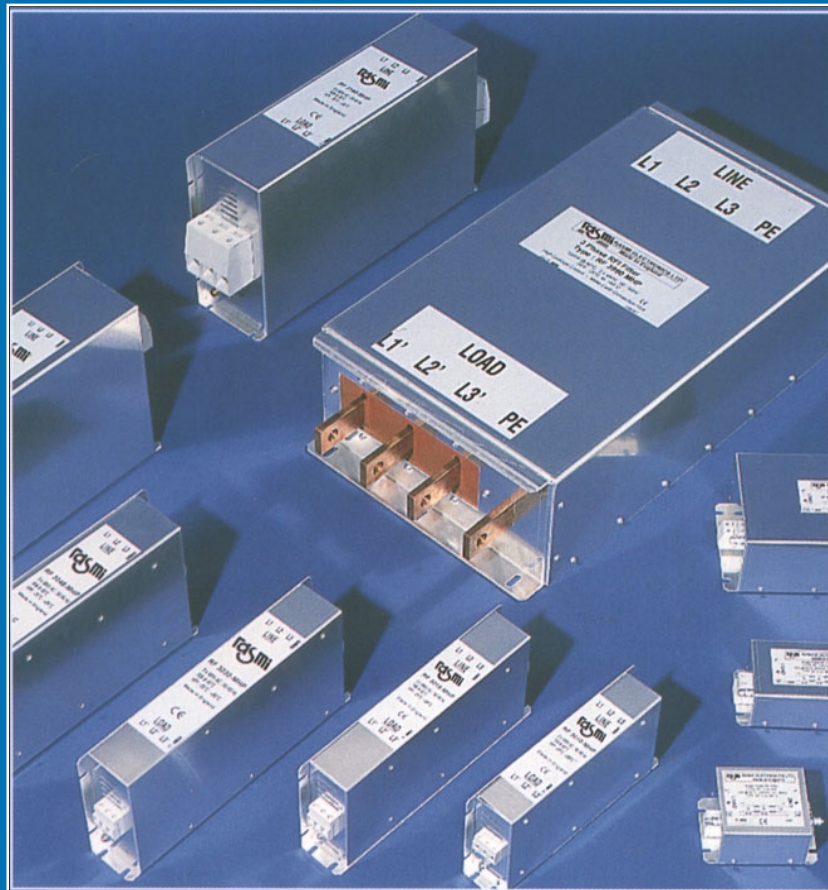




## ***MHP HIGH PERFORMANCE FILTERS***



***EFFICIENT EMC SOLUTIONS***

## MHP Power Line Filters

The MHP range comprises single and three phase power line RFI filters up to 1000A capacity. High performance of this range means effective suppression of high RF emissions in virtually any installation - typical examples being high power industrial motor drives, induction heating, power controllers and supplies.

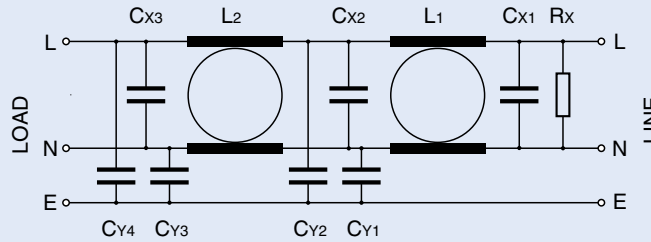
All filters are constructed with approved components:- self healing X and Y interference suppression capacitors approved to SEMKO, NEMKO, DEMKO, VDE, SEV, IMQ, CSA & UL are used. Input and output connections are made by shrouded terminals up to 180A, threaded stud type terminals from 280A to 400A and tag type connections for 500A and above. All units are manufactured to EN133200 specifications and carry the mark.

### RF 1xxx - MHP SINGLE PHASE FILTERS

FILTER PART NO.	RATING @ 40°C	CASE STYLE	MAX CABLE ENTRY(mm <sup>2</sup> )	EARTH LEAKAGE	POWER LOSS (W)	WEIGHT (kg)	ΣL (mH)	ΣCx (µF)	ΣCy (µF)	Rx (MΩ)
RF 1003-MHP	3A @ 250Vac	A1	Faston	3.2mA	1.5	0.2	7.6	1.4	0.09	0.47
RF 1006-MHP	6A @ 250Vac	A2	Faston	3.2mA	4.4	0.3	9.9	3.0	0.09	0.47
RF 1010-MHP	10A @ 250Vac	A3	Faston	3.2mA	6.0	0.4	7.7	3.0	0.09	0.47
RF 1015-MHP	15A @ 250Vac	A4	6 (shrouded)	3.2mA	7.8	0.6	3.3	3.0	0.09	0.47
RF 1020-MHP	20A @ 250Vac	B	10 (shrouded)	3.2mA	10	1.1	3.5	2.5	0.09	0.47
RF 1030-MHP	30A @ 250Vac	B	10 (shrouded)	3.2mA	22	1.1	3.5	2.5	0.09	0.47
RF 1055-MHP	55A @ 250Vac	E	16 (shrouded)	3.2mA	60	3.2	3.2	2.5	0.09	0.47

Insulation test voltage: Phase to Earth = 2.25kV DC Phase to Neutral = 1.1kV DC

#### Circuit Schematic



#### Insertion Loss

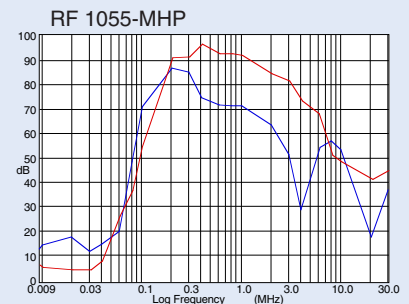
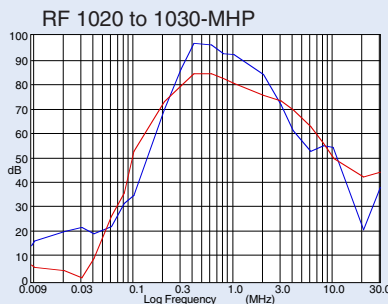
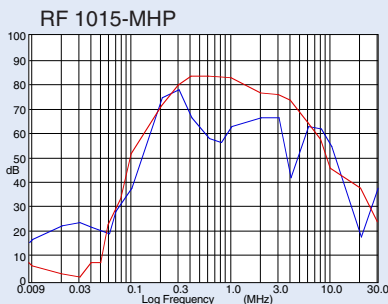
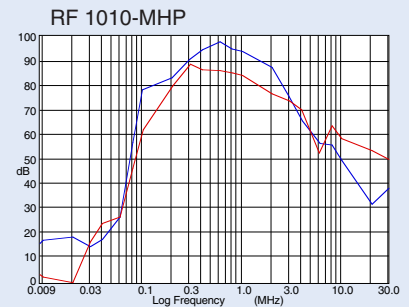
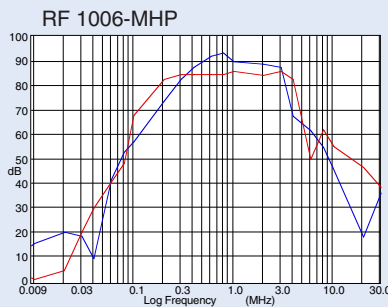
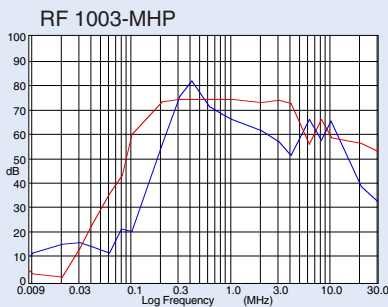
The insertion loss graph of an RFI filter shows the ability to attenuate RF noise across the 9kHz to 30MHz spectrum.

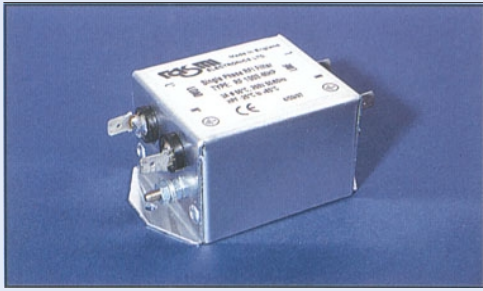
Two curves show the performance for both differential and common mode noise.

Differential mode (symmetrical) noise appears as an RF voltage between the phases. i.e. Noise enters a system along one phase line and returns along another. Symmetrical noise is independent of earth.

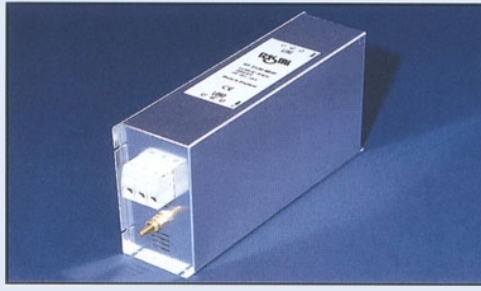
Common mode (asymmetrical) noise appears as an RF voltage between phases and earth. i.e. Noise enters a system along the phase line and returns along the earth path.

As per CISPR 17:- 50Ω/50Ω symmetrical 50Ω/50Ω asymmetrical

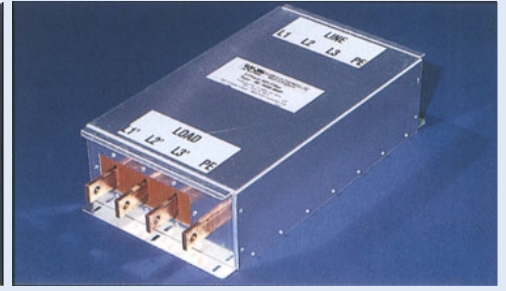




**RF 1003 - MHP**



**RF 3130 - MHP**



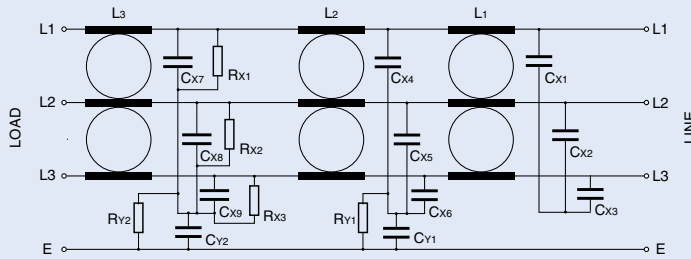
**RF 3990 - MHP**

**RF 3xxx - MHP THREE PHASE FILTERS**

FILTER PART NO.	RATING @40°C	CASE STYLE	MAX CABLE ENTRY (mm <sup>2</sup> )	EARTH LEAKAGE		POWER LOSS (W)	WEIGHT (kg)	ΣL (mH)	ΣCx (µF)	ΣCy (µF)	Rx (MΩ)	Ry (MΩ)
				nom	max							
RF 3010-MHP	10A @ 480Vac	P	6 (shrouded)	0.5mA	14mA	10	1.5	7.4	1.4	0.2	0.47	10
RF 3016-MHP	16A @ 480Vac	Q	6 (shrouded)	0.5mA	27mA	15	1.8	5.6	3.3	0.5	0.47	10
RF 3030-MHP	30A @ 480Vac	R	10 (shrouded)	0.5mA	27mA	27	2.0	1.1	2.9	0.5	0.47	10
RF 3045-MHP	45A @ 480Vac	S	16 (shrouded)	0.5mA	27mA	32	3.0	1.6	2.9	0.5	0.47	10
RF 3055-MHP	55A @ 480Vac	T	25 (shrouded)	0.5mA	27mA	50	3.2	1.2	2.9	0.5	0.47	10
RF 3075-MHP	75A @ 480Vac	T	25 (shrouded)	0.5mA	27mA	50	4.0	0.5	3.3	0.5	0.47	10
RF 3100-MHP	100A @ 480Vac	U	35 (shrouded)	0.5mA	27mA	69	5.5	0.4	3.3	0.5	0.47	10
RF 3130-MHP	130A @ 480Vac	V	70 (shrouded)	3.0mA	130mA	47	7.5	0.7	6.6	1.7	0.47	10
RF 3180-MHP	180A @ 480Vac	V	120 (shrouded)	3.0mA	130mA	82	11	0.5	6.6	1.7	0.47	10
RF 3280-MHP	280A @ 480Vac	W	M12 (stud)	3.0mA	130mA	60	45	0.06	6.6	1.7	0.47	10
RF 3400-MHP	400A @ 480Vac	W	M16 (stud)	3.0mA	130mA	80	50	0.06	6.6	1.7	0.47	10
RF 3500-MHP	500A @ 480Vac	N	M16 (tag)	4.0mA	190mA	100	70	0.13	6.6	2.4	0.47	10
RF 3600-MHP	600A @ 480Vac	N	M16 (tag)	4.0mA	190mA	125	70	0.13	6.6	2.4	0.47	10
RF 3880-MHP	880A @ 480Vac	N	M16 (tag)	4.0mA	190mA	210	72	0.13	6.6	2.4	0.47	10
RF 3990-MHP	1000A @ 480Vac	N	M16 (tag)	4.0mA	190mA	300	72	0.13	6.6	2.4	0.47	10

Insulation test voltage: Phase to Earth = 3.0kV DC Phase to Phase = 2.1kV DC

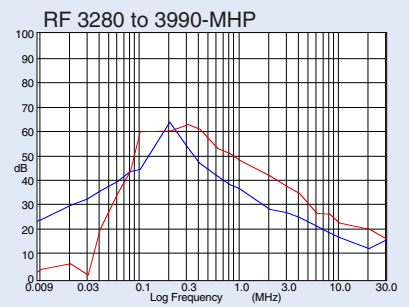
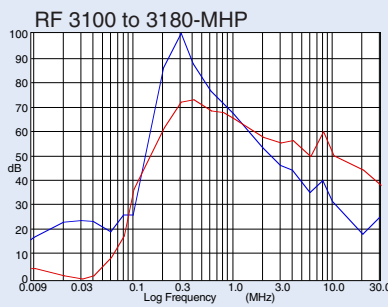
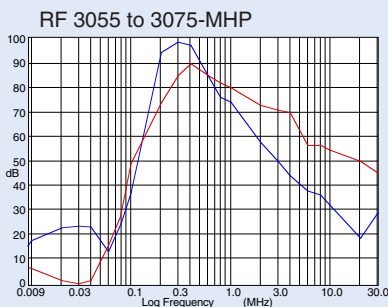
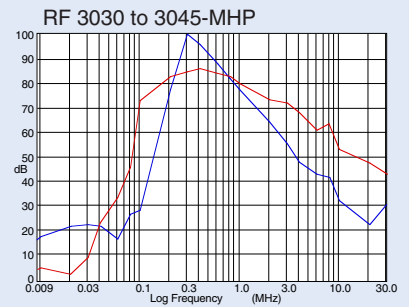
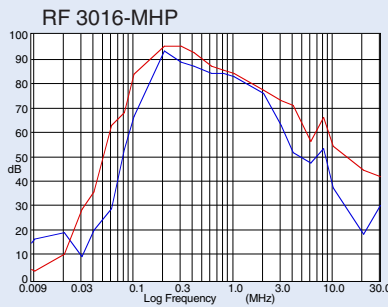
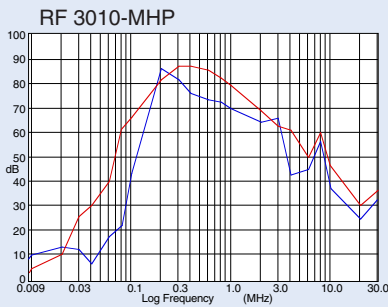
**Circuit Schematic**



Earth leakage currents are given for :-  
 nominal : power to all three phases  
 maximum : power to one phase only.  
 Maximum may occur only during switch-on, switch-off and supply fault conditions

**Insertion Loss**

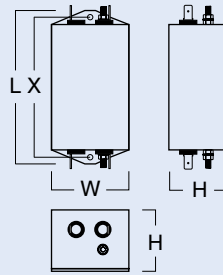
As per CISPR 17:- 50Ω/50Ω symmetrical 50Ω/50Ω asymmetrical



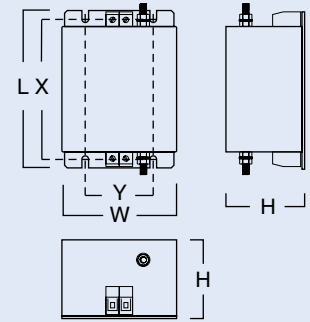
# CASE DIMENSIONS

Case Style	L	W	H	X	Y	Z	Mount
A1	85	54	41	75	-	-	M4
A2	114	58	46	103	-	-	M4
A3	156	58	46	143	-	-	M4
A4	120	86	58	110	51	-	M5
B	170	80	56	160	46	-	M5
E	270	140	90	258	106	-	M6
P	255	50	126	240	25	80	M6
Q	305	55	142	290	30	100	M6
R	335	60	160	320	35	100	M6
S	329	70	185	314	45	120	M6
T	329	80	220	314	55	160	M6
U	379	90	220	364	65	160	M6
V	429	110	240	414	80	160	M6
W	565	300	160	420	275	-	M8
N	690	365	180	648	300	-	M8

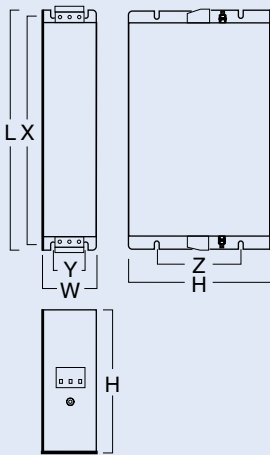
## CASE A1 - A3



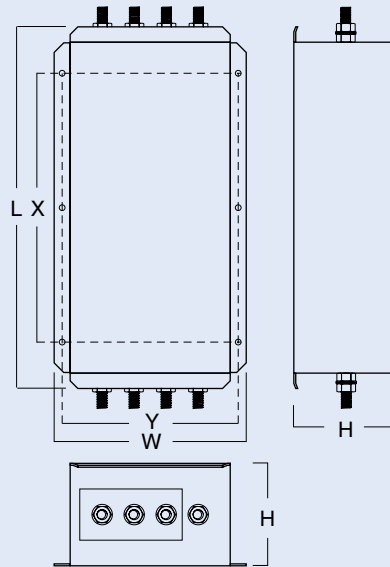
## CASE A4 - E



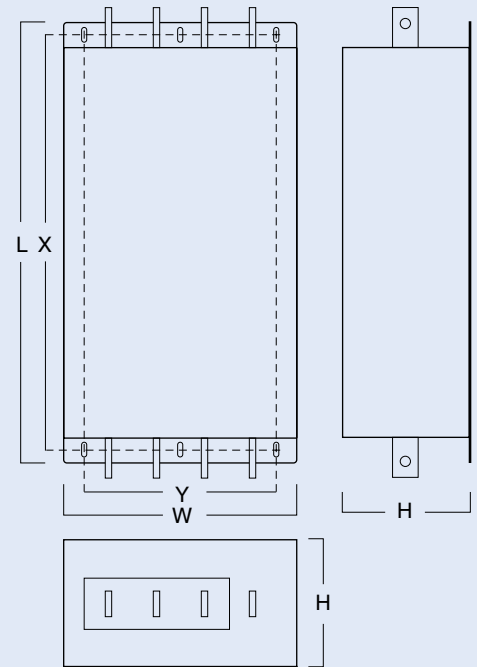
## CASE P - V



## CASE W

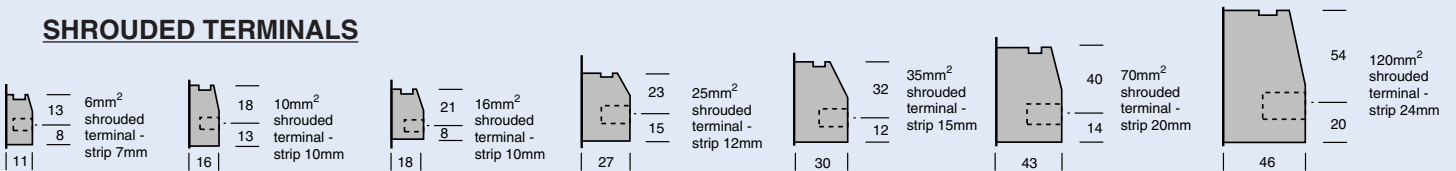


## CASE N

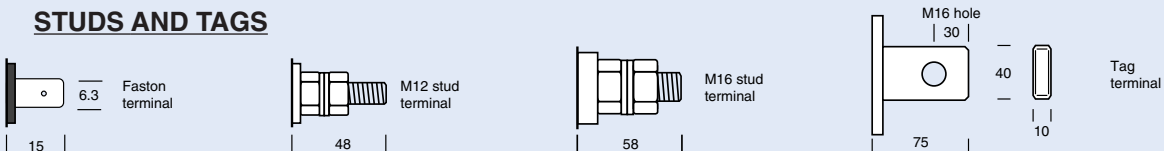


# TERMINAL TYPES

## SHROUDED TERMINALS



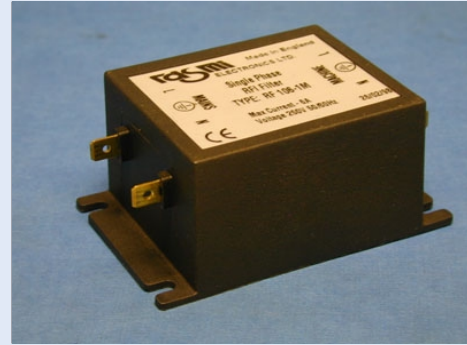
## STUDS AND TAGS



## "RF 1XX - 1M" Single Phase - 1 Stage - Moulded Case Range

General purpose, single phase, single stage RFI filters.  
Designed for effective performance and compact size.

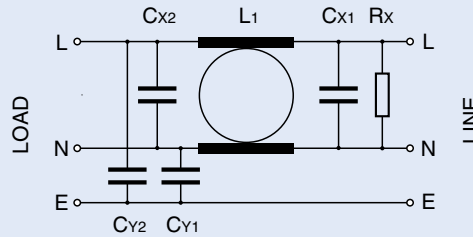
Moulded box type case with mounting via base fixing lugs.  
Termination by 0.25" fast - on terminals.



FILTER PART NO.	RATING @ 40°C	CASE STYLE	LINE TERMINALS	EARTH LEAKAGE	POWER LOSS (W)	WEIGHT (kg)	ΣL (mH)	ΣCx (μF)	ΣCy (μF)	Rx (MΩ)
RF 101 - 1M	1A @ 250Vac	M1	Faston	0.4mA	0.6	0.13	30	1.0	0.01	0.47
RF 103 - 1M	3A @ 250Vac	M1	Faston	0.4mA	2.0	0.14	20	1.0	0.01	0.47
RF 106 - 1M	6A @ 250Vac	M1	Faston	0.4mA	3.9	0.17	15	1.0	0.01	0.47
RF 110 - 1M	10A @ 250Vac	M1	Faston	0.4mA	4.2	0.20	5	1.0	0.01	0.47

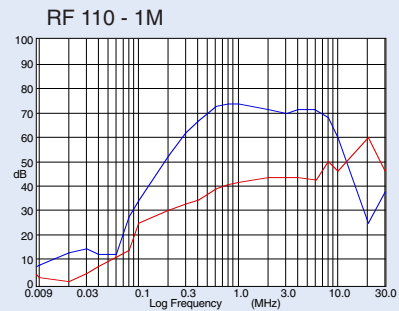
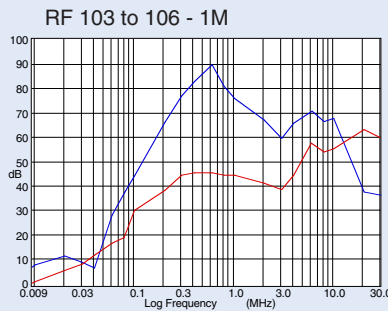
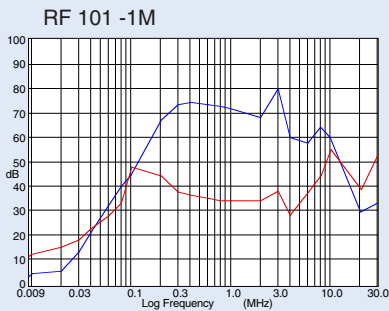
Insulation test voltage: Phase to Earth = 2.25kV DC    Phase to Neutral = 1.1kV DC

### Circuit Schematic

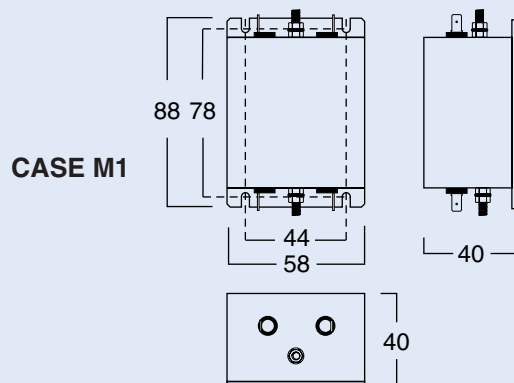


### Insertion Loss

As per CISPR 17:- 50Ω/50Ω symmetrical 50Ω/50Ω asymmetrical



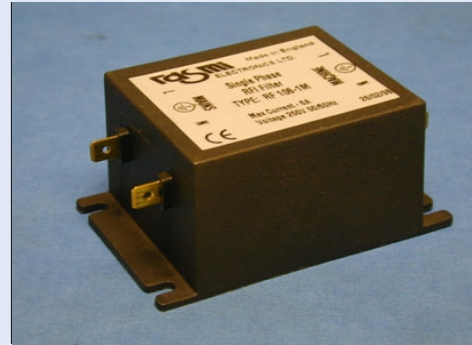
### CASE DIMENSIONS



## "RF 1XX - 2M" Single Phase - 2 Stage - Moulded Case Range

General purpose, single phase, two stage RFI filters.  
Designed for effective performance and compact size.

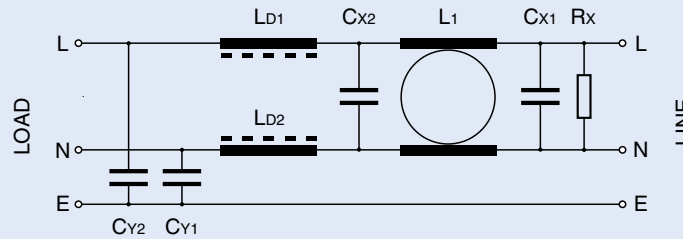
Moulded box type case with mounting via base fixing lugs.  
Termination by 0.25" fast - on terminals.



FILTER PART NO.	RATING @ 40°C	CASE STYLE	LINE TERMINALS	EARTH LEAKAGE	POWER LOSS (W)	WEIGHT (kg)	ΣL (mH)	ΣCx (μF)	ΣCy (μF)	Rx (MΩ)
RF 101 - 2M	1A @ 250Vac	M1	Faston	0.4mA	1.4	0.17	22	1.0	0.01	0.47
RF 103 - 2M	3A @ 250Vac	M1	Faston	0.4mA	5.4	0.18	15	1.0	0.01	0.47
RF 106 - 2M	6A @ 250Vac	M1	Faston	0.4mA	6.1	0.21	8	1.0	0.01	0.47
RF 110 - 2M	10A @ 250Vac	M1	Faston	0.4mA	7.8	0.25	4	1.0	0.01	0.47

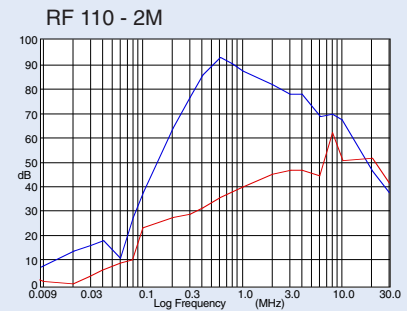
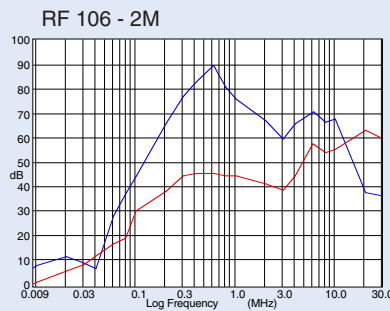
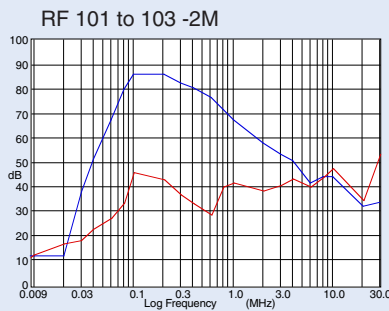
Insulation test voltage: Phase to Earth = 2.25kV DC Phase to Neutral = 1.1kV DC

### Circuit Schematic



### Insertion Loss

As per CISPR 17:- 50Ω/50Ω symmetrical 50Ω/50Ω asymmetrical



Rasmi Electronics Ltd. reserves the right to alter specifications without notice.



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Rev 2.2