

Halogen-free and/or Mud resistant cables for offshore installations



Construction

- 1** Conductor
Tinned annealed copper wire according to IEC 60228 Class 2 or Class 5
- 2** Insulation
HF EPR as per IEC 60092-360(351), thickness as per IEC 60092-376
- 3** Individual screen
Screened by copper or aluminium backed polyester tape with tinned copper drain wire
- 4** Twisting
Two/Three insulated cores shall be twisted together to form a pair/triad
- 5** Collective screen
Screened by copper or aluminium backed polyester tape with tinned copper drain wire
- 6** Inner covering/Bedding
Halogen free thermoset compound, thickness according to IEC 60092-376
- 7** Braid armour
Tinned copper wire braid (O), Galvanized steel wire braid (C)
- 8** Outer sheath
Halogen free thermoset compound SHF2 or halogen free MUD resistant thermoset compound SHF MUD complying with IEC 60092-360(359) and / or NEK 606.

Marking

e.g. : [S.E.C. 250V RFOU\(I/C\)-M 2 X 2 X 0.75SQMM NEK 606](#)
[IEC 60332-3A MUD SEOUL Year Length](#)

Applicable standards

NEK 606	Design standards
IEC 60092-350	Design standards
IEC 60092-352	Choice and installation of electric cables
IEC 60092-376	Design standards
IEC 60092-360(351, 359)	Insulating and sheathing materials
IEC 60332-1	Flame retardant
IEC 60332-3-22 Cat.A	Flame retardant
IEC 60684-2	Fluorine content test
IEC 60754-1	Halogen gas emission test
IEC 60754-2	pH and conductivity test
IEC 61034-1,2	Smoke emission test
UL 1581	UV resistance (sunlight resistance)
CSA C 22.2 No.0.3	Cold bending test (at -40°C) and cold impact (at -35°C) test at low temperature (option)



-40 to 90°C



Flame retardant
IEC 60332-1 (single)
IEC 60332-3, A (bunched)
Fire retardant IEC 60331



Cold impact (-35°C)
CSA C22.2 No.0.3
Special requirement



Halogen free



Weather
Resistance to severe
weather condition



Chemical attacks
Resistance to
chemicals



Mud
Resistance to
Mud



Oil
Resistance to
Enhanced oil

150/250V

Multi-pair, (HF-)EPR insulated, Individual and Collective screen, Halogen free Inner covering /Bedding, Braid armour, Halogen free SHF2 or SHF MUD Resistance Instrumentation/control cables(Flame retardant) RFOU(I/C), RFCU(I/C)

No. of pairs & cores (n x c)	Conductor		Insulation Thick mm	Inner Covering Overall dia. mm	Outer Diameter Nom. mm	Cable weight Approx. kg/km	Conductor Resistance(20°C) max. Ω/km	Inductance mH/km
	Area mm ²	Overall dia. mm						
	1 x 2	0.75						
2 x 2	0.75	1.11	0.6	11.2	15.3	400	26.3	0.75
3 x 2	0.75	1.11	0.6	11.8	16.0	440	26.3	0.75
4 x 2	0.75	1.11	0.6	12.9	17.0	510	26.3	0.75
7 x 2	0.75	1.11	0.6	15.0	19.6	680	26.3	0.75
8 x 2	0.75	1.11	0.6	16.3	20.8	760	26.3	0.75
10 x 2	0.75	1.11	0.6	18.5	23.1	920	26.3	0.75
12 x 2	0.75	1.11	0.6	19.1	24.0	1,020	26.3	0.75
14 x 2	0.75	1.11	0.6	20.1	24.8	1,110	26.3	0.75
16 x 2	0.75	1.11	0.6	21.3	26.6	1,230	26.3	0.75
19 x 2	0.75	1.11	0.6	22.4	27.6	1,370	26.3	0.75
24 x 2	0.75	1.11	0.6	26.4	31.5	1,740	26.3	0.75
32 x 2	0.75	1.11	0.6	29.0	35.6	2,130	26.3	0.75
37 x 2	0.75	1.11	0.6	30.8	37.3	2,380	26.3	0.75

150/250V

Multi-pair, (HF-)EPR insulated, Individual and Collective screen, Halogen free Inner covering /Bedding, Braid armour, Halogen free SHF2 or SHF MUD Resistance Instrumentation/control cables(Flame retardant) RFOU(I/C), RFCU(I/C)

No. of pairs & cores (n x c)	Conductor		Insulation Thick mm	Inner Covering Overall dia. mm	Outer Diameter Nom. mm	Cable weight Approx. kg/km	Conductor Resistance(20°C) max. Ω/km	Inductance mH/km
	Area mm ²	Overall dia. mm						
	1 x 2	1.00						
2 x 2	1.00	1.29	0.6	11.8	16.7	440	19.3	0.67
3 x 2	1.00	1.29	0.6	12.5	17.5	490	19.3	0.67
4 x 2	1.00	1.29	0.6	13.7	18.6	570	19.3	0.67
7 x 2	1.00	1.29	0.6	15.9	21.8	760	19.3	0.67
8 x 2	1.00	1.29	0.6	17.2	23.2	860	19.3	0.67
10 x 2	1.00	1.29	0.6	19.6	25.8	1,060	19.3	0.67
12 x 2	1.00	1.29	0.6	20.3	26.7	1,160	19.3	0.67
14 x 2	1.00	1.29	0.6	21.4	27.8	1,290	19.3	0.67
16 x 2	1.00	1.29	0.6	22.6	29.6	1,410	19.3	0.67
19 x 2	1.00	1.29	0.6	23.8	31.0	1,600	19.3	0.67
24 x 2	1.00	1.29	0.6	28.1	35.7	2,010	19.3	0.67
32 x 2	1.00	1.29	0.6	30.8	40.1	2,550	19.3	0.67
37 x 2	1.00	1.29	0.6	32.7	42.1	2,990	19.3	0.67

Conductor area. (mm ²)	Capacitance (mF/km)		Inductance (mH/km)	
	Shielded	Unshielded	Shielded	Unshielded
0.75	90	80	0.75	0.75
1.0	100	90	0.67	0.69
1.5	110	100	0.63	0.63
2.5	135	120	0.59	0.60

150/250V

Multi-pair, (HF-)EPR insulated, Individual and Collective screen, Halogen free Inner covering /Bedding, Braid armour, Halogen free SHF2 or SHF MUD Resistance Instrumentation/control cables(Flame retardant) RFOU(I/C), RFCU(I/C)

No. of pairs & cores (n x c)	Conductor		Insulation Thick mm	Inner Covering Overall dia. mm	Outer Diameter Nom. mm	Cable weight Approx. kg/km	Conductor Resistance(20°C) max. Ω/km	Inductance mH/km
	Area mm ²	Overall dia. mm						
	1 x 2	1.5						
2 x 2	1.5	1.59	0.7	13.7	18.4	540	12.9	0.63
3 x 2	1.5	1.59	0.7	14.5	19.4	620	12.9	0.63
4 x 2	1.5	1.59	0.7	16.0	20.7	710	12.9	0.63
7 x 2	1.5	1.59	0.7	18.6	24.3	990	12.9	0.63
8 x 2	1.5	1.59	0.7	20.3	25.9	1,110	12.9	0.63
10 x 2	1.5	1.59	0.7	23.1	28.8	1,370	12.9	0.63
12 x 2	1.5	1.59	0.7	23.9	29.9	1,520	12.9	0.63
14 x 2	1.5	1.59	0.7	25.3	31.1	1,680	12.9	0.63
16 x 2	1.5	1.59	0.7	26.7	34.1	1,860	12.9	0.63
19 x 2	1.5	1.59	0.7	28.7	35.4	2,150	12.9	0.63
24 x 2	1.5	1.59	0.7	33.8	40.0	2,850	12.9	0.63
32 x 2	1.5	1.59	0.7	36.6	45.6	3,430	12.9	0.63
37 x 2	1.5	1.59	0.7	39.3	47.8	3,920	12.9	0.63

150/250V

Multi-pair, (HF-)EPR insulated, Individual and Collective screen, Halogen free Inner covering /Bedding, Braid armour, Halogen free SHF2 or SHF MUD Resistance Instrumentation/control cables(Flame retardant) RFOU(I/C), RFCU(I/C)

No. of pairs & cores (n x c)	Conductor		Insulation Thick mm	Inner Covering Overall dia. mm	Outer Diameter Nom. mm	Cable weight Approx. kg/km	Conductor Resistance(20°C) max. Ω/km	Inductance mH/km
	Area mm ²	Overall dia. mm						
	1 x 2	2.5						
2 x 2	2.5	2.01	0.7	15.1	20.2	640	8.02	0.59
3 x 2	2.5	2.01	0.7	16.1	21.5	740	8.02	0.59
4 x 2	2.5	2.01	0.7	17.7	22.7	880	8.02	0.59
7 x 2	2.5	2.01	0.7	20.7	27.0	1,230	8.02	0.59
8 x 2	2.5	2.01	0.7	22.5	28.8	1,390	8.02	0.59
10 x 2	2.5	2.01	0.7	25.7	32.5	1,730	8.02	0.59
12 x 2	2.5	2.01	0.7	26.6	33.9	1,920	8.02	0.59
14 x 2	2.5	2.01	0.7	28.1	35.3	2,140	8.02	0.59
16 x 2	2.5	2.01	0.7	30.2	37.9	2,420	8.02	0.59
19 x 2	2.5	2.01	0.7	31.9	39.6	2,850	8.02	0.59
24 x 2	2.5	2.01	0.7	37.6	45.1	3,630	8.02	0.59
32 x 2	2.5	2.01	0.7	41.2	51.0	4,530	8.02	0.59
37 x 2	2.5	2.01	0.7	43.8	53.5	5,070	8.02	0.59

Conductor area. (mm ²)	Capacitance (mF/km)		Inductance (mH/km)	
	Shielded	Unshielded	Shielded	Unshielded
0.75	90	80	0.75	0.75
1.0	100	90	0.67	0.69
1.5	110	100	0.63	0.63
2.5	135	120	0.59	0.60

150/250V

Multi-pair, (HF-)EPR insulated, Individual and Collective screen, Halogen free Inner covering /Bedding, Braid armour, Halogen free SHF2 or SHF MUD Resistance Instrumentation/control cables(Flame retardant) RFOU(I/C), RFCU(I/C)

No. of triples & cores (n x c)	Conductor		Insulation Thick mm	Inner Covering Overall dia. mm	Outer Diameter Nom. mm	Cable weight Approx. kg/km	Conductor Resistance(20°C) max. Ω/km	Inductance mH/km
	Area mm ²	Overall dia. mm						
	1 x 3	0.75						
2 x 3	0.75	1.11	0.6	12.4	16.1	460	26.3	0.75
3 x 3	0.75	1.11	0.6	13.2	16.9	520	26.3	0.75
4 x 3	0.75	1.11	0.6	14.4	18.3	620	26.3	0.75
7 x 3	0.75	1.11	0.6	17.2	22.2	850	26.3	0.75
8 x 3	0.75	1.11	0.6	18.7	23.6	960	26.3	0.75
10 x 3	0.75	1.11	0.6	21.8	26.4	1,200	26.3	0.75
12 x 3	0.75	1.11	0.6	22.5	27.8	1,310	26.3	0.75
14 x 3	0.75	1.11	0.6	23.8	28.9	1,460	26.3	0.75
16 x 3	0.75	1.11	0.6	25.1	30.1	1,610	26.3	0.75
19 x 3	0.75	1.11	0.6	26.3	31.3	1,810	26.3	0.75
24 x 3	0.75	1.11	0.6	31.4	33.5	2,450	26.3	0.75
32 x 3	0.75	1.11	0.6	34.0	42.3	2,940	26.3	0.75

150/250V

Multi-pair, (HF-)EPR insulated, Individual and Collective screen, Halogen free Inner covering /Bedding, Braid armour, Halogen free SHF2 or SHF MUD Resistance Instrumentation/control cables(Flame retardant) RFOU(I/C), RFCU(I/C)

No. of triples & cores (n x c)	Conductor		Insulation Thick mm	Inner Covering Overall dia. mm	Outer Diameter Nom. mm	Cable weight Approx. kg/km	Conductor Resistance(20°C) max. Ω/km	Inductance mH/km
	Area mm ²	Overall dia. mm						
	1 x 3	1						
2 x 3	1	1.29	0.6	13.1	17.8	490	19.3	0.67
3 x 3	1	1.29	0.6	13.9	18.7	570	19.3	0.67
4 x 3	1	1.29	0.6	15.3	20.3	660	19.3	0.67
7 x 3	1	1.29	0.6	18.2	24.8	910	19.3	0.67
8 x 3	1	1.29	0.6	19.8	26.4	1,030	19.3	0.67
10 x 3	1	1.29	0.6	23.1	29.6	1,280	19.3	0.67
12 x 3	1	1.29	0.6	23.9	31.2	1,420	19.3	0.67
14 x 3	1	1.29	0.6	25.2	32.9	1,560	19.3	0.67
16 x 3	1	1.29	0.6	26.7	33.9	1,730	19.3	0.67
19 x 3	1	1.29	0.6	27.9	35.2	1,930	19.3	0.67
24 x 3	1	1.29	0.6	33.4	37.8	2,630	19.3	0.67
32 x 3	1	1.29	0.6	36.2	47.8	3,450	19.3	0.67

Conductor area (mm ²)	Capacitance (mF/km)		Inductance (mH/km)	
	Shielded	Unshielded	Shielded	Unshielded
0.75	90	80	0.75	0.75
1.0	100	90	0.67	0.69
1.5	110	100	0.63	0.63
2.5	135	120	0.59	0.60

150/250V

Multi-pair, (HF-)EPR insulated, Individual and Collective screen, Halogen free Inner covering /Bedding, Braid armour, Halogen free SHF2 or SHF MUD Resistance Instrumentation/control cables(Flame retardant) RFOU(I/C), RFCU(I/C)

No. of triples & cores (n x c)	Conductor		Insulation Thick mm	Inner Covering Overall dia. mm	Outer Diameter Nom. mm	Cable weight Approx. kg/km	Conductor Resistance(20°C) max. Ω/km	Inductance mH/km
	Area	Overall dia.						
	mm ²	mm						
1 x 3	1.5	1.59	0.7	9.7	13.3	290	12.9	0.63
2 x 3	1.5	1.59	0.7	14.9	19.9	610	12.9	0.63
3 x 3	1.5	1.59	0.7	16.3	21.0	720	12.9	0.63
4 x 3	1.5	1.59	0.7	17.9	22.9	840	12.9	0.63
7 x 3	1.5	1.59	0.7	21.4	28.1	1,190	12.9	0.63
8 x 3	1.5	1.59	0.7	23.3	30.0	1,330	12.9	0.63
10 x 3	1.5	1.59	0.7	27.4	34.2	1,700	12.9	0.63
12 x 3	1.5	1.59	0.7	28.8	36.4	1,910	12.9	0.63
14 x 3	1.5	1.59	0.7	30.3	37.9	2,110	12.9	0.63
16 x 3	1.5	1.59	0.7	32.1	39.0	2,450	12.9	0.63
19 x 3	1.5	1.59	0.7	33.6	40.2	2,740	12.9	0.63
24 x 3	1.5	1.59	0.7	40.1	43.6	3,560	12.9	0.63
32 x 3	1.5	1.59	0.7	43.4	54.9	4,490	12.9	0.63

150/250V

Multi-pair, (HF-)EPR insulated, Individual and Collective screen, Halogen free Inner covering /Bedding, Braid armour, Halogen free SHF2 or SHF MUD Resistance Instrumentation/control cables(Flame retardant) RFOU(I/C), RFCU(I/C)

No. of triples & cores (n x c)	Conductor		Insulation Thick mm	Inner Covering Overall dia. mm	Outer Diameter Nom. mm	Cable weight Approx. kg/km	Conductor Resistance(20°C) max. Ω/km	Inductance mH/km
	Area	Overall dia.						
	mm ²	mm						
1 x 3	2.5	2.01	0.7	10.8	16.0	370	8.02	0.59
2 x 3	2.5	2.01	0.7	16.9	22.9	760	8.02	0.59
3 x 3	2.5	2.01	0.7	18.0	24.2	880	8.02	0.59
4 x 3	2.5	2.01	0.7	19.8	26.3	1,040	8.02	0.59
7 x 3	2.5	2.01	0.7	23.8	32.3	1,570	8.02	0.59
8 x 3	2.5	2.01	0.7	26.0	34.9	1,800	8.02	0.59
10 x 3	2.5	2.01	0.7	30.9	39.6	2,230	8.02	0.59
12 x 3	2.5	2.01	0.7	32.0	41.6	2,680	8.02	0.59
14 x 3	2.5	2.01	0.7	33.8	43.4	2,940	8.02	0.59
16 x 3	2.5	2.01	0.7	35.8	46.3	3,300	8.02	0.59
19 x 3	2.5	2.01	0.7	37.4	49.8	3,930	8.02	0.59
24 x 3	2.5	2.01	0.7	44.7	54.9	4,650	8.02	0.59
32 x 3	2.5	2.01	0.7	48.5	63.0	6,190	8.02	0.59

Conductor area. (mm ²)	Capacitance (mF/km)		Inductance (mH/km)	
	Shielded	Unshielded	Shielded	Unshielded
0.75	90	80	0.75	0.75
1.0	100	90	0.67	0.69
1.5	110	100	0.63	0.63
2.5	135	120	0.59	0.60