

ElectroLoss Filterline

Lightweight, Ruggedized Filterline Wire and Cable

Product Facts

- Suppresses EMI above 100 MHz
- Light weight, small size
- SPEC 55 insulation
- 600 volt
- -65°C up to 200°C
[-85°F to 392°F]



Applications

Today's performance needs for military and commercial electronic systems require increasingly sophisticated equipment and greater use of composite structures and enclosures. As electronics become more sensitive, the EMI protection level for electrical equipment is increasing. The Raychem brand of ElectroLoss FilterLine wire and cable provide a high degree of EMI protection while functioning as conventional electrical wiring.

ElectroLoss FilterLine products include high-performance wire and cable, which when used as specified, suppress conducted and radiated EMI above 100 MHz.

A reliable alternative to conventional discrete filters and filter-pin connectors, ElectroLoss FilterLine cables are flexible, lightweight, and compatible with high-density connectors.

The ElectroLoss FilterLine wire and cable meets the performance requirements of SAE AS85485 originally a military specification developed to provide EMI protection for military electrical interconnects.

The absorptive layer in ElectroLoss FilterLine cable is constructed of a ferrite-loaded high-temperature polymer, which provides high-frequency EMI absorptive characteristics. Achieving maximum attenuation requires concentrating the electromagnetic fields in the absorptive layer —

either with a metallic shield on each wire or by an overall metallic shield protecting a bundle of individual component wires.

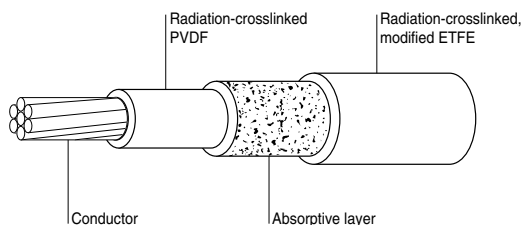
Radiation-crosslinked, modified conductive EFTE jackets are used over shielded filter line cables to eliminate pathways between adjacent cable shields.

Application-driven alternative ElectroLoss FilterLine constructions built to the same rigorous standards demanded of the military requirements are also available. These alternatives offer significant weight savings through the use of flat braids, improved laser mark contrast, and a broader choice of conductors.

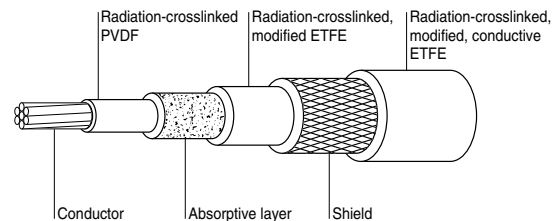
Available in:

Americas	■
Europe	■
Asia Pacific	■

55FA0511



55FB1511



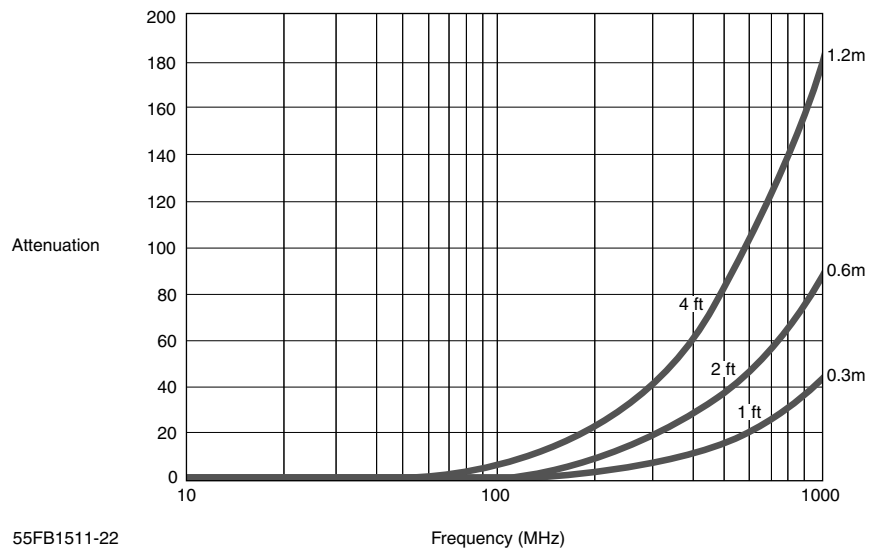
ElectroLoss Filterline (Continued)

Performance

Effective against conducted EMI ElectroLoss FilterLine wire and cable systems attenuate high-frequency EMI and allow low frequency signals to pass with minimum loss. When properly installed and used, filter line wire and cables function as low-pass electrical filters, attenuating both

conducted and radiated EMI above 100MHz. The performance of ElectroLoss FilterLine product is best demonstrated by measuring the attenuation (insertion loss) of a length of cable over a broad range of frequencies. Graph 1 depicts typical insertion loss characteristics.

Graph 1 - Typical insertion loss



Temperature rating	-65°C up to 200°C [-85°F to 392°F]
Voltage rating	600V r.m.s

ElectroLoss Filterline (Continued)

Lightweight, Ruggedized Filterline Wire and Cable

Single Conductor Wire Specifications 150°C Rated Wire

AWG Size	Conductor Stranding (Number x AWG)	Maximum Outside Diameter mm (in)	Maximum Weight Kg/Km (lb/1000 ft)	MIL-SPEC Part Number	TE Part Number
24	19 x 36 silver coated high strength copper alloy	1.19 [.047]	4.46 [3.0]	M85485/10-24A	55FA0514-24-*
22	19 x 34 tin coated copper	1.37 [.054]	5.95 [4.0]	M85485/9-22A	55FA0511-22-*
20	19 x 32 tin coated copper	1.57 [.062]	8.63 [5.8]	M85485/9-20A	55FA0511-20-*
18	19 x 30 tin coated copper	1.85 [.073]	12.95 [8.7]	M85485/9-18A	55FA0511-18-*
16	19 x 29 tin coated copper	2.08 [.082]	16.67 [11.2]	M85485/9-16A	55FA0511-16-*
14	19 x 27 tin coated copper	2.51 [.099]	23.96 [16.1]	M85485/9-14A	55FA0511-14-*
12	37 x 28 tin coated copper	2.95 [.116]	35.71 [24.0]	M85485/9-12A	55FA0511-12-*
10	37 x 26 tin coated copper	3.58 [.141]	55.06 [37.0]	M85485/9-10A	55FA0511-10-*

* The color of component wire shall be light violet designated by 7L. The designated colors for components in finished cable shall be light violet for component 1 and light violet with stripe designators for remaining component wires as follows:

Component wire	1	2	3	4	5
Color designator	7L	7L6	7L3	7L5	7L2

Low Fluoride Specifications 200°C Rated Wire

AWG Size	Conductor Stranding (Number x AWG)	Maximum Outside Diameter mm (in)	Maximum Weight Kg/Km (lb/1000 ft)	TE Part Number
24	19 x 36 silver coated high strength copper alloy	1.19 [.047]	4.46 [3.0]	55FAF7128-24-*
22	19 x 34 silver coated copper	1.37 [.054]	5.95 [4.0]	55FAF0512-22-*
20	19 x 32 silver coated copper	1.57 [.062]	8.63 [5.8]	55FAF0512-20-*
18	19 x 30 silver coated copper	1.85 [.073]	12.95 [8.7]	55FAF0512-18-*
16	19 x 29 silver coated copper	2.08 [.082]	16.67 [11.2]	55FAF0512-16-*
14	19 x 27 silver coated copper	2.51 [.099]	23.96 [16.1]	55FAF0512-14-*
12	37 x 28 silver coated copper	2.95 [.116]	35.71 [24.0]	55FAF0512-12-*
10	37 x 26 silver coated copper	3.58 [.141]	55.06 [37.0]	55FAF0512-10-*

The color of the component wire shall be light yellow designated by 4L. The designated colors for components shall be light yellow for component 1 and light yellow with stripe designators for remaining component wires as follows:

Component Wire	1	2	3	4	5
Color Designation	4L	4L6	4L3	4L5	4L2

ElectroLoss Filterline (Continued)

Lightweight, Ruggedized Filterline Wire and Cable

(Continued)

Unshielded, Unjacketed 2-5 Conductor Cable Specifications 150°C Rated Wire

AWG Size	Number of Conductor	Maximum Outside Diameter mm [in.]	Maximum Weight Kg/Km (lb/1000 ft)	MIL-SPEC Part Number	TE Part Number
24	2	2.39 [.094]	9.08 [6.1]	M85485/11-24M2A	55FA0524-24-*
22	2	2.74 [.108]	12.20 [8.2]	M85485/11-22T2A	55FA0521-22-*
20	2	3.15 [.124]	17.56 [11.8]	M85485/11-20T2A	55FA0521-20-*
18	2	3.71 [.146]	26.34 [17.7]	M85485/11-18T2A	55FA0521-18-*
16	2	4.17 [.164]	33.93 [22.8]	M85485/11-16T2A	55FA0521-16-*
14	2	5.03 [.198]	48.81 [32.8]	M85485/11-14T2A	55FA0521-14-*
24	3	2.59 [.102]	13.69 [9.2]	M85485/11-24M3A	55FA0534-24-*
22	3	2.97 [.117]	18.15 [12.2]	M85485/11-22T3A	55FA0531-22-*
20	3	3.40 [.134]	26.34 [17.7]	M85485/11-20T3A	55FA0531-20-*
18	3	4.01 [.158]	39.58 [26.6]	M85485/11-18T3A	55FA0531-18-*
16	3	4.50 [.177]	51.03 [34.3]	M85485/11-16T3A	55FA0531-16-*
14	3	5.44 [.214]	73.36 [49.3]	M85485/11-14T3A	55FA0531-14-*
24	4	3.28 [.129]	18.15 [12.2]	M85485/11-24M4A	55FA0544-24-*
22	4	3.78 [.149]	24.25 [16.3]	M85485/11-22T4A	55FA0541-22-*
20	4	4.34 [.171]	35.27 [23.7]	M85485/11-20T4A	55FA0541-20-*
18	4	5.11 [.201]	52.82 [35.5]	M85485/11-18T4A	55FA0541-18-*
16	4	5.74 [.226]	68.00 [45.7]	M85485/11-16T4A	55FA0541-16-*
14	4	6.91 [.272]	97.76 [65.7]	M85485/11-14T4A	55FA0541-14-*
24	5	3.58 [.141]	22.77 [15.3]	M85485/11-24M5A	55FA0554-24-*
22	5	4.11 [.162]	30.36 [20.4]	M85485/11-22T5A	55FA0551-22-*
20	5	4.72 [.186]	44.04 [29.6]	M85485/11-20T5A	55FA0551-20-*
18	5	5.56 [.219]	66.07 [44.4]	M85485/11-18T5A	55FA0551-18-*
16	5	6.25 [.246]	84.96 [57.1]	M85485/11-16T5A	55FA0551-16-*
14	5	7.54 [.297]	122.16 [82.1]	M85485/11-14T5A	55FA0551-14-*

* The color of component wire shall be light violet designated by 7L.
The designated colors for components in finished cable shall be light violet
for component 1 and light violet with stripe designators for remaining
component wires as follows:

Component wire	1	2	3	4	5
Color designator	7L	7L6	7L3	7L5	7L2

ElectroLoss Filterline (Continued)

Low Fluoride Specifications 200°C Rated Wire

AWG Size	Number of Conductor	Maximum Outside Diameter mm [in.]	Maximum Weight Kg/Km (lb/1000 ft)	TE Part Number
24	2	2.39 [.094]	9.08 [6.1]	55FAF7134-24-*
22	2	2.74 [.108]	12.20 [8.2]	55FAF0522-22-*
20	2	3.15 [.124]	17.56 [11.8]	55FAF0522-20-*
18	2	3.71 [.146]	26.34 [17.7]	55FAF0522-18-*
16	2	4.17 [.164]	33.93 [22.8]	55FAF0522-16-*
14	2	5.03 [.198]	48.81 [32.8]	55FAF0522-14-*
24	3	2.59 [.102]	13.69 [9.2]	55FAF7135-24-*
22	3	2.97 [.117]	18.15 [12.2]	55FAF0532-22-*
20	3	3.40 [.134]	26.34 [17.7]	55FAF0532-20-*
18	3	4.01 [.158]	39.58 [26.6]	55FAF0532-18-*
16	3	4.50 [.177]	51.03 [34.3]	55FAF0532-16-*
14	3	5.44 [.214]	73.36 [49.3]	55FAF0532-14-*
24	4	3.28 [.129]	18.15 [12.2]	55FAF7136-24-*
22	4	3.78 [.149]	24.25 [16.3]	55FAF0542-22-*
20	4	4.34 [.171]	35.27 [23.7]	55FAF0542-20-*
18	4	5.11 [.201]	52.82 [35.5]	55FAF0542-18-*
16	4	5.74 [.226]	68.00 [45.7]	55FAF0542-16-*
14	4	6.91 [.272]	97.76 [65.7]	55FAF0542-14-*
24	5	3.58 [.141]	22.77 [15.3]	55FAF7137-24-*
22	5	4.11 [.162]	30.36 [20.4]	55FAF0552-22-*
20	5	4.72 [.186]	44.04 [29.6]	55FAF0552-20-*
18	5	5.56 [.219]	66.07 [44.4]	55FAF0552-18-*
16	5	6.25 [.246]	84.96 [57.1]	55FAF0552-16-*
14	5	7.54 [.297]	122.16 [82.1]	55FAF0552-14-*

The color of the component wire shall be light yellow designated by 4L. The designated colors for components shall be light yellow for component 1 and light yellow with stripe designators for remaining component wires as follows:

Component Wire	1	2	3	4	5
Color Designation	4L	4L6	4L3	4L5	4L2

ElectroLoss Filterline (Continued)

Lightweight, Ruggedized Filterline Wire and Cable

(Continued)

Shielded, Jacketed 1-5 Conductor Cable Specifications

ElectroLoss Filterline Wire and Cable Light Weight Ruggedized Constructions —

150°C

AWG Size	Number of Conductors	Shield Size AWG Tin Coated Copper	Maximum Outside Diameter mm (in)	Maximum Weight Kg/Km (lb/1000 ft)	MIL-SPEC Part Number	TE Part Number
24	1	38	2.13 [.084]	10.86 [7.3]	M85485/12-24U1A	55FB1514-24-*
22	1	38	2.31 [.091]	13.09 [8.8]	M85485/12-22T1A	55FB1511-22-*
20	1	38	2.51 [.099]	16.67 [11.2]	M85485/12-20T1A	55FB1511-20-*
18	1	38	2.79 [.110]	22.17 [14.9]	M85485/12-18T1A	55FB1511-18-*
16	1	38	3.02 [.119]	26.78 [18.0]	M85485/12-16T1A	55FB1511-16-*
14	1	38	3.45 [.136]	35.86 [24.1]	M85485/12-14T1A	55FB1511-14-*
12	1	38	3.89 [.153]	49.40 [33.2]	M85485/12-12T1A	55FB1511-12-*
10	1	38	4.55 [.179]	71.57 [48.1]	M85485/12-10T1A	55FB1511-10-*
24	2	38	3.33 [.131]	19.34 [13.0]	M85485/12-24U2A	55FB1524-24-*
22	2	38	3.68 [.145]	23.81 [16.0]	M85485/12-22T2A	55FB1521-22-*
20	2	38	4.09 [.161]	30.50 [20.5]	M85485/12-20T2A	55FB1521-20-*
18	2	38	4.65 [.183]	41.37 [27.8]	M85485/12-18T2A	55FB1521-18-*
16	2	38	5.11 [.201]	50.59 [34.0]	M85485/12-16T2A	55FB1521-16-*
14	2	38	6.02 [.237]	69.49 [46.7]	M85485/12-14T2A	55FB1521-14-*
24	3	38	3.53 [.139]	25.30 [17.0]	M85485/12-24U3A	55FB1534-24-*
22	3	38	3.91 [.154]	31.10 [20.9]	M85485/12-22T3A	55FB1531-22-*
20	3	38	4.34 [.171]	41.07 [27.6]	M85485/12-20T3A	55FB1531-20-*
18	3	38	4.95 [.195]	56.54 [38.0]	M85485/12-18T3A	55FB1531-18-*
16	3	38	5.44 [.214]	69.94 [47.0]	M85485/12-16T3A	55FB1531-16-*
14	3	38	6.43 [.253]	96.87 [65.1]	M85485/12-14T3A	55FB1531-14-*
24	4	38	4.19 [.165]	31.69 [21.3]	M85485/12-24U4A	55FB1544-24-*
22	4	38	4.67 [.184]	39.58 [26.6]	M85485/12-22T4A	55FB1541-22-*
20	4	38	5.23 [.206]	52.68 [35.4]	M85485/12-20T4A	55FB1541-20-*
18	4	38	5.99 [.236]	72.91 [49.0]	M85485/12-18T4A	55FB1541-18-*
16	4	38	6.68 [.263]	91.36 [61.4]	M85485/12-16T4A	55FB1541-16-*
14	4	38	7.85 [.309]	125.59 [84.4]	M85485/12-14T4A	55FB1541-14-*
24	5	38	4.52 [.178]	37.80 [25.4]	M85485/12-24U5A	55FB1554-24-*
22	5	38	5.05 [.199]	47.32 [31.8]	M85485/12-22T5A	55FB1551-22-*
20	5	38	5.66 [.223]	63.39 [42.6]	M85485/12-20T5A	55FB1551-20-*
18	5	38	6.55 [.258]	89.43 [60.1]	M85485/12-18T5A	55FB1551-18-*
16	5	38	7.24 [.285]	111.00 [74.6]	M85485/12-16T5A	55FB1551-16-*
14	5	38	8.53 [.336]	153.26 [103.0]	M85485/12-14T5A	55FB1551-14-*

* The color of component wire shall be light violet designated by 7L.
The designated colors for components in finished cable shall be light violet for component 1 and light violet with stripe designators for remaining component wires as follows:

Component wire	1	2	3	4	5
Color designator	7L	7L6	7L3	7L5	7L2

Fluid Resistance

Fluids	Hydrocarbons
	Fuels and lubricants
	Alcohols
	Cleaning fluids
	Glycols
	Synthetic fuels and lubricants
	Ketones

ElectroLoss Filterline (Continued)

Lightweight, Ruggedized Filterline Wire and Cable (Continued)

Electroloss Filterline Wire and Cable Light Weight Ruggedized Constructions — 200°C (Flat Braid)

AWG Size	Number of Conductors	Shield Size AWG Tin Coated Copper	Maximum Outside Diameter mm (in)	Maximum Weight Kg/Km (lb/1000 ft)	TE Part Number
24	1	38	2.13 [.084]	10.86 [7.3]	55FBF7129-*
22	1	38	2.31 [.091]	13.09 [8.8]	55FBF2512-22-*
20	1	38	2.51 [.099]	16.67 [11.2]	55FBF2512-20-*
18	1	38	2.79 [.110]	22.17 [14.9]	55FBF2512-18-*
16	1	38	3.02 [.119]	26.78 [18.0]	55FBF2512-16-*
14	1	38	3.45 [.136]	35.86 [24.1]	55FBF2512-14-*
12	1	38	3.89 [.153]	49.40 [33.2]	55FBF2512-12-*
10	1	38	4.55 [.179]	71.57 [48.1]	55FBF2512-10-*
24	2	38	3.33 [.131]	19.34 [13.0]	55FBF7130-*
22	2	38	3.68 [.145]	23.81 [16.0]	55FBF2522-22-*
20	2	38	4.09 [.161]	30.50 [20.5]	55FBF2522-20-*
18	2	38	4.65 [.183]	41.37 [27.8]	55FBF2522-18-*
16	2	38	5.11 [.201]	50.59 [34.0]	55FBF2522-16-*
14	2	38	6.02 [.237]	69.49 [46.7]	55FBF2522-14-*
24	3	38	3.53 [.139]	25.30 [17.0]	55FBF7131-*
22	3	38	3.91 [.154]	31.10 [20.9]	55FBF2532-22-*
20	3	38	4.34 [.171]	41.07 [27.6]	55FBF2532-20-*
18	3	38	4.95 [.195]	56.54 [38.0]	55FBF2532-18-*
16	3	38	5.44 [.214]	69.94 [47.0]	55FBF2532-16-*
14	3	38	6.43 [.253]	96.87 [65.1]	55FBF2532-14-*
24	4	38	4.19 [.165]	31.69 [21.3]	55FBF7132-*
22	4	38	4.67 [.184]	39.58 [26.6]	55FBF2542-22-*
20	4	38	5.23 [.206]	52.68 [35.4]	55FBF2542-20-*
18	4	38	5.99 [.236]	72.91 [49.0]	55FBF2542-18-*
16	4	38	6.68 [.263]	91.36 [61.4]	55FBF2542-16-*
14	4	38	7.85 [.309]	125.59 [84.4]	55FBF2542-14-*
24	5	38	4.52 [.178]	37.80 [25.4]	55FBF7133-*
22	5	38	5.05 [.199]	47.32 [31.8]	55FBF2552-22-*
20	5	38	5.66 [.223]	63.39 [42.6]	55FBF2552-20-*
18	5	38	6.55 [.258]	89.43 [60.1]	55FBF2552-18-*
16	5	38	7.24 [.285]	111.00 [74.6]	55FBF2552-16-*
14	5	38	8.53 [.336]	153.26 [103.0]	55FBF2552-14-*

The color of the component wire shall be light yellow designated by 4L.
The designated colors for components shall be light yellow for component 1
and light yellow with stripe designators for remaining component wires as
follows:

Component Wire Color Designation	1 4L	2 4L6	3 4L3	4 4L5	5 4L2
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Fluid Resistance

Fluids	Hydrocarbons
	Fuels and lubricants
Fluids	Alcohols
	Cleaning fluids
	Glycols
	Synthetic fuels and lubricants
	Ketones

ElectroLoss Filterline (Continued)

Part Numbering System

