

Medical RF Filters



ETS-Lindgren's Medical RF Filters enable electrical power, lighting and data signals to be brought into the MRI room, through the RF shield. All RF filters are typically located in one area, usually near the penetration panel of the MRI equipment. Below are the most common medical RF filters used, however ETS-Lindgren can provide virtually any filter you may need. UL, ULC and CE filters are also available, including low current leakage filters.

Facility filters allow specified frequencies to pass while suppressing or attenuating other frequencies. The filters listed as ELUL, EQ and LMF are our most common models utilized in medical applications. There are many other versions of RF filters also available for a wide variety of applications. Our complete line of RF filters incorporates a wide array of choices which provide effective EMI/RFI shielding to meet or exceed industry standards.

Key Features

- Filter Models to Match Requirements for:
 - Power and Lighting
 - Low Leakage
- 100dB Insertion Loss from 150 kHz
- Voltage Drop Less than 1% of Applied Voltage
- Compliant with:
 - Low Voltage Directive 2006/95/EC
 - MIL-STD-220C
- UL 1283 Listed, latest Edition

Product Features

Versatile Smaller Format

The E-PF205A-30 is a versatile filter that is utilized for standard lighting, switching and power circuits. This filter offers the advantage of an approximately 50% reduction in required surface area and weight. This means the use of more circuits with substantially less space and weight than standard filters offering the same features. This filter has a 0 - 30 amp rating and operates at 250 VAC/VDC. It is c-UL rated and CE marked. The EQ series are used for conventional thermostats, nurse calls, fire alarms, smoke detectors or any low leakage application requiring measurement of small variances in voltage to perform an application. This series of filters has an operating range of 1 to 10 amps and 24 VAC/VDC. It is also c-UL rated and CE marked. The ELUL filters are utilized for standard lighting, switching and power circuits. They are able to run at higher voltage requirements with a 0 - 30 amp range and operating up to 277 VAC and 480 VDC. It is c-UL rated and CE marked.

Applications

ELUL, LMF and EQ filters are utilized to allow electrical services within a Magnetic Resonance Imaging suite. All applications that require a conductor within the room interface with a filter. The most common services are lighting, power, smoke detectors and fire alarms.

Specifications

Physical Specifications

Model	ELUL-2030 (Power, Light)	EQ-2001-NR (Smoke, Fire, Thermo.)	EQ-2010-1C (ERDU, EPO)	LMF-4112 (PF205A-30)
Part Number	E-ELUL-2030	E-EQ-2001-NR	E-EQ-2010-1C	E-LMF-4112 (E-PF205A-30)
Number of Lines	2	2	2	2
Weight	6.8 kg (15.0 lb)	2.7 kg (6.0 lb)	2.7 kg (6.0 lb)	2.7 kg (6.0 lb)
Dimension A	53.98 cm (21.25 in)	38.74 cm (15.25 in)	38.74 cm (15.25 in)	38.74 cm (15.25 in)
Dimension B	52.71 cm (20.75 in)	37.47 cm (14.75 in)	37.47 cm (14.75 in)	37.47 cm (14.75 in)
Dimension C	50.8 cm (20.0 in)	35.56 cm (14.0 in)	35.56 cm (14.0 in)	35.56 cm (14.0 in)
Dimension D	12.7 cm (5.0 in)	7.62 cm (3.0 in).	7.62 cm (3.0 in)	7.62 cm (3.0 in)
Dimension E	7.62 cm (3.0 in)	5.08 cm (2.0 in)	5.08 cm (2.0 in)	5.08 cm (2.0 in)
Dimension F	3.96 cm (1.56 in)	3.81 cm (1.5 in)	3.81 cm (1.5 in)	3.81 cm (1.5 in)
Dimension G	7.62 cm (3.0 in)	5.08 cm (2.0 in)	5.08 cm (2.0 in)	5.08 cm (2.0 in)

Electrical Specifications

Model	ELUL-2030 (Power, Light)	EQ-2001-NR (Smoke, Fire, Thermo.)	EQ-2010-1C (ERDU, EPO)	LMF-4112 (PF205A-30)
Part Number	E-ELUL-2030	E-EQ-2001-NR	E-EQ-2010-1C	E-LMF-4112 (E-PF205A-30)
Rated Current (Amps)	0 to 30	0 to 1.0	0 to 10	0 to 30
Max. Leakage Current @220 V, 50 Hz	700 mA	3 mA	3 mA	N/A
Max. Leakage Current @120 V, 60 Hz	450 mA	1.5 mA	1.5 mA	N/A
Rated Voltage	0-277/480 VAC/VDC	0-30/50 VAC/VDC	0-250/250 VAC/VDC	0-250/250 VAC/VDC
Insertion Loss	100 dB min. from 150 kHz to 40 GHz per MIL-STD-220.	100 dB min. from 150 kHz to 40 GHz per MIL-STD-220.	100 dB min. from 150 kHz to 40 GHz per MIL-STD-220.	100 dB min from 30 MHz - 40 GHz per MIL-STD-220
Voltage Drop	Not to exceed 1% of applied voltage at Unity Power Factor.	Not to exceed 1% of applied voltage at Unity Power Factor.	Not to exceed 1% of applied voltage at Unity Power Factor.	Not to exceed 1% of applied voltage at Unity Power Factor.
Safety	Discharge resistors provided per UL-1283.	Discharge resistors provided per UL-1283.	Discharge resistors provided per UL-1283.	Discharge resistors provided per UL-1283.
Passband Impedance	N/A	N/A	N/A	N/A

Product Configuration

- Feedthrough Penetration Pipe for Electrical Leads Functions as a Frequency Waveguide Cut-off
- Single Phase, Two Line Filters
- Seam Welded Case with Removable RF Gasketed Lid, Tin Coated for Long Wear