

Individually and 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:** Each pair will contain one red and one blue core and shall be identified either by a numbered tape over the individual braid screen, or the blue core in each pair shall be numbered, in a contrasting colour, with the pair number.
- **Braid:** Tinned copper wire braid (minimum filling factor 0.61) applied over each individual pair.
- **Binder Tape:** p.e.t.p. tape minimum 20% overlap.
- Tinned copper wire braid screen (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 ²	Nom Cond Stranding #/mm	Number of Pairs	Insulation Thickness mm	Minimum O/D mm	Maximum O/D mm	Approx Cable Weight kg/km
DEF61-12 part 25 Table 18								
892-0076	892-0076	0.35	19/0.15	3	0.2	9.0	11.6	220
892-0077	892-0077	0.35	19/0.15	5	0.2	10.7	13.5	315
892-0078	892-0078	0.35	19/0.15	7	0.2	11.5	14.7	400
892-0079	892-0079	0.35	19/0.15	12	0.2	14.2	18.8	625
892-0080	892-0080	0.35	19/0.15	19	0.2	17.3	22.6	975
892-0081	892-0081	0.35	19/0.15	27	0.2	20.4	26.7	1330

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 ²	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 ²	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