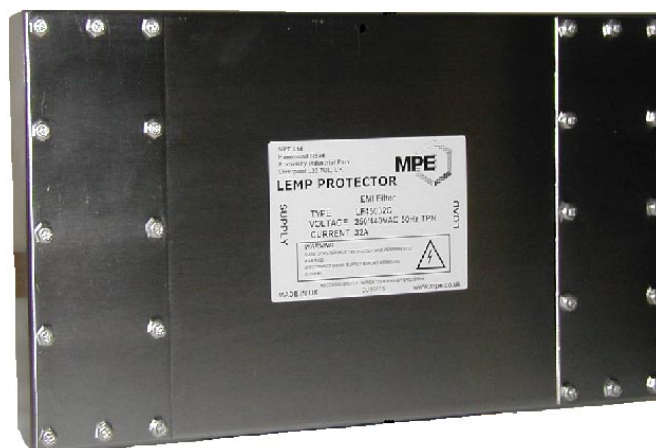


# EMP EMI FILTERS

## DEFENCE & PROFESSIONAL APPLICATIONS



### TPN INTERMEDIATE 60dB@150kHz PERFORMANCE RANGE

**LEMP/NEMP LINE FILTERS SERVICING AC PENETRATIONS OF  
ELECTROMAGNETIC BARRIERS OF SHELTERS & SYSTEMS**



**MPE Limited**  
Hammond Road  
Knowsley Industrial Park  
Liverpool L33 7UL  
UK

## DESCRIPTION

A range of high performance full frequency spectrum EMI filters designed for application within a zoned electrical system fully protected against the effects of EMP. Filters will protect susceptible equipments from external EMI/EMP threat and will attenuate equipment generated emissions coupling back into the electrical supply.

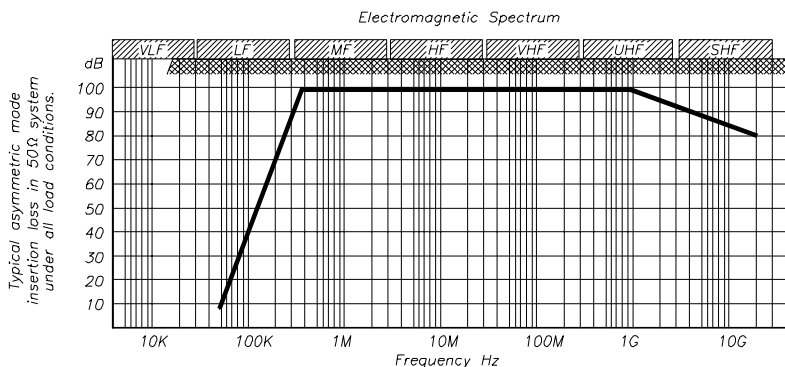
The product integrates within a single cabinet a bi-directional low pass pi configuration EMI filter with high speed high energy overvoltage surge arrestors. The filter utilises high voltage ultra high speed feedthrough self healing capacitors for full spectrum effectiveness and a magnetic element effective under all loading conditions. The system will tolerate multiple events and is self restoring post system EMP illumination.

The cabinet is rugged and corrosion resistant designed for chassis or bulkhead mounting and incorporates terminal screw connections for integration to the field electrical cable distribution system.

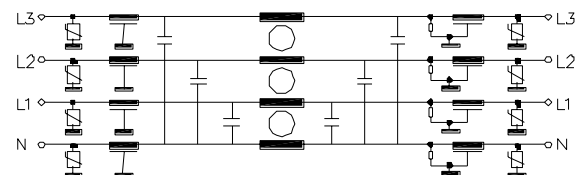
## RATINGS AND CHARACTERISTICS

Rated voltage	440/250VAC 50/60Hz
Category temperature range	-55°C to +85 °C
Maximum temperature rise on full load	20 °C
Storage temperature	-55°C to +100 °C
Discharge resistance [2-parallel MIL-HDBK-454]	RC ≤ 10s (MΩ.µF) UL60950
Current overload rating	10x rated current 1 second 1.5x rated current 15 minutes
Voltage overload rating	1.1x rated voltage continuously
Proof voltage test	2250VDC line to line and line to earth
Protection index guide	IP64
Flammability - appropriate components	UL 94V-0
MTBF	Typically >0.5 million hours
Material	Utility ferromagnetic stainless steel
Finish	Clean & dressed

## INSERTION LOSS PERFORMANCE



## CIRCUIT



## TRANSIENT SUPPRESSION

Surge arrestors	Metal [zinc] oxide varistors Φ/N-E i/p & o/p
Primary surge ratings	40kA 8/20µs 800J 2ms
Survivability	>100 events 7kA 8/20µs
Transient attenuation	<1.5kVpeak 5kA 8/20µs event

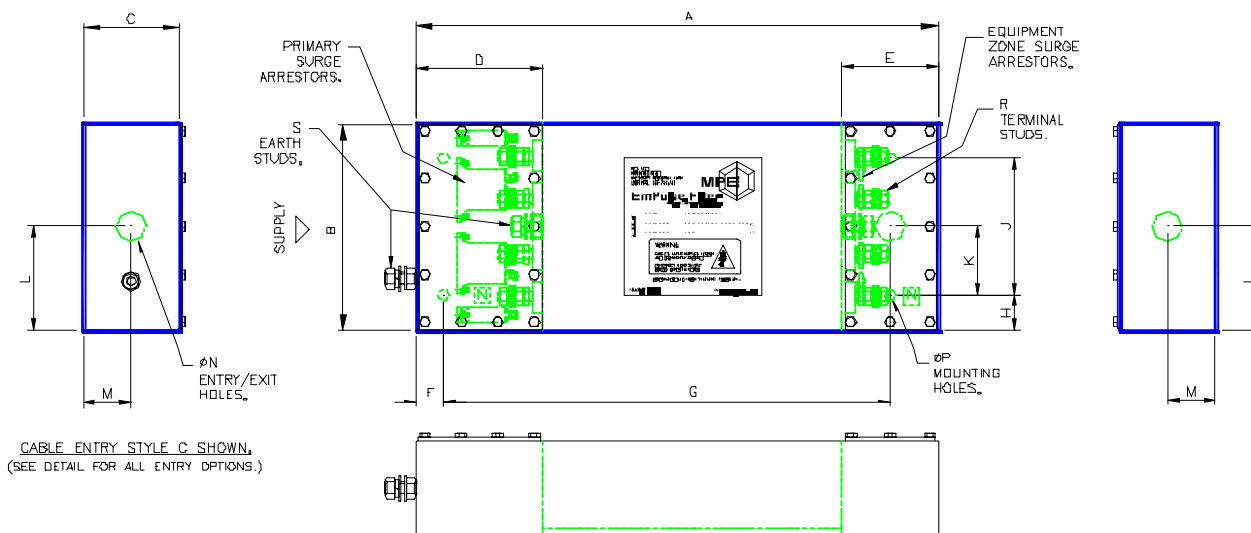
## MARKING

Black epoxy ink on vinyl label English characters UL60950

## RANGE

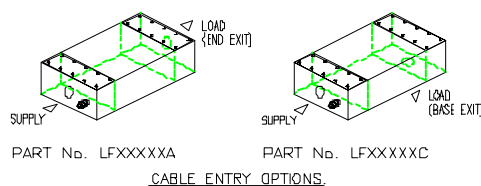
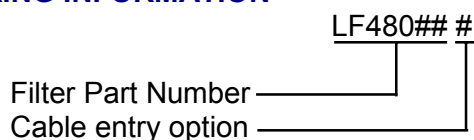
Line Current Rating @50°C	Part Number [excluding conduit suffix]	Voltage Drop [at DC rated current]	Power Loss [heat dissipation]	Leakage @250VAC 50Hz
32Amp	LF48032	50mV	5W	100mA
63Amp	LF48063	30mV	10W	150mA
100Amp	LF48100	20mV	15W	200mA
160Amp	LF48160	10mV	20W	300mA

## DIMENSIONS AND MECHANICAL DETAILS



Part Number	Dimensions mm																Kg
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	
LF48032	400	200	70	130	70	20	350	25	150	75	100	35	25	9	M5	M6	5
LF48063	450	225	80	140	80	25	390	25	175	87	112	40	32	9	M6	M8	10
LF48100	500	250	90	160	100	30	430	25	200	100	125	45	32	11	M8	M10	15
LF48160	600	300	100	180	120	40	515	25	250	125	150	50	40	11	M10	M12	20

## ORDERING INFORMATION



## INSTALLATION GUIDELINES

EMP filters are designed for mounting on a metal bulkhead or chassis. The mounting surface should be clean and unpainted to offer a low impedance path from the filter to the system earth. Poor earth bonding will limit the realisable performance of the filter and could compromise safety. Conductive paint finishes should be avoided as they do not usually provide adequate conductivity.

Two spanners should be used when making electrical connections to the terminals, and maximum tightening torque figures recommended should be observed.

## CONSTRUCTION AND RELIABILITY

MPE have designed and manufactured feedthrough capacitors and filters for more than 40 years, and plastic film feedthrough capacitors for more than 25 years. MPE are market leaders in the design of feedthrough capacitors and filters, and the improvements in materials and assembly techniques, which have evolved over the years, have been incorporated into these new ranges of feedthrough filters.

The designs covered by this pamphlet all utilise self-healing metallised plastic film capacitor technology, and incorporate a solderless capacitor assembly technique to avoid heat damage to the plastic dielectric material, which would reduce its life and reliability.

## SAFETY

Relevant safety standards have been adhered to in the design and manufacture of these filters. However, all capacitors will store charge immediately after power has been removed, and must be treated with caution as this can be lethal when the voltage and charge are high. The filters contained within this pamphlet contain internal discharge resistors to automatically and reliably bleed the capacitor residual voltage to a safe level when power has been disconnected. Where necessary, the terminals should be enclosed by the user to prevent any danger of electric shock or accidental shorting. In all cases circuits should always be shorted to earth prior to touching 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. In particular, safety standards IEC950 and UL60950, which most electrical equipment needs to comply with, contain a number of specific requirements for capacitors, which may be applicable.

## 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 feedthrough components 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 detailing the benefits of feedthrough capacitors over traditional capacitors, please contact the factory.