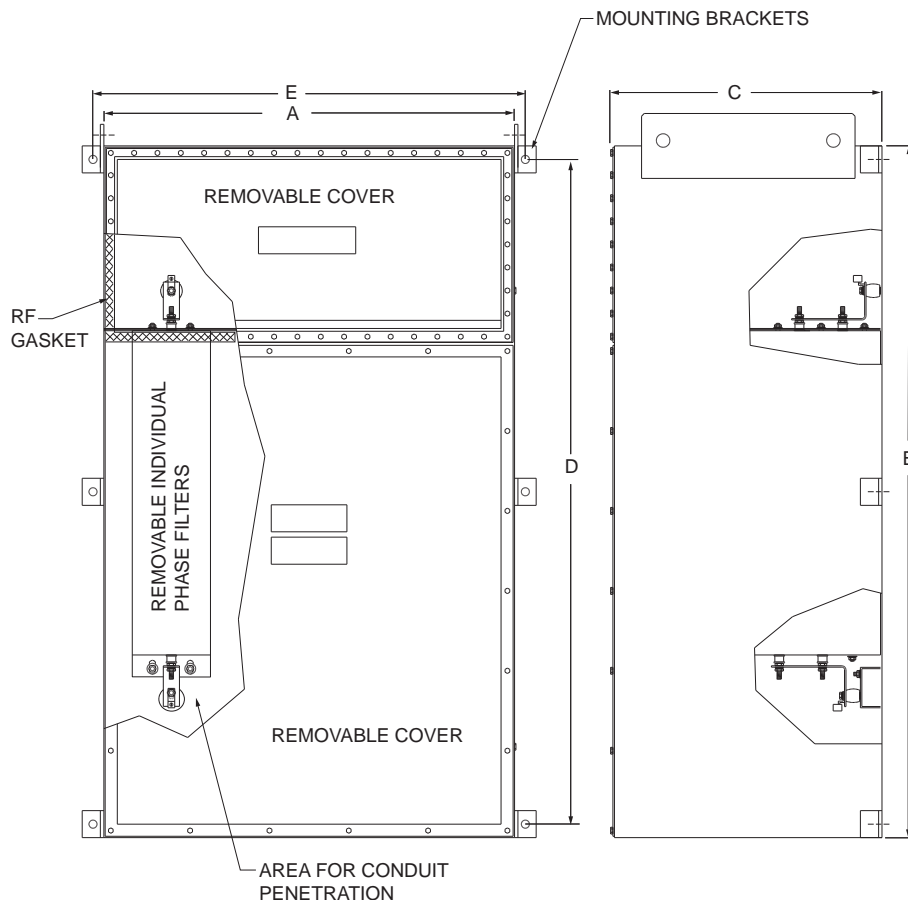
**Examples: CDEUX400225A6-S-L, CDEUX400225A6-S,  
CDEUX400225A6-L, CDEUX400225A6**

#### Note 1:

Surge arrestors A6/A4\* - supplied V251BA60  
B6 - supplied V481BA60



**CDEUX Series (Capacitive Input) (Continued)**



Current (Amps)	Dimensions					Weight (Pounds/KG)
	A	B	C	D	E	
2 x 10	14.0	30.0	6.0	22.0	16.0	95
	355.6	762.0	152.4	558.8	406.4	43.1
3 x 10	20.0	30.0	6.0	22.0	22.0	100
	508.0	762.0	152.4	558.8	558.8	45.4
4 x 10	26.0	30.0	6.0	22.0	28.0	120
	660.4	762.0	152.4	558.8	711.2	54.4
2 x 30	16.0	38.0	8.0	26.0	18.0	170
	406.4	965.2	203.2	660.4	457.2	77.1
3 x 30	23.0	38.0	8.0	26.0	25.0	240
	584.2	965.2	203.2	660.4	635.0	108.9
4 x 30	30.0	38.0	8.0	26.0	32.0	300
	762.0	965.2	203.2	660.4	812.8	136.1
2 x 60 & 100	16.0	44.0	10.0	32.0	18.0	240
	406.4	1117.6	254.0	812.8	457.2	108.9
3 x 60 & 100	23.0	44.0	10.0	32.0	25.0	310
	584.2	1117.6	254.0	812.8	635.0	140.6
4 x 60 & 100	30.0	44.0	10.0	32.0	32.0	400
	762.0	1117.6	254.0	812.8	812.8	181.4
2 x 150	16.0	54.0	14.0	42.0	18.0	320
	406.4	1371.6	355.6	1066.8	457.2	145.1
3 x 150	23.0	54.0	14.0	42.0	25.0	430
	584.2	1371.6	355.6	1066.8	635.0	195.0
4 x 150	30.0	54.0	14.0	42.0	32.0	650
	762.0	1371.6	355.6	1066.8	812.8	294.8

Current (Amps)	Dimensions					Weight (Pounds/KG)
	A	B	C	D	E	
2 x 225	16.0	54.0	14.0	42.0	18.0	380
	406.4	1371.6	355.6	1066.8	457.2	172.4
3 x 225	23.0	54.0	14.0	42.0	25.0	520
	584.2	1371.6	355.6	1066.8	635.0	235.9
4 x 225	30.0	54.0	14.0	42.0	32.0	700
	762.0	1371.6	355.6	1066.8	812.8	317.5
2 x 300 & 400	22.0	64.0	26.0	61.5	24.0	800
	558.8	1625.6	660.4	1562.1	609.6	362.9
3 x 300 & 400	30.0	64.0	26.0	61.5	32.0	1100
	762.0	1625.6	660.4	1562.1	812.8	498.9
4 x 300 & 400	38.0	64.0	26.0	61.5	40.0	1400
	965.2	1625.6	660.4	1562.1	1016.0	635.0
2 x 600 & 800	38.0	70.0	26.0	67.5	40.0	1400
	965.2	1778.0	660.4	1714.5	1016.0	635.0
3 x 600 & 800	56.0	70.0	26.0	67.5	58.0	2100
	1422.4	1778.0	660.4	1714.5	1473.2	952.5
4 x 600 & 800	72.0	70.0	26.0	67.5	74.0	2600
	1828.8	1778.0	660.4	1714.5	1879.6	1179.3
2 x 1000 & 1200	56.0	70.0	26.0	67.5	58.0	2000
	1422.4	1778.0	660.4	1714.5	1473.2	907.2
3 x 1000 & 1200	82.0	70.0	26.0	67.5	84.0	3000
	2082.8	1778.0	660.4	1714.5	2133.6	1360.8
4 x 1000 & 1200	106.0	70.0	26.0	67.5	108.0	3800
	2692.4	1778.0	660.4	1714.5	2743.2	1723.6

\*400Hz filters available upon request. Will require external power factor correction coil. Please contact Tyco Electronics Application Engineering 847-680-7400 ext.117.

Max. Operating Voltage	
A6:	120/208V, 60 Hz
B6:	277/480V, 60 Hz
A4*:	120/208V, 400 Hz

## CDEUW Series (Capacitive Input)

### Filter Cabinet

- Modified Nema I, constructed of not less than #14 gauge CRS with galvanized bulkhead
- Finish: Blue enamel per FED-STD-595 to all non-conductive surfaces
- R. F. Radiation of the shielded (load) compartment shall be greater than 100 dB from 14 kHz to 10 GHz
- Front cover access, dual cover design
- Prewired standoffs and lugs
- Lifting hooks and mounting tabs
- Hubs and penetration installed upon request
- Legs for floor mount available

### Individual Filters

- Hermetically sealed components with welded and/or soldered seams
- Constructed of not less than #16 gauge steel with corrosion resistant plating
- Bleeder resistor to eliminate shock hazard provided
- HEMP surge arrestors provided upon request

### Electrical Characteristics

#### Voltage Drop:

Less than 1% @ unity power factor.

#### Overload:

140% of rated current for 15 minutes.

#### Harmonic Distortion:

Less than 2% @ full rated current.

#### Dielectric Withstanding Voltage:

Per MIL-F-15733 and UL1283.

#### D.C. Insulation Resistance:

Per MIL-STD-202, Method 202.

#### Terminal Strength:

Per MIL-STD-202, Method 211, Condition E.

#### Temperature Rise:

Per MIL-F-15733.

#### R.F. Radiation:

100 dB minimum shielding effectiveness.

#### Insertion Loss:

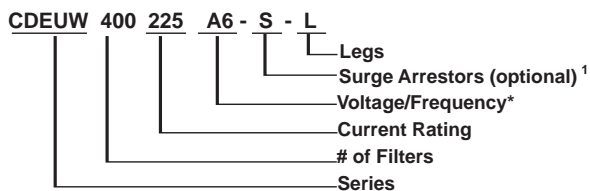
100 dB from 14 kHz - 10 GHz per MIL-STD-220A, under load condition.

### Applicable Publications:

MIL-F-15733 — Filters, radio interference  
MIL-STD-202F — Test methods for Components  
MIL-STD-220A — Test method of Insertion Loss  
MIL-STD-285 — Test method for Shielding Effectiveness  
NFPA 70-1987 — National Electric Code  
486A - 1983 — Wire Connectors and Lug  
UL1283 — Underwriter Laboratories



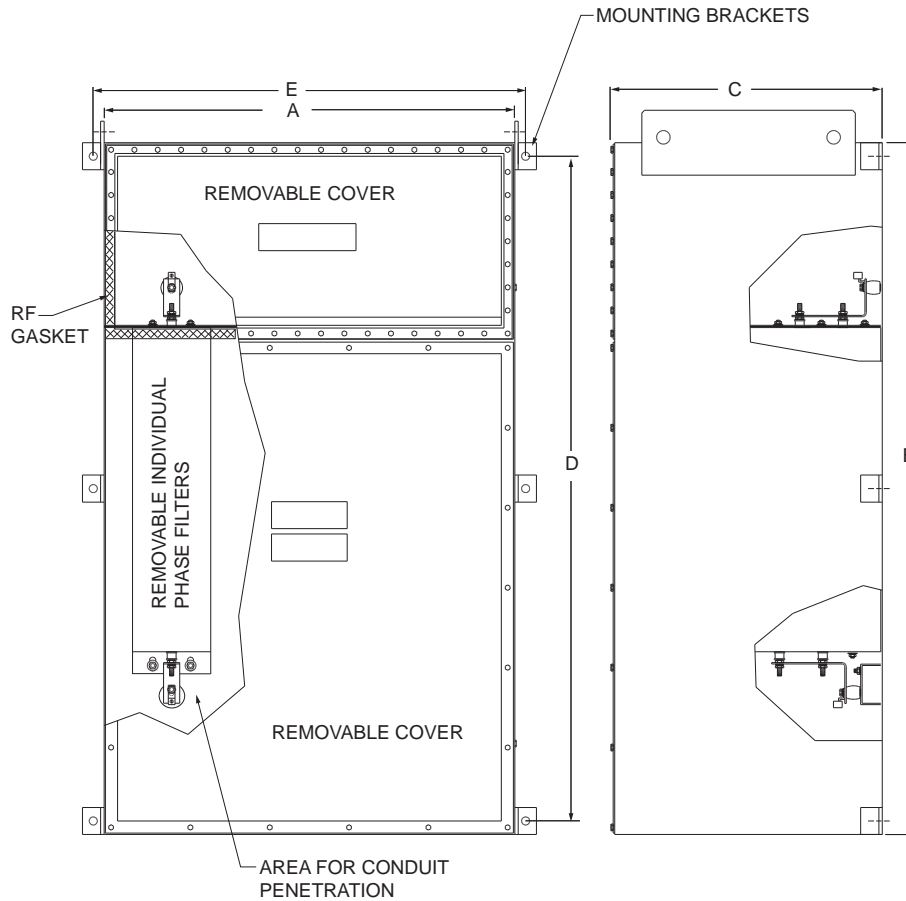
### How to Order:



**Examples: CDEUW400225A6-S-L, CDEUW400225A6-S, CDEUW400225A6-L, CDEUW400225A6**

Note 1:  
Surge arrestors A6/A4\* - supplied V251BA60  
B6 - supplied V481BA60

**CDEUW Series (Capacitive Input) (Continued)**



Current (Amps)	Dimensions					Weight (Pounds/KG)
	A	B	C	D	E	
2 x 10	14.0	30.0	6.0	22.0	16.0	95
	355.6	762.0	152.4	558.8	406.4	43.1
3 x 10	20.0	30.0	6.0	22.0	22.0	100
	508.0	762.0	152.4	558.8	558.8	45.4
4 x 10	26.0	30.0	6.0	22.0	28.0	120
	660.4	762.0	152.4	558.8	711.2	54.4
2 x 30	16.0	38.0	8.0	26.0	18.0	170
	406.4	965.2	203.2	660.4	457.2	77.1
3 x 30	23.0	38.0	8.0	26.0	25.0	240
	584.2	965.2	203.2	660.4	635.0	108.9
4 x 30	30.0	38.0	8.0	26.0	32.0	300
	762.0	965.2	203.2	660.4	812.8	136.1
2 x 60 & 100	16.0	44.0	10.0	32.0	18.0	240
	406.4	1117.6	254.0	812.8	457.2	108.9
3 x 60 & 100	23.0	44.0	10.0	32.0	25.0	310
	584.2	1117.6	254.0	812.8	635.0	140.6
4 x 60 & 100	30.0	44.0	10.0	32.0	32.0	400
	762.0	1117.6	254.0	812.8	812.8	181.4
2 x 150	16.0	54.0	14.0	42.0	18.0	320
	406.4	1371.6	355.6	1066.8	457.2	145.1
3 x 150	23.0	54.0	14.0	42.0	25.0	430
	584.2	1371.6	355.6	1066.8	635.0	195.0
4 x 150	30.0	54.0	14.0	42.0	32.0	650
	762.0	1371.6	355.6	1066.8	812.8	294.8

Current (Amps)	Dimensions					Weight (Pounds/KG)
	A	B	C	D	E	
2 x 225	16.0	54.0	14.0	42.0	18.0	380
	406.4	1371.6	355.6	1066.8	457.2	172.4
3 x 225	23.0	54.0	14.0	42.0	25.0	520
	584.2	1371.6	355.6	1066.8	635.0	235.9
4 x 225	30.0	54.0	14.0	42.0	32.0	700
	762.0	1371.6	355.5	1066.8	812.8	317.5
2 x 300 & 400	22.0	64.0	26.0	61.5	24.0	800
	558.8	1625.6	660.4	1562.1	609.6	362.9
3 x 300 & 400	30.0	64.0	26.0	61.5	32.0	1100
	762.0	1625.6	660.4	1562.1	812.8	498.9
4 x 300 & 400	38.0	64.0	26.0	61.5	40.0	1400
	965.2	1625.6	660.4	1562.1	1016.0	635.0
2 x 600 & 800	38.0	70.0	26.0	67.5	40.0	1400
	965.2	1778.0	660.4	1714.5	1016.0	635.0
3 x 600 & 800	56.0	70.0	26.0	67.5	58.0	2100
	1422.4	1778.0	660.4	1714.5	1473.2	952.5
4 x 600 & 800	72.0	70.0	26.0	67.5	74.0	2600
	1828.8	1778.0	660.4	1714.5	1879.6	1179.3
2 x 1000 & 1200	56.0	70.0	26.0	67.5	58.0	2000
	1422.4	1778.0	660.4	1714.5	1473.2	907.2
3 x 1000 & 1200	82.0	70.0	26.0	67.5	84.0	3000
	2082.8	1778.0	660.4	1714.5	2133.6	1360.8
4 x 1000 & 1200	106.0	70.0	26.0	67.5	108.0	3800
	2692.4	1778.0	660.4	1714.5	2743.2	1723.6

\*400Hz filters available upon request. Will require external power factor correction coil. Please contact Tyco Electronics Application Engineering 847-680-7400 ext.117.

Max. Operating Voltage	
A6:	120/208V, 60 Hz
B6:	277/480V, 60 Hz
A4*:	120/208V, 400 Hz

## CDEUL Series — Extended Range Buffer Networks (Inductive Input)

### Filter Cabinet

- Modified Nema I, constructed of not less than #14 gauge CRS with galvanized bulkhead
- Finish: Blue enamel per FED-STD-595 to all non-conductive surfaces
- R. F. Radiation of the shielded (load) compartment shall be greater than 100 dB from 14 kHz to 10 GHz
- Front cover access, dual cover design
- Prewired standoffs and lugs
- Lifting hooks and mounting tabs
- Hubs and penetration installed upon request
- Legs for floor mount available

### Individual Filters

- Hermetically sealed components with welded and/or soldered seams
- Constructed of not less than #16 gauge steel with corrosion resistant plating
- Bleeder resistor to eliminate shock hazard provided
- HEMP surge arrestors provided upon request (*Current ratings to 800A*)

### Electrical Characteristics

#### Voltage Drop:

Less than 1% @ unity power factor.

#### Overload:

140% of rated current for 15 minutes.

#### Harmonic Distortion:

Less than 2% @ full rated current.

#### Dielectric Withstanding Voltage:

Per MIL-F-15733 and UL1283.

#### D.C. Insulation Resistance:

Per MIL-STD-202, Method 202.

#### Terminal Strength:

Per MIL-STD-202, Method 211, Condition E.

#### Temperature Rise:

Per MIL-F-15733.

#### R.F. Radiation:

100 dB minimum shielding effectiveness.

#### Insertion Loss:

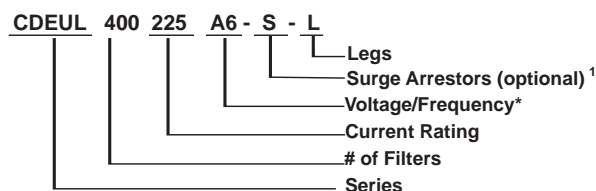
100 dB from 14 kHz - 10 GHz per MIL-STD-220A, under load condition, using extended range buffer networks over the frequency range of 14 kHz - 20 MHz.

### Applicable Publications:

MIL-F-15733 — Filters, radio interference  
MIL-STD-202F — Test methods for Components  
MIL-STD-220A — Test method of Insertion Loss  
MIL-STD-285 — Test method for Shielding Effectiveness  
NFPA 70-1987 — National Electric Code  
486A - 1983 — Wire Connectors and Lug  
UL1283 — Underwriter Laboratories



### How to Order:

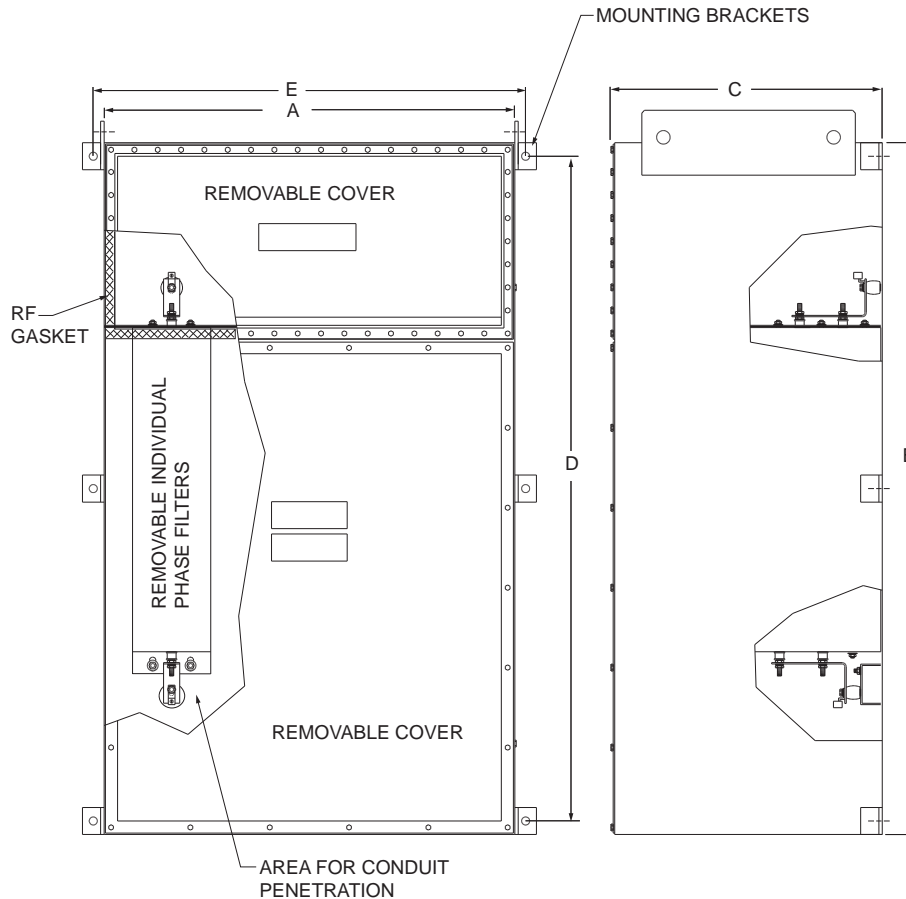


**Examples: CDEUL400225A6-S-L, CDEUL400225A6-S, CDEUL400225A6-L, CDEUL400225A6**

#### Note 1:

Surge arrestors A6/A4\* - supplied V251BA60  
B6 - supplied V481BA60

**CDEUL Series — Extended Range Buffer Networks (Inductive Input) (Continued)**



Current (Amps)	Dimensions					Weight (Pounds/KG)
	A	B	C	D	E	
2 x 10	14.0	30.0	6.0	22.0	16.0	95
	355.6	762.0	152.4	558.8	406.4	43.1
3 x 10	20.0	30.0	6.0	22.0	22.0	100
	508.0	762.0	152.4	558.8	558.8	45.4
4 x 10	26.0	30.0	6.0	22.0	28.0	120
	660.4	762.0	152.4	558.8	711.2	54.4
2 x 30	16.0	38.0	8.0	26.0	18.0	170
	406.4	965.2	203.2	660.4	457.2	77.1
3 x 30	23.0	38.0	8.0	26.0	25.0	240
	584.2	965.2	203.2	660.4	635.0	108.9
4 x 30	30.0	38.0	8.0	26.0	32.0	300
	762.0	965.2	203.2	660.4	812.8	136.1
2 x 60 & 100	16.0	44.0	10.0	32.0	18.0	240
	406.4	1117.6	254.0	812.8	457.2	108.9
3 x 60 & 100	23.0	44.0	10.0	32.0	25.0	310
	584.2	1117.6	254.0	812.8	635.0	140.6
4 x 60 & 100	30.0	44.0	10.0	32.0	32.0	400
	762.0	1117.6	254.0	812.8	812.8	181.4
2 x 150	16.0	54.0	14.0	42.0	18.0	320
	406.4	1371.6	355.6	1066.8	457.2	145.1
3 x 150	23.0	54.0	14.0	42.0	25.0	430
	584.2	1371.6	355.6	1066.8	635.0	195.0
4 x 150	30.0	54.0	14.0	42.0	32.0	650
	762.0	1371.6	355.6	1066.8	812.8	294.8

Current (Amps)	Dimensions					Weight (Pounds/KG)
	A	B	C	D	E	
2 x 225	16.0	54.0	14.0	42.0	18.0	380
	406.4	1371.6	355.6	1066.8	457.2	172.4
3 x 225	23.0	54.0	14.0	42.0	25.0	520
	584.2	1371.6	355.6	1066.8	635.0	235.9
4 x 225	30.0	54.0	14.0	42.0	32.0	700
	762.0	1371.6	355.5	1066.8	812.8	317.5
2 x 300 & 400	22.0	64.0	26.0	61.5	24.0	800
	558.8	1625.6	660.4	1562.1	609.6	362.9
3 x 300 & 400	30.0	64.0	26.0	61.5	32.0	1100
	762.0	1625.6	660.4	1562.1	812.8	498.9
4 x 300 & 400	38.0	64.0	26.0	61.5	40.0	1400
	965.2	1625.6	660.4	1562.1	1016.0	635.0
2 x 600 & 800	38.0	70.0	26.0	67.5	40.0	1400
	965.2	1778.0	660.4	1714.5	1016.0	635.0
3 x 600 & 800	56.0	70.0	26.0	67.5	58.0	2100
	1422.4	1778.0	660.4	1714.5	1473.2	952.5
4 x 600 & 800	72.0	70.0	26.0	67.5	74.0	2600
	1828.8	1778.0	660.4	1714.5	1879.6	1179.3
2 x 1000 & 1200	56.0	70.0	26.0	67.5	58.0	2000
	1422.4	1778.0	660.4	1714.5	1473.2	907.2
3 x 1000 & 1200	82.0	70.0	26.0	67.5	84.0	3000
	2082.8	1778.0	660.4	1714.5	2133.6	1360.8
4 x 1000 & 1200	106.0	70.0	26.0	67.5	108.0	3800
	2692.4	1778.0	660.4	1714.5	2743.2	1723.6

\*400Hz filters available upon request. Will require external power factor correction coil. Please contact Tyco Electronics Application Engineering 847-680-7400 ext.117.

Max. Operating Voltage	
A6:	120/208V, 60 Hz
B6:	277/480V, 60 Hz
A4:	120/208V, 400 Hz

## CDSUX-C Series

### Features

- Hermetically sealed, constructed of 16 gauge cold rolled steel
- All non-conductive surfaces protected with suitable painting
- Removable input cover for terminal access and field wiring connection
- Threaded conduit fitting with flexible lead on the load side
- Knockouts provided on the input side
- Discharge bleeder resistor provided to reduce shock hazard
- HEMP surge protector provided upon request

### Electrical Characteristics

#### Voltage Drop:

Less than 1% @ unity power factor.

#### Overload:

140% of rated current for 15 minutes.

#### Harmonic Distortion:

Less than 2% @ full rated current.

#### Dielectric Withstanding Voltage:

Per MIL-F-15733 and UL1283.

#### D.C. Insulation Resistance:

Per MIL-STD-202, Method 202.

#### Terminal Strength:

Per MIL-STD-202, Method 211, Condition E.

#### Temperature Rise:

Per MIL-F-15733.

#### R.F. Radiation:

100 dB minimum shielding effectiveness.

#### Insertion Loss:

100 dB from 14 kHz - 10 GHz per MIL-STD-220A, under load condition, using extended range buffer networks over the frequency range of 14 kHz - 20 MHz.

### Applicable Publications:

MIL-F-15733 — Filters, radio interference

MIL-STD-202F — Test methods for Components

MIL-STD-220A — Test method of Insertion Loss

MIL-STD-285 — Test method for Shielding Effectiveness

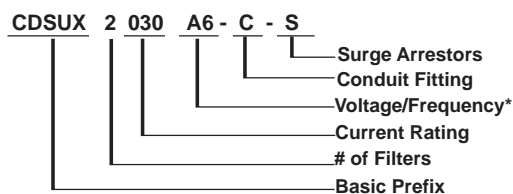
NFPA 70-1987 — National Electric Code

486A - 1983 — Wire Connectors and Lug

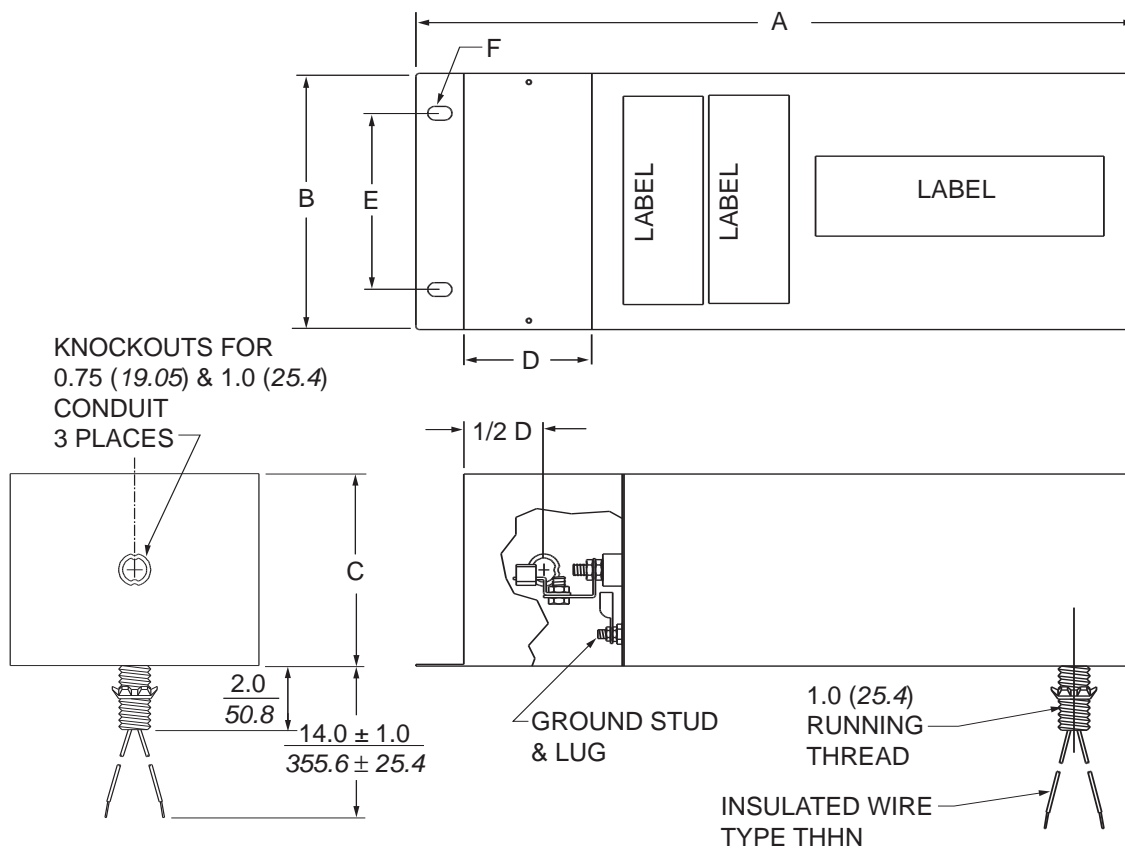
UL1283 — Underwriter Laboratories



### How to Order:



**CDSUX-C Series (Continued)**



CDSUX	Current (Amps)	Dimensions						Wire Gauge (AWG/mm <sup>2</sup> )	Approx. Weight (Pounds/KG)
		A ±.063 [1.6]	B ±.063 [1.6]	C ±.063 [1.6]	D	E	F		
1010**-C	10	21.0	4.0	5.0	5.0	3.0	.31 x .50	10	15
		533.4	101.6	127.0	127.0	76.2	7.87 x 12.7	5.26	6.80
2010**-C	2 x 10	21.0	8.0	5.0	5.0	5.5	.43 x .75	10	30
		533.4	203.2	127.0	127.0	139.7	10.9 x 19.1	5.26	13.6
1030**-C	30	26.0	6.0	6.0	5.0	4.0	.31 x .50	6	30
		660.4	152.4	152.4	127.0	101.6	7.87 x 12.7	13.20	13.6
2030**-C	2 x 30	26.0	12.0	6.0	5.0	9.0	.43 x .75	6	60
		660.4	304.8	152.4	127.0	228.6	10.9 x 19.1	13.20	27.2
1060**-C	60	32.0	8.0	6.0	6.0	5.5	.43 x .75	6	60
		812.8	203.2	152.4	152.4	139.7	10.9 x 19.1	13.20	27.2
1100**-C	100	34.0	8.0	6.0	8.0	5.5	.43 X .75	2	70
		863.6	203.2	152.4	203.2	139.7	10.9 x 19.1	33.6	31.8
1150**-C	150	41.0	10.0	6.0	9.0	9.0	.43 X .75	0	90
		1041.4	254.0	152.4	228.6	228.6	10.9 x 19.1	53.5	40.8
1225**-C	225	41.0	10.0	6.0	9.0	9.0	.43 X .75	250 MCM	120
		1041.4	254.0	152.4	228.6	228.6	10.9 x 19.1	126.0	54.4

\*400Hz filters available upon request. Will require external power factor correction coil. Please contact Tyco Electronics Application Engineering 847-680-7400 ext.117.

Max. Operating Voltage	
A6:	120/208V, 60 Hz
B6:	277/480V, 60 Hz
A4*:	120/208V, 400 Hz

## CDSUW-C Series

### Features

- Hermetically sealed, constructed of 16 gauge cold rolled steel
- All non-conductive surfaces protected with suitable painting
- Removable input cover for terminal access and field wiring connection
- Threaded conduit fitting with flexible lead on the load side
- Knockouts provided on the input side
- Discharge bleeder resistor provided to reduce shock hazard
- HEMP surge protector provided upon request

### Electrical Characteristics

#### Voltage Drop:

Less than 1% @ unity power factor.

#### Overload:

140% of rated current for 15 minutes.

#### Harmonic Distortion:

Less than 2% @ full rated current.

#### Dielectric Withstanding Voltage:

Per MIL-F-15733 and UL1283.

#### D.C. Insulation Resistance:

Per MIL-STD-202, Method 202.

#### Terminal Strength:

Per MIL-STD-202, Method 211, Condition E.

#### Temperature Rise:

Per MIL-F-15733.

#### R.F. Radiation:

100 dB minimum shielding effectiveness.

#### Insertion Loss:

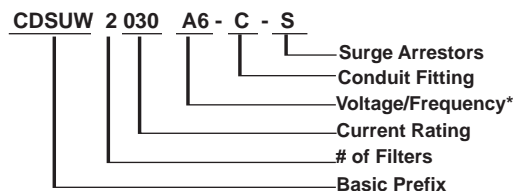
100 dB from 14 kHz - 10 GHz per MIL-STD-220A, under load condition.

### Applicable Publications:

MIL-F-15733 — Filters, radio interference  
MIL-STD-202F — Test methods for Components  
MIL-STD-220A — Test method of Insertion Loss  
MIL-STD-285 — Test method for Shielding Effectiveness  
NFPA 70-1987 — National Electric Code  
486A - 1983 — Wire Connectors and Lug  
UL1283 — Underwriter Laboratories

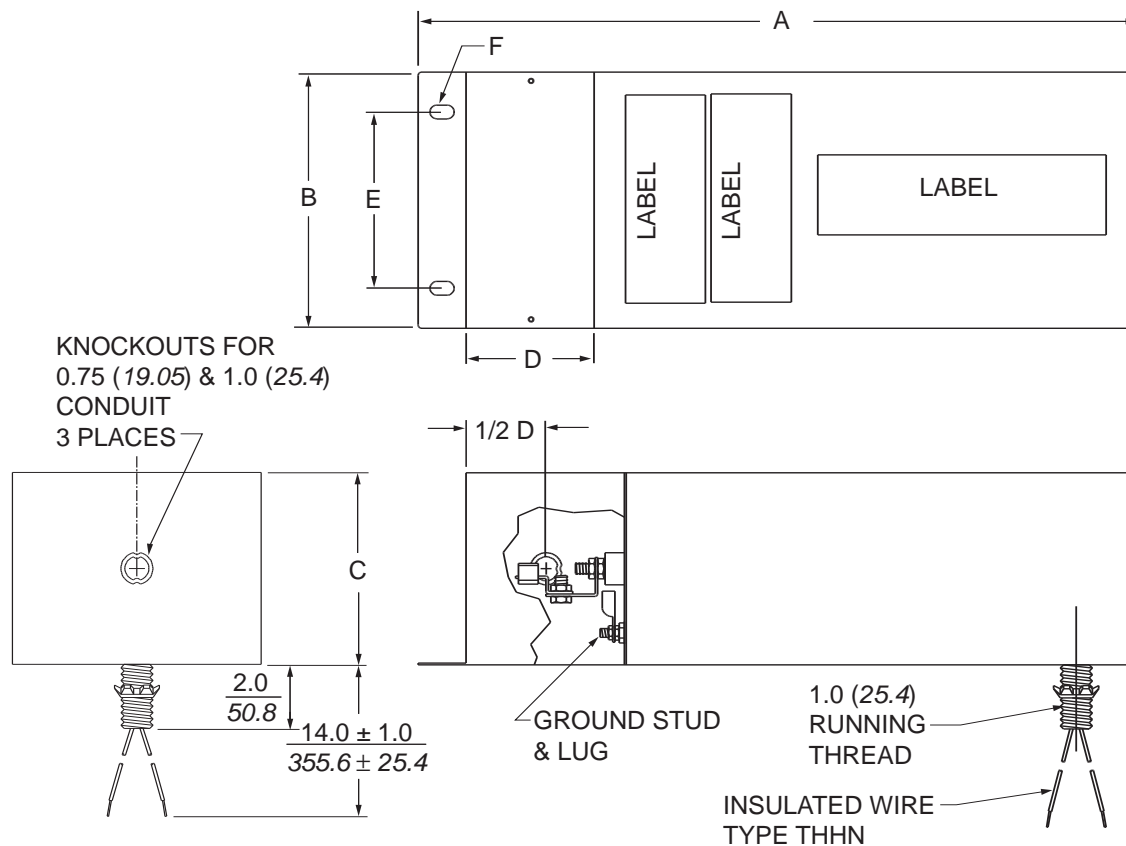


### How to Order:





**CDSUW-C Series** (Continued)



Facility EMI Filters — Stand-Alone Filters Threaded Conduit Fitting

CDSUW	Current (Amps)	Dimensions						Wire Gauge (AWG/mm <sup>2</sup> )	Approx. Weight (Pounds/KG)
		A ±.063 [1.6]	B ±.063 [1.6]	C ±.063 [1.6]	D	E	F		
1010**-C	10	21.0	4.0	5.0	5.0	3.0	.31 x .50	10	15
		533.4	101.6	127.0	127.0	76.2	7.87 x 12.7	5.26	6.80
2010**-C	2 x 10	21.0	8.0	5.0	5.0	5.5	.43 x .75	10	30
		533.4	203.2	127.0	127.0	139.7	10.9 x 19.1	5.26	13.6
1030**-C	30	26.0	6.0	6.0	5.0	4.0	.31 x .50	6	30
		660.4	152.4	152.4	127.0	101.6	7.87 x 12.7	13.20	13.6
2030**-C	2 x 30	26.0	12.0	6.0	5.0	9.0	.43 x .75	6	60
		660.4	304.8	152.4	127.0	228.6	10.9 x 19.1	13.20	27.2
1060**-C	60	32.0	8.0	6.0	6.0	5.5	.43 x .75	6	60
		812.8	203.2	152.4	152.4	139.7	10.9 x 19.1	13.20	27.2
1100**-C	100	34.0	8.0	6.0	8.0	5.5	.43 X .75	2	70
		863.6	203.2	152.4	203.2	139.7	10.9 x 19.1	33.6	31.8
1150**-C	150	41.0	10.0	6.0	9.0	9.0	.43 X .75	0	90
		1041.4	254.0	152.4	228.6	228.6	10.9 x 19.1	53.5	40.8
1225**-C	225	41.0	10.0	6.0	9.0	9.0	.43 X .75	250 MCM	120
		1041.4	254.0	152.4	228.6	228.6	10.9 x 19.1	126.0	54.4

\*400Hz filters available upon request. Will require external power factor correction coil. Please contact Tyco Electronics Application Engineering 847-680-7400 ext.117.

Max. Operating Voltage	
A6:	120/208V, 60 Hz
B6:	277/480V, 60 Hz
A4*:	120/208V, 400 Hz

## CDSUA Series

### Features

- All four current ratings utilize a single housing (single-wire 30, 60, 100A and two-wire 30A)
- Hermetically sealed using 18 AWG long terne steel
- Removable input cover provides quick access to terminals
- Three knockouts on the input side
- Discharge bleeder resistor provided to reduce shock hazard
- Surge protector provided upon request

### Electrical Characteristics

#### Voltage Drop:

Less than 1% @ unity power factor.

#### Overload:

140% of rated current for 15 minutes.

#### Harmonic Distortion:

Less than 2% @ full rated current.

#### Dielectric Withstanding Voltage:

Per MIL-F-15733 and UL1283.

#### D.C. Insulation Resistance:

Per MIL-STD-202, Method 302.

#### Terminal Strength:

Per MIL-STD-202, Method 211, Condition E.

#### Current Rating:

Single-Wire 30, 60 and 100A, Two-Wire 30A

#### R.F. Radiation:

100 dB minimum shielding effectiveness.

#### Insertion Loss:

100 dB from 100 kHz - 10 GHz per MIL-STD-220A

#### Operating Frequency:

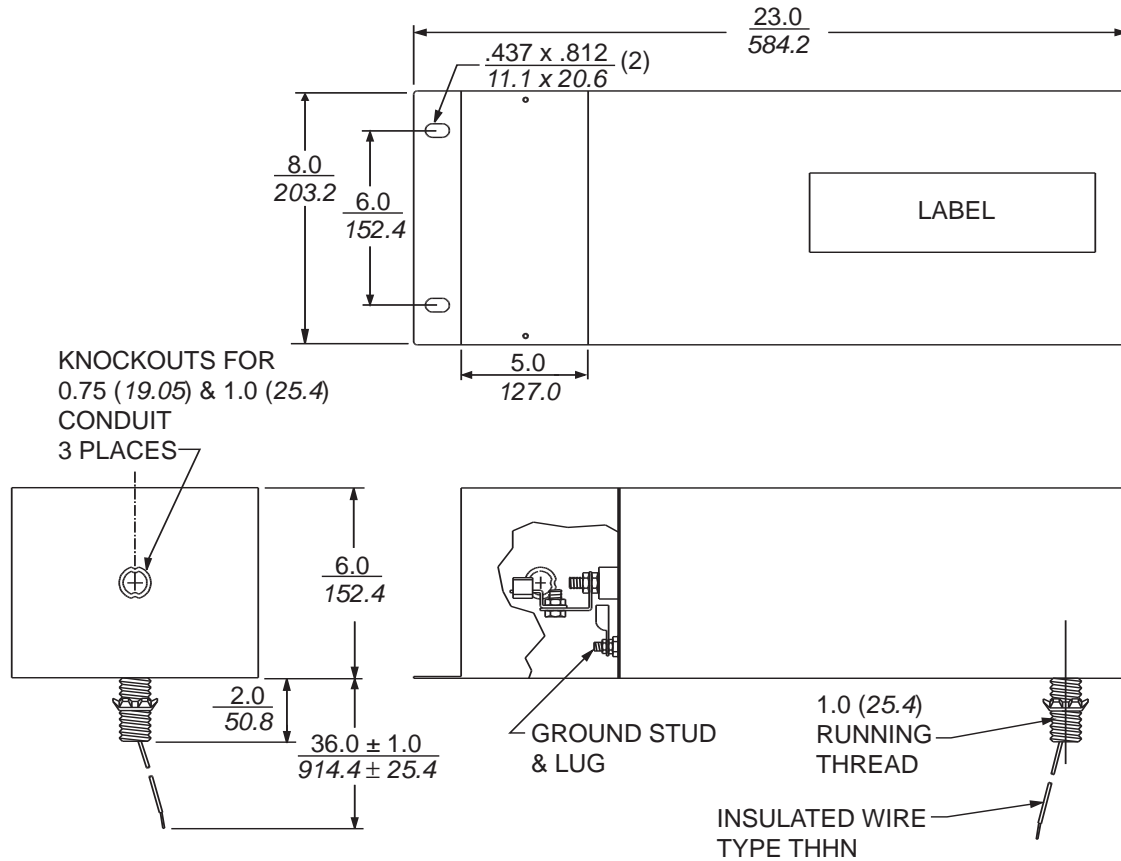
50/60Hz

#### Operating Voltage:

277/480 vac (max.)



**CDSUA Series** (Continued)



Part Nos.	Current (Amps)	Wire Gauge (AWG)	# of Wires
CDSUA1030-C	30	6	1
CDSUA1060-C	60	6	1
CDSUA1100-C	100	1	1
CDSUA2030-C	2 x 30	6	2

## SLA Series

### Enclosure

- Modified NEMA I, constructed of not less than #14 gauge CRS with galvanized bulkhead
- Finish: Blue enamel per FED-STD-595 to all non-conductive surfaces
- R. F. Radiation of the shielded (load) greater than 100 dB up to 10 GHz
- Front cover access
- Prewired push pin terminal blocks or screw type terminations
- MOV or Gas tube arrestors installed upon request
- Legs for floor mount available

### Individual Filters

- Each filter is a dual circuit
- Hermetically sealed with soldered seams
- Covered with suitable plating
- Designed and tested per MIL-F-15733, latest revision

### Filter Selection (Part Numbers for Ordering)

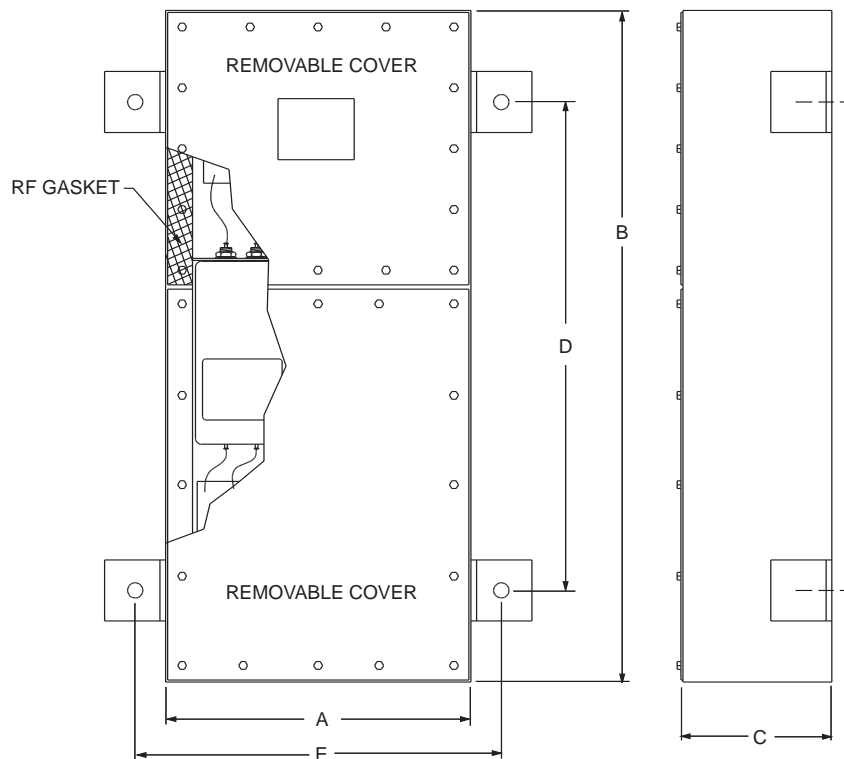
WFFV3470 — Telephone (KS20162)  
 WFFV3544 — Telephone (Standard)  
 WFFV3577 — Telephone (Special)  
 WFFV3561 — Data (9.6 KBAUD)  
 WFFV3562 — Data (19.2 KBAUD)  
 WFFV3563 — Data (56.0 KBAUD)  
 WFFV3564 — Fire Alarm  
 WFFV3575 — Intercom  
 NF21590 — Control (1.0 A)  
 NF21593-3 — Control (3.0 A)  
 NF21593-5 — Control (5.0 A)

### Applicable Publications:

MIL-F-15733 — Filters, Radio Interference  
 MIL-STD-220A — Test Method of Insertion Loss

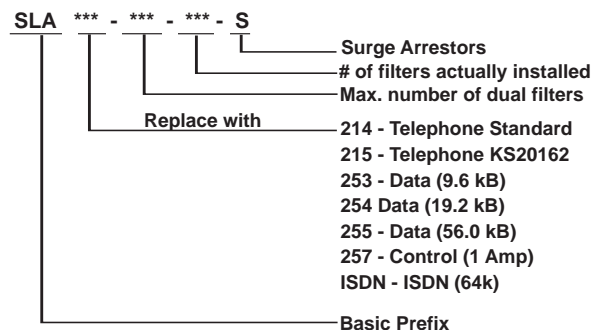


**SLA Series** (Continued)



Enclosure w/Filters	Number of Dual Filters	Dimensions					Approx. Weight (Pounds/KG)
		A $\pm 0.125$ [3.18]	B $\pm 0.25$ [3.18]	C $\pm 0.25$ [6.4]	D $\pm 0.06$ [1.5]	E $\pm 0.06$ [1.5]	
SLA***-4	4	8.0	20.0	5.0	14.0	10.0	18
		203.2	508.0	127.0	355.6	254.0	8.16
SLA***-10	10	18.0	20.0	5.0	14.0	20.0	45
		457.2	508.0	127.0	355.6	508.0	20.4
SLA***-25	25	18.0	24.0	9.5	18.0	20.0	90
		457.2	609.6	241.3	457.2	508.0	40.8
SLA***-50	50	32.0	26.0	9.5	20.0	34.0	115
		812.8	660.4	241.3	508.0	863.6	52.2
SLA***-100	100	42.0	28.0	12.75	22.0	44.0	285
		1066.8	711.2	323.8	558.8	1117.6	129.3
SLA***-150	150	32.0	50.0	15.5	44.0	34.0	475
		823.8	1270.0	393.7	1117.6	863.6	215.5
SLA***-200	200	34.0	64.0	15.5	61.5	36.0	650
		863.6	1625.6	393.7	1562.1	914.4	294.8

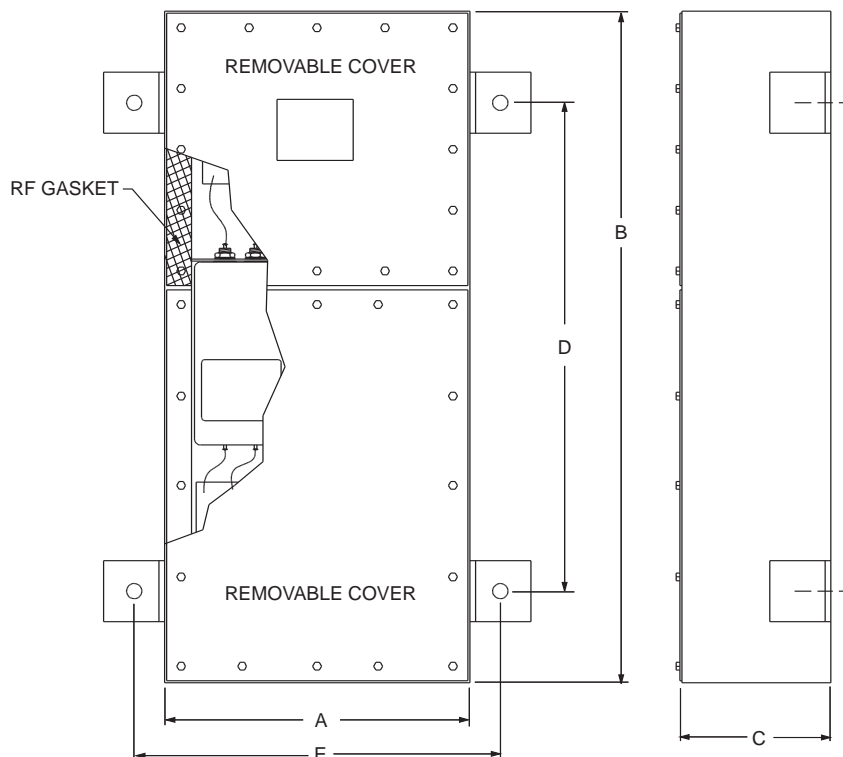
**How to Order:**



**Example: SLA214-100-75-S**

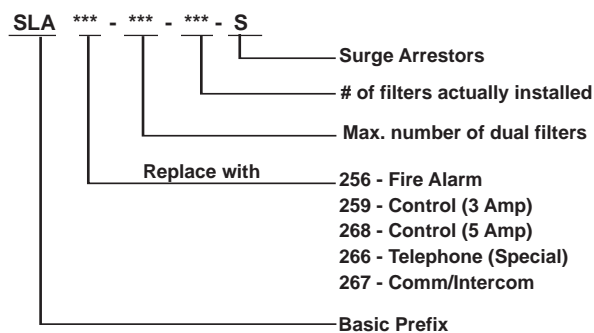
(75 Telephone Filters installed inside 100 space cabinet with surge arrestors)

**SLA Series** (Continued)



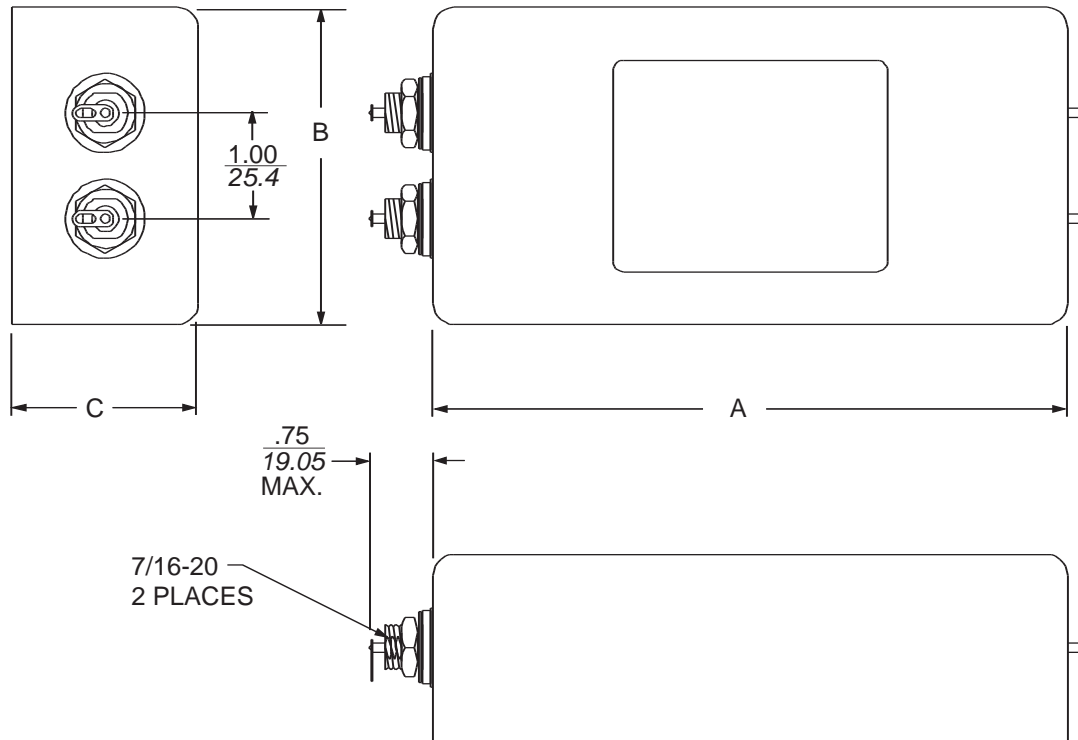
Enclosure w/Filters	Number of Dual Filters	Dimensions					Approx. Weight (Pounds/KG)
		A $\pm 0.125$ [3.18]	B $\pm 0.125$ [3.18]	C $\pm 0.25$ [6.4]	D $\pm 0.06$ [1.5]	E $\pm 0.06$ [1.5]	
SLA***-4	4	10.0 254.0	22.0 558.8	6.0 152.4	12.0 304.8	12.0 304.8	20 9.08
SLA***-10	10	20.0 508.0	22.0 558.8	6.0 152.4	22.0 558.8	22.0 558.8	50 22.7
SLA***-25	25	20.0 508.0	28.0 711.2	12.0 304.8	22.0 558.8	22.0 558.8	140 63.5
SLA***-50	50	38.0 965.2	28.0 711.2	12.0 304.8	22.0 558.8	40.0 1016.0	250 113.4
SLA***-100	100	54.0 1371.6	30.0 762.0	15.0 381.0	24.0 609.6	56.0 1422.4	450 204.2
SLA***-150	150	36.0 914.4	64.0 1625.6	18.0 457.2	56.0 1422.4	38.0 965.2	670 303.9
SLA***-200	200	42.0 1066.8	72.0 1828.8	22.0 558.8	64.0 1625.6	44.0 1117.6	1000 453.6

**How to Order:**



**Example: SLA256-100-80**  
 (80 Fire alarm filters installed inside 100 space cabinet)

**SLA Series** (Continued)



Model No.	Type	Impedance (Ohms)	Insertion Loss (dB)		I (Amp)	Case Size			Filter Installed in Cabinet
			Pass Band	Stop Band		A	B	C	
WV3470	TEL (KS20162)	300/600	5kHz	65 dB, 14kHz, 100 dB, 30kHz-10GHz	0.16	5.25 133.4	2.50 63.5	1.25 31.8	SLA215
WV3544	TEL (STANDARD)	300/600	3kHz	100 dB, 14kHz-10GHz	0.5	5.25 133.4	2.50 63.5	1.25 31.8	SLA214
WV3577	TEL (SPECIAL)	300/600	5kHz	80 dB, 14kHz-10GHz	0.5	6.00 152.4	3.00 76.2	1.75 44.5	SLA266
WV3561	DATA (9.6kB)	300/600	28kHz	100 dB, 150kHz-10GHz	0.2	5.25 133.4	2.50 63.5	1.25 31.8	SLA253
WV3562	DATA (19.2kB)	50/100	56kHz	100 dB, 300kHz-10GHz	0.2	5.25 133.4	2.50 63.5	1.25 31.8	SLA254
WV3563	DATA (56kB)	50/100	168kHz	100 dB, 1MHz-10GHz	0.2	5.25 133.4	2.50 63.5	1.25 31.8	SLA255
ISDN64	DATA (64k)	67.5/135	160kHz	100 dB, 1MHz to 10GHz	0.1A	5.25 133.4	2.50 63.5	1.25 31.8	SLAISDN
WV3564	FIRE ALARM (Analog)	63/126	N/A	100 dB, 14kHz-10GHz	1.0	6.00 152.4	3.00 76.2	1.75 44.5	SLA256
WV3575	COMM/INTERCOM	22.5/95	3kHz	100 dB, 14kHz-10GHz	0.5	6.00 152.4	3.00 76.2	1.75 44.5	SLA267
NF21590	CONTROL (1A)	50/100	N/A	100 dB, 14kHz-10GHz	1.0	5.25 133.4	2.50 63.5	1.25 31.8	SLA257
NF21593-3	CONTROL (3A)	50/100	N/A	100 dB, 14kHz-10GHz	3.0	6.00 152.4	3.00 76.2	1.75 44.5	SLA259
NF21593-5	CONTROL (5A)	50/100	N/A	100 dB, 14kHz-10GHz	5.0	6.00 152.4	3.00 76.2	1.75 44.5	SLA257

The above filters are used for AC or DC applications up to 125VAC/400VDC, **EXCEPT** WV3575 which is 50 VAC/100 VDC.

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**CDFS Series**

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**Features**

- Hermetically sealed, constructed cold rolled steel
- Removable input cover for terminal access and field wiring connection
- Threaded conduit fitting with two #20 AWG flexible leads provided on the load side
- Three knockouts on the input side
- Designed and tested per MIL-F-15733 (latest revision)

**Filter Selection (Part Numbers for Ordering)**

CDFS1038 — Telephone (KS20162)  
CDFS1004 — Telephone (Standard)  
CDFS1039 — Telephone (Special)  
CDFS1030 — Data (9.6 KBAUD)  
CDFS1040 — Data (19.2 KBAUD)  
CDFS1041 — Data (56.0 KBAUD)  
CDFS1028 — Fire Alarm  
CDFS1029 — Comm/Intercom  
CDFS1042 — Control (1.0 A)  
CDFS1043 — Control (3.0 A)  
CDFS1044 — Control (5.0 A)

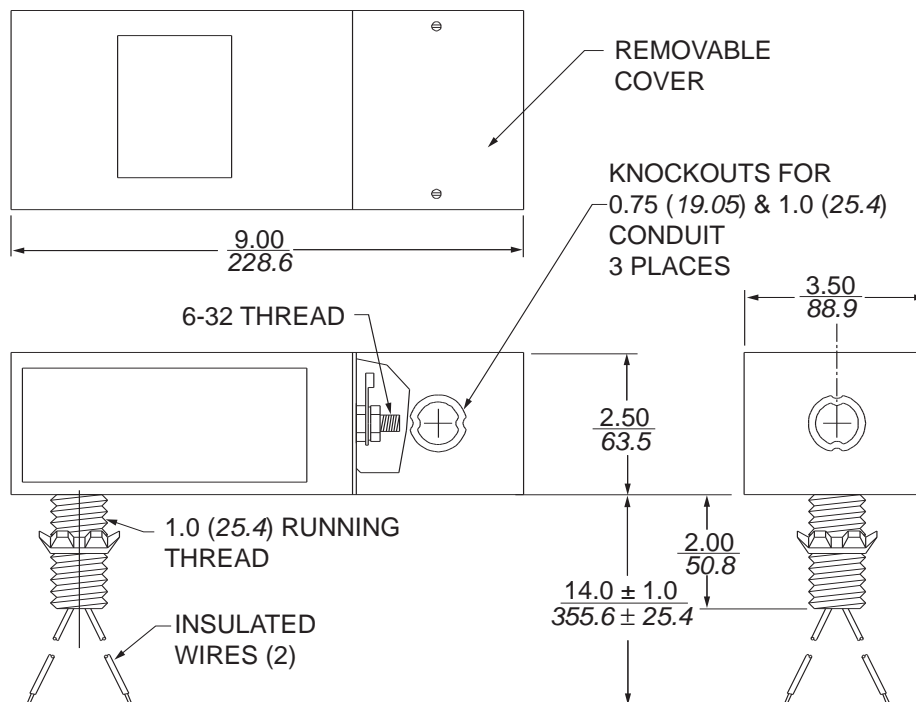
**Applicable Publications:**

MIL-F-15733 — **Filters, Radio Interference**  
MIL-STD-220A — **Test Method of Insertion Loss**





## CDFS Series (Continued)



Model No.*	Type	Impedance (Ohms)	Insertion Loss (dB)		I (Amp)
			Pass Band	Stop Band	
CDFS1038	TEL (KS20162)	300/600	5kHz	65 dB, 14kHz, 100 dB, 30kHz-10GHz	0.16
CDFS1004-A	TEL (STANDARD)	300/600	3kHz	100 dB, 14kHz-10GHz	0.5
CDFS1039	TEL (SPECIAL)	300/600	5kHz	80 dB, 14kHz-10GHz	0.5
CDFS1030	DATA (9.6kB)	300/600	28kHz	100 dB, 200kHz-10GHz	0.2
CDFS1040	DATA (19.2kB)	50/100	56kHz	100 dB, 300kHz-10GHz	0.2
CDFS1041	DATA (56kB)	50/100	168kHz	100 dB, 1MHz-10GHz	0.2
CDFS1028	FIRE ALARM (Analog)	N/A	N/A	100 dB, 14kHz to 10GHz	1.0
CDFS1029	COMM/INTERCOM	22.5/45	3kHz	100 db, 14kHz-10GHz	0.5
CDFS1042	CONTROL (1.0A)	N/A	N/A	100 db, 14kHz-10GHz	1.0
CDFS1043	CONTROL (3.0A)	N/A	N/A	100 db, 14kHz-10GHz	3.0
CDFS1044	CONTROL (5.0A)	N/A	N/A	100 db, 14kHz-10GHz	5.0

The above filters are used for AC or DC applications up to 125VAC/400VDC, **EXCEPT** CDFS1029 which is 50 VAC/100 VDC.

\*Add "S" for surge arrestors. Ex: CDFS1038-S

## MRI 2030 High Performance (100 dB 100 kHz to 10 GHz)

### Features

- UL 1283 listed
- Filter compartment hermetically sealed, constructed of 16 gauge cold rolled steel
- Removable input cover for terminal access and field wiring connection
- Threaded conduit fitting with flexible lead on the load side
- Knockouts provided on the input side
- Discharge bleeder resistor provided to reduce shock hazard

### Electrical Characteristics

**Voltage Drop:**

Less than 1% @ unity power factor.

**Overload:**

140% of rated current for 15 minutes.

**Harmonic Distortion:**

Less than 2% @ full rated current.

**Dielectric Withstanding Voltage:**

Per MIL-F-15733 and UL1283.

**D.C. Insulation Resistance:**

Per MIL-STD-202, Method 202.

**Terminal Strength:**

Per MIL-STD-202, Method 211, Condition E.

**Temperature Rise:**

Per MIL-F-15733.

**R.F. Radiation:**

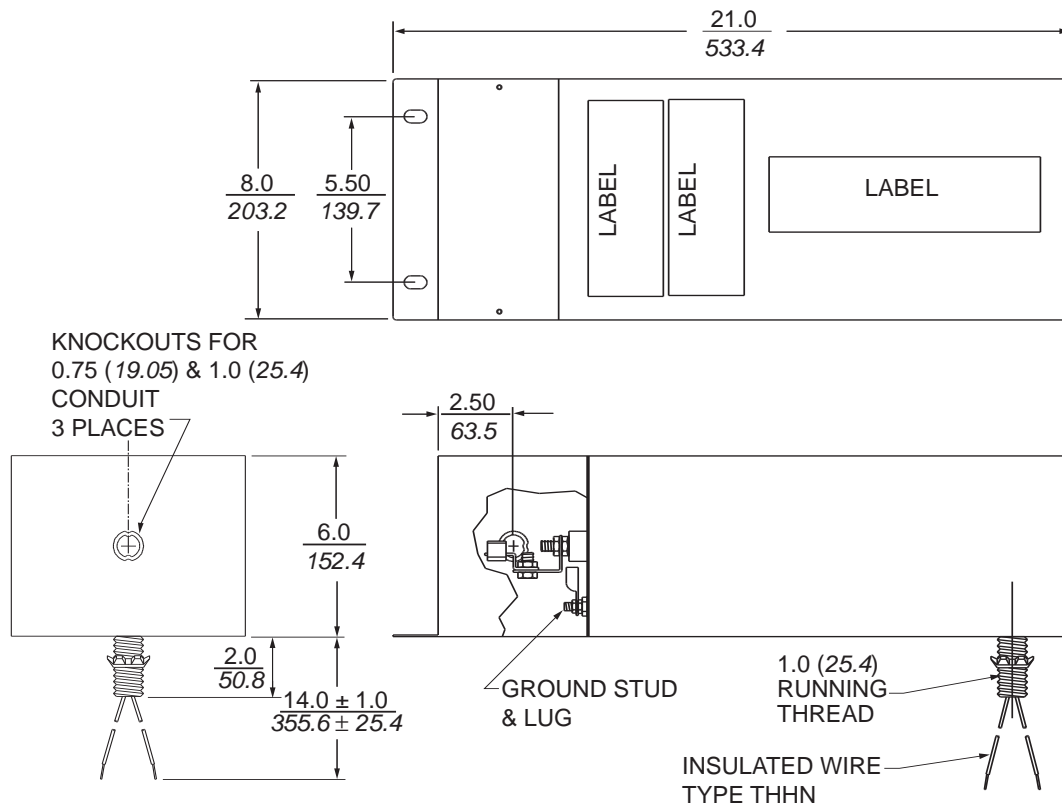
100 dB minimum shielding effectiveness.

**Insertion Loss:**

100 dB 100 kHz to 10GHz per MIL-STD-220A, under load condition.



**MRI 2030 High Performance (100 dB 100 kHz to 10 GHz) (Continued)**



## MRI 2030R (100 dB 5 MHz to 20 GHz)

### Features

- UL listed and CSA Certified (Pending)
- Competitively priced
- Removable input cover for terminal access and field wiring connection
- Threaded conduit fitting with flexible lead on the load side
- Knockouts provided on the input side
- Discharge bleeder resistor provided to reduce shock hazard

### Electrical Characteristics

#### Voltage Drop:

Less than 1% @ unity power factor.

#### Overload:

140% of rated current for 15 minutes.

#### Harmonic Distortion:

Less than 2% @ full rated current.

#### Dielectric Withstanding Voltage:

Per MIL-F-15733 and UL1283.

#### D.C. Insulation Resistance:

Per MIL-STD-202, Method 202.

#### Terminal Strength:

Per MIL-STD-202, Method 211, Condition E.

#### Temperature Rise:

Per MIL-F-15733.

#### R.F. Radiation:

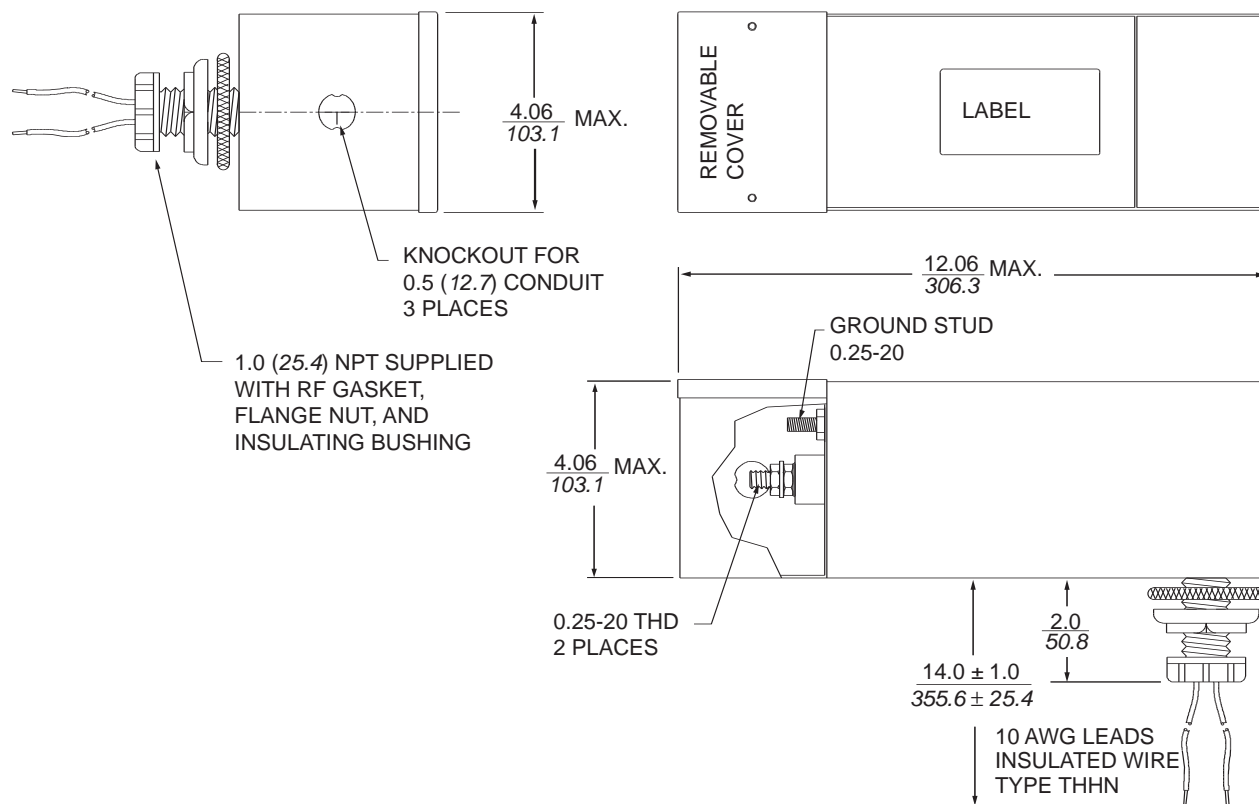
100 dB minimum shielding effectiveness.

#### Insertion Loss:

100 dB from 5 MHz - 20 GHz per MIL-STD-220A, under load condition.



**MRI 2030R (100 dB 5 MHz to 20 GHz) (Continued)**



## Power Factor Correction Coils

### Features

- Used to cancel part of the undesirable capacitive-reactive current due to the line-to-ground capacitors in Power Line Filters operating at 400 Hz power
- Coils are optional for CDEUX and CDEUL filters

### Electrical Characteristics

#### Voltage Rating:

120 VAC/400 Hz

#### Temperature Rise:

Case temperature rise shall not exceed 35°C when operating at an ambient temperature of 25°C.

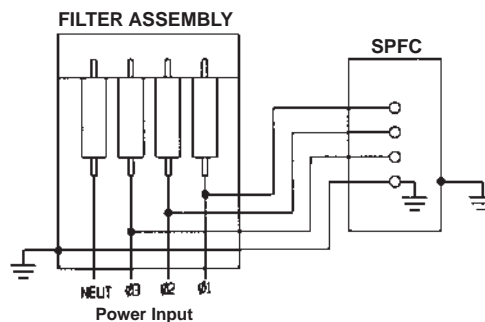
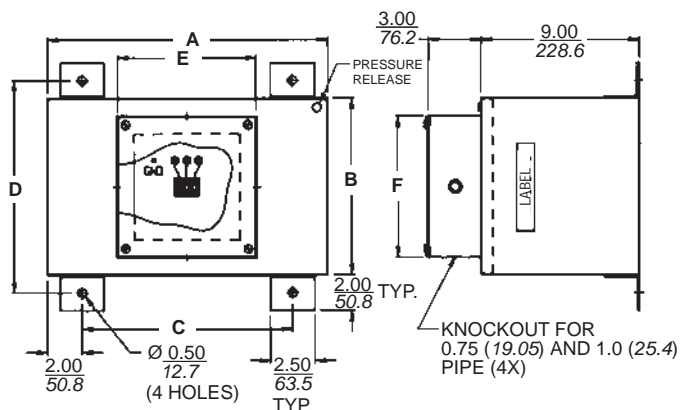
### Materials

#### Unit Case:

#16GA min. steel. All surfaces painted. Unit is filled with mineral oil with pressure release holes. Standard unit is designed for horizontal surface mounting. Vertical surface mounting is available upon special request.

#### Notes:

1. Pressure release device is blocked by a brass cap to keep oil from leaking. After unit is installed, this cap must be replaced with a special cap with pressure release holes.
2. The special cap should be checked frequently to keep all holes unclogged.



Part Nos.	Catalog No.	Dimensions ±0.06 [1.52]						Current per Phase	Used For
		A	B	C	D	E	F		
1609206-2	SPFC301	16.0 406.4	10.0 254.0	12.0 304.8	12.0 304.8	8.0 203.2	8.0 203.2	12A	CDEUL030A4 CDEUX030A4
1609206-4	SPFC302	18.0 457.2	11.0 279.4	14.0 355.6	13.0 330.2	8.0 203.2	8.0 203.2	24A	CDEUL060A4 CDEUX060A4
1609206-6	SPFC303	18.0 457.2	16.0 406.4	14.0 355.6	18.0 457.2	14.0 355.6	12.0 304.8	36A	CDEUL100A4 CDEUX100A4
1609206-7	SPFC304	20.0 508.0	20.0 508.0	16.0 406.4	22.0 558.8	14.0 355.6	12.0 304.8	48A	CDEUL200A4 CDEUX200A4

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**Engineering Notes**

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A large grid of graph paper for engineering notes, consisting of 30 columns and 40 rows of small squares.