

# Collectively Screened Multipair “LFH” Insulated and Sheathed Cable for Military Vessels

DEF61-12 Part 25 600V 85°C



## Application

Thin-wall, lightweight copper wire braid screened multipair cables for control, communication and instrumentation circuits in HM surface ships and vessels. Incorporates LFH (Limited Fire Hazard) insulation and sheath for reduced levels of smoke and toxic fumes in the event of a fire. May be used in flexing or fixed applications and suitable for use where fuel, lubricating oils, hydraulic fluids and water are present.

## Specifications

- In accordance with DEF61-12 part 25.
- **Conductor:** Stranded Class 2 tinned copper conductors to BS EN 60228.
- **Insulation:** Thin-wall LFH (Limited Fire Hazard) insulation to DEF61-12 part 25.  
N.B. Cores shall meet the requirements of DEF61-12 part 18 for either category 1 equipment wires.
- **Pair Identification:** Single pair - red, blue 3 pair and above - red/black and blue/black marker pairs adjacent in each layer with remaining pairs white/black  
N.B. Where one pair is used as a centre the colour shall be white/black. The cores in each pair shall be number printed, in a contrasting colour, with the pair number.
- **Binder Tape:** p.e.t.p. tape minimum 20% overlap.
- **Braid:** Tinned copper wire braid (minimum filling factor 0.61).
- **Outer Sheath:** Black LFH (Limited Fire Hazard) outer sheath to DEF61-12 part 31. In addition, the outer sheath also displays the following characteristics:  
Minimum oxygen index: 30%.  
Maximum HCL emission @ 800°C: 0.5%.
- Flame retardant to DS 02-641.
- **Voltage Rating:** 600V rms/800V d.c. (between cores, or between cores and ships structure, or between cores and cable screen).
- **Temperature Rating:** 85°C maximum conductor operating temperature.  
N.B. Cables will also retain a degree of flexibility under weatherdeck conditions of -30°C.

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N.S.N. 6145-99-	Anixter Number A10DW-	Nominal Cond Area mm <sup>2</sup>	Nom Cond Stranding #/mm	Number of Pairs	Insulation Thickness mm	Braid Wire Size mm	Minimum O/D mm	Maximum O/D mm	Approx Cable Weight kg/km
<b>DEF61-12 part 25 Table 14</b>									
892-0057	892-0057	0.35	19/0.15	3	0.2	0.12	6.65	8.3	110
892-0058	892-0058	0.35	19/0.15	5	0.2	0.12	7.8	9.6	145
892-0059	892-0059	0.35	19/0.15	7	0.2	0.12	8.35	10.2	170
892-0060	892-0060	0.35	19/0.15	12	0.2	0.12	10.6	12.6	255
892-0061	892-0061	0.35	19/0.15	19	0.2	0.15	12.3	14.6	375
892-0062	892-0062	0.35	19/0.15	27	0.2	0.15	14.55	17.0	490
892-0063	892-0063	0.35	19/0.15	37	0.2	0.15	16.25	18.8	640
<b>DEF61-12 part 25 Table 15</b>									
892-0064	892-0064	1.0	19/0.25	3	0.2	0.12	8.7	10.4	175
892-0065	892-0065	1.0	19/0.25	5	0.2	0.12	10.3	12.3	245
892-0066	892-0066	1.0	19/0.25	7	0.2	0.12	11.1	13.1	300
892-0067	892-0067	1.0	19/0.25	12	0.2	0.12	14.5	16.6	500
892-0068	892-0068	1.0	19/0.25	19	0.2	0.15	16.95	19.1	700
892-0069	892-0069	1.0	19/0.25	27	0.2	0.15	20.2	22.8	980

Minimum Bending Radius: Flexing Applications 10D.  
Fixed Applications 4D.

Where D = overall diameter of the cable.

# Technical Information

for DEF 61-12 Part 25 Cables

Conductor Size mm <sup>2</sup>	0.35	0.6	1.0	1.5	2.5
Nominal Conductor Stranding #/mm	19/0.15	19/0.2	19/0.25	19/0.3	37/0.3
Maximum d.c. Conductor Resistance @ 20°C Ω/km	60.0	33.1	21.1	14.5	7.6
Maximum a.c. Conductor Resistance @ 85°C Ω/km	75.3	41.6	26.5	18.2	9.54
Reactance @ 60Hz Ω/km	0.108	0.101	0.096	0.093	0.091
Nominal Mutual Capacitance:					
Un-screened and Collectively Screened Multicore Cables above 3 core	65	75	85	90	95
Individually Screened Multipair/triple Cable and 2/3 Core Collectively Screened	125	150	170	190	200

## CURRENT RATINGS

Conductor Size mm <sup>2</sup>	Current Rating *A
0.35	6.5
0.60	8.5
1.0	11
1.5	16
2.5	27

\* The ratings quoted are based on 40°C ambient air temperature and assume only one core carrying current. When more than one core carries current the following factors should be applied:

Number of cores loaded	2	3	4	7	14	18	30
Rating factor	0.825	0.73	0.66	0.54	0.39	0.36	0.28

Ambient air temp °C	35	40	45	50	55	60	65	70
Rating factor	1.05	1.0	0.94	0.88	0.82	0.75	0.67	0.58