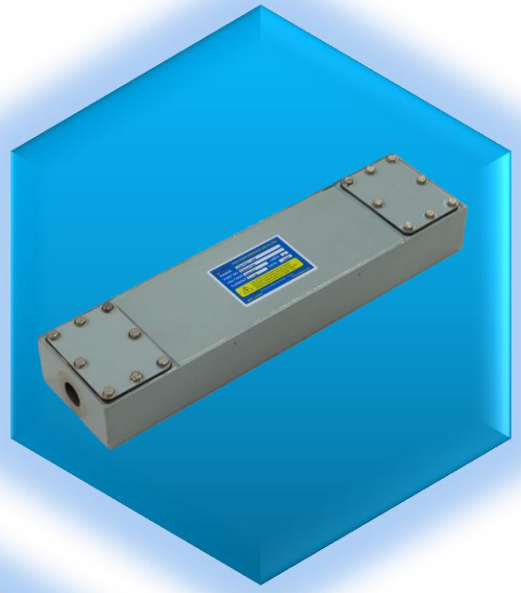
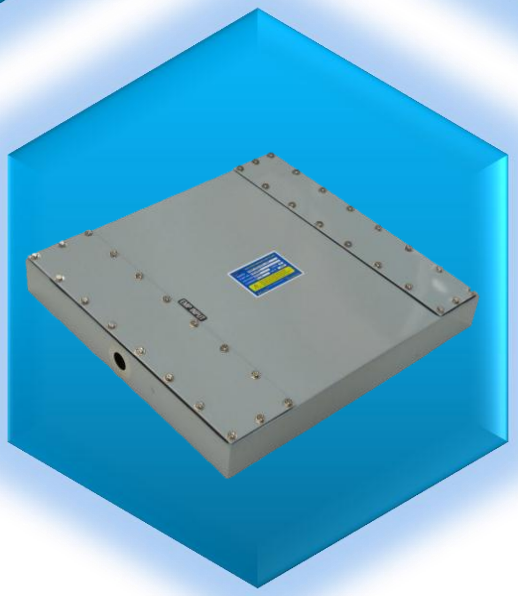
FILTERS FOR CONTROL LINES





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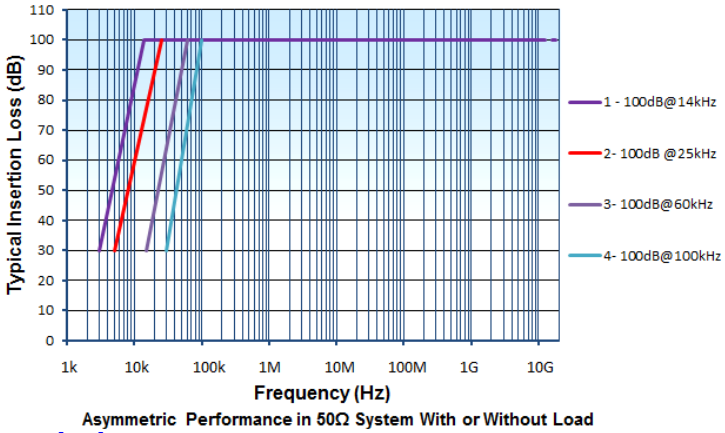
MULTI-LINE AC CONTROL LINE FILTERS



Asymmetric Performance in 50Ω System With or Without Load

Description

A range of multi-line filters suitable for filtering ac control lines and low current power lines on shielded rooms and general installations. All versions are available with transient suppression (see page 5).

Features

- 250V ac with 1A - 10A current ratings (also suitable for 600Vdc)
- 2, 4, or 8 individually filtered lines
- Incorporate MPE self-healing feedthrough capacitors
- RoHS compliant

Ratings and Characteristics

Rated Voltage	250V ac 50/60 Hz or 600Vdc
Test Voltage	2250V dc (prior to fitting any transient suppressors)
Insulation Resistance	> 100MΩ (before fitting discharge resistors)
Discharge Resistors	560kΩ each line to case
Discharge Time to Below 34V	<10s
Maximum Temperature Rise on Full Load	25ºC
Full Load Operating Temperature Range	-40ºC to +50ºC

Product Range

This range of filters is identical to the CF23778 – CF25796 range shown in previous catalogues

Part Number	Current Rating (A) @50ºC	No of Lines	Insertion Loss Curve	Maximum Leakage Current (mA) @ 250V 50Hz	DC Volt Drop per line (V)	Full Load Heat Dissipation per line (W)	Major Dimensions (see page 5 for full dimensions)			Weight (kg)
							Length A	Width B	Depth C	
DS23778	1	2	1	285	2.7	2.7	350	90	45	2.5
DS25791	2	2	2	285	1.3	2.6	350	90	45	2.5
DS25260	5	2	3	285	1	5	350	90	45	2.5
DS25794	10	2	4	285	0.7	7	350	90	45	2.5
DS25263	1	4	1	285	2.7	2.7	350	180	45	5
DS25792	2	4	2	285	1.3	2.6	350	180	45	5
DS25261	5	4	3	285	1	5	350	180	45	5
DS25795	10	4	4	285	0.7	7	350	180	45	5
DS25264	1	8	1	285	2.7	2.7	350	360	45	10
DS25793	2	8	2	285	1.3	2.6	350	360	45	10
DS25262	5	8	3	285	1	5	350	360	45	10
DS25796	10	8	4	285	0.7	7	350	360	45	10

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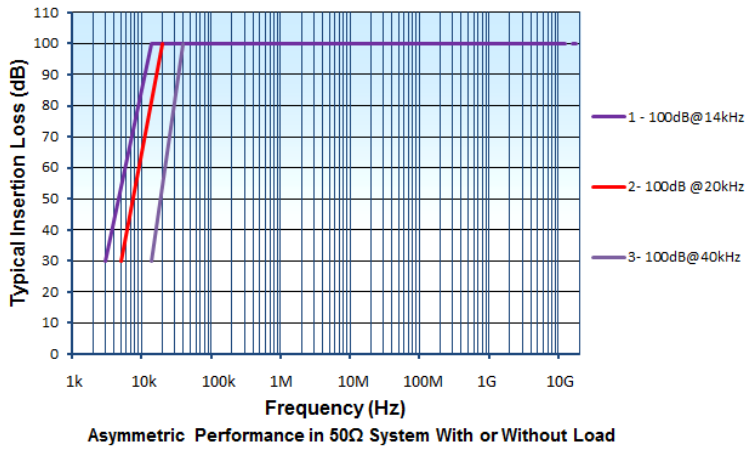
MULTI-LINE DC CONTROL LINE FILTERS



Asymmetric Performance in 50Ω System With or Without Load

Description

A range of multi-line filters suitable for filtering dc control lines and low current dc supplies on shielded rooms and general installations. All versions are available with transient suppression (see page 5).

Features

- 100V dc with 1A - 10A current ratings
- 2, 4, or 8 individually filtered lines
- Incorporate MPE self-healing feedthrough capacitors
- RoHS compliant

Ratings And Characteristics

Rated Voltage	100V dc
Test Voltage	200V dc (prior to fitting any transient suppressors)
Insulation Resistance	> 100MΩ
Maximum Temperature Rise on Full Load	25ºC
Full Load Operating Temperature Range	-40ºC to +50ºC

Product Range

This range of filters is identical to the CF25797 – CF25790 range shown in previous catalogues

Part Number	Current Rating (A) @50ºC	No of Lines	Insertion Loss Curve	DC Volt Drop per line (V)	Full Load Heat Dissipation per line (W)	Major Dimensions (see page 5 for full dimensions)			Weight (kg)
						Length A	Width B	Depth C	
DS25797	1	2	1	0.25	0.25	350	90	45	2.5
DS23776	2	2	1	0.5	1	350	90	45	2.5
DS25269	5	2	2	1	5	350	90	45	2.5
DS25788	10	2	3	0.7	7	350	90	45	2.5
DS25798	1	4	1	0.5	0.5	350	180	45	5
DS23985	2	4	1	0.5	1	350	180	45	5
DS25270	5	4	2	1	5	350	180	45	5
DS25789	10	4	3	0.7	7	350	180	45	5
DS25799	1	8	1	0.5	0.5	350	360	45	10
DS23986	2	8	1	0.5	1	350	360	45	10
DS25271	5	8	2	1	5	350	360	45	10
DS25790	10	8	3	0.7	7	350	360	45	10

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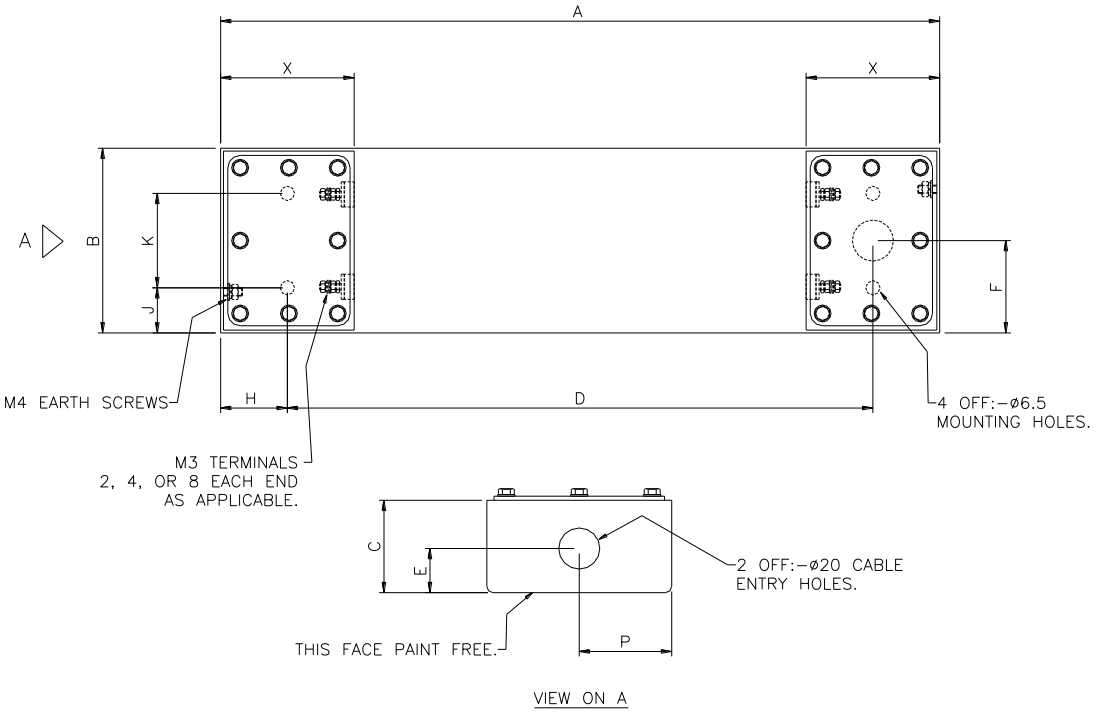
MULTI-LINE CONTROL LINE FILTER DIMENSIONS

Dimensions And Mechanical Details



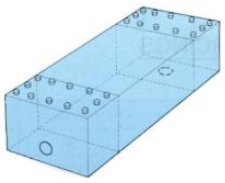
No of Lines	Dimensions (mm)										
	A	B	C	D	E	F	H	J	K	P	X
2	350	90	45	285	21.5	45	32.5	22	46	45	65
4	350	180	45	285	21.5	90	32.5	22	136	90	65
8	350	360	45	285	21.5	180	32.5	22	316	180	65

Transient Suppression

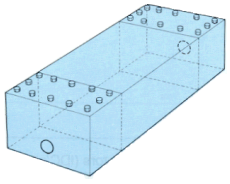
All multi-line filters can be supplied with varistors transient suppression fitted between each input terminal and earth. To specify the transient suppressed version, please add suffix V to the filter part number after the cable entry suffix.

Varistor rating: ac filters 275V ac 45J (10/1000µs)
(ac varistor version also suitable for up to 330V dc)
dc filters 120V dc 30J (10/1000µs)

Cable Entry Options



Part No DS XXXXX / C
End entry base exit
(standard cable entry configuration)



Part No DS XXXXX / A
End entry end exit
(alternative cable entry)

On multi-line filters, two different cable entry options are available as shown.
Standard configuration is suffix C for shielded room mounting, i.e. end entry, base exit.
For end entry and end exit, substitute suffix C with suffix A in the part number.

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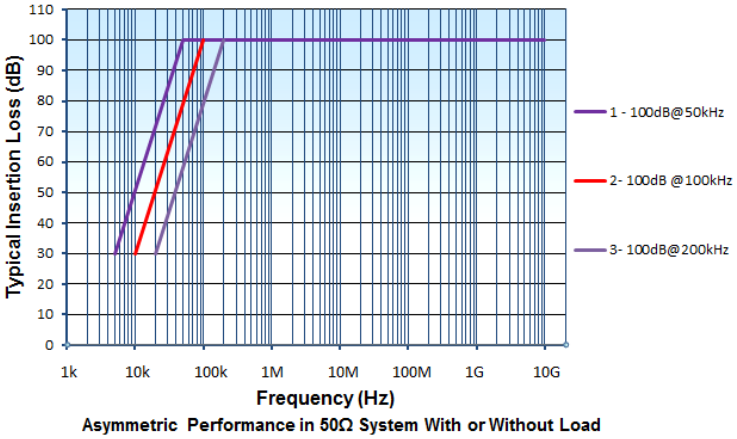
SINGLE LINE DC CONTROL LINE FILTERS



Asymmetric Performance in 50Ω System With or Without Load

Description

A range of single-line dc feedthrough filters for control lines and low current dc power lines.

Features

- 28V dc at 1, 6, and 10A current ratings
- High performance in a small package size
- Incorporate MPE self-healing feedthrough capacitors
- RoHS compliant

Ratings And Characteristics

Rated Voltage	28V dc
Test Voltage	100V dc
Insulation Resistance	> 100MΩ
Maximum Temperature Rise on Full Load	25ºC
Full Load Operating Temperature Range	-40ºC to +50ºC

Product Range

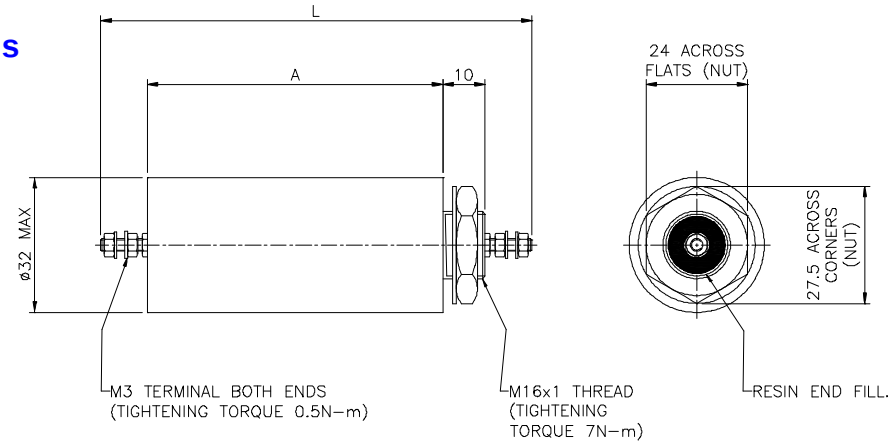
Part Number	Current Rating (A) @50ºC	Insertion Loss Curve	Volt Drop (mV)	Full Load Heat Dissipation (mW)	Dimensions (mm)		Weight (g)
					Length A	Overall L	
DS23540	1	1	150	150	70	102	180
DS23541	6	2	75	450	90	122	240
DS23489	10	3	90	900	70	102	180

Dimensions & Mechanical Details

Dimensions in mm

Mounting hole size 16.5mm

(Ensure bulkhead mounting surface is clean and unpainted to ensure a good earth bond and RF seal)



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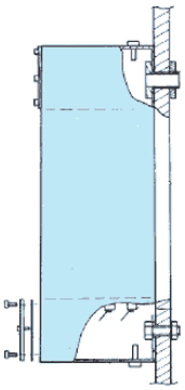
INSTALLATION, BACKGROUND, AND SAFETY

Installation Details



Typical Installation of Multi-Line Filters

Mounting surface should be clean and unpainted to ensure a good earth bond and RF seal
Fixing screws and gland tubes can be supplied as an option

Recommended torque figures:

M3 terminals:	0.5N-m
M4 earth screw:	1.2N-m
M4 lid fixings:	1N-m
M6 mounting screw:	2.5N-m

Safety

Relevant safety standards have been adhered to in the design and manufacture of these products. However, all capacitors will store charge after power has been removed and must be treated with respect as this can be lethal when the voltage and charge are high enough.
In all cases, filters should always be shorted to earth prior to touching terminals to ensure they are fully discharged.
The user should ensure he is familiar with restrictions on capacitance value, earth leakage current, test voltage, and safety labelling requirements, which may be applicable to his particular installation.
Filters must be solidly and permanently earthed, and terminals should be enclosed by the user where appropriate to avoid danger of electric shock.

Custom Designs

MPE offers a rapid design service for custom designs where special packaging, mounting, terminations, or multiple lines are required. Over 50% of the filters manufactured by MPE are custom designs and this can offer a very cost effective installation solution. Please ask to see examples of previously offered solutions.

Further Information

For more detailed technical background information, and application notes concerning the use or compatibility of control line filters, please visit our web site or contact the factory.

Filter Selection Guide

Step 1 Choose voltage, current, and number of lines

↓

Step 2 Select part number (and cable entry suffix for multi-line filters)

↓

Step 3 Confirm compatibility – can application tolerate filter capacitance, inductance, & resistance - ask for advice if needed (application notes available)

↓

Step 4 For transient suppressed version, add suffix V to part number

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This information is for guidance only
MPE reserve the right to make changes without notice

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