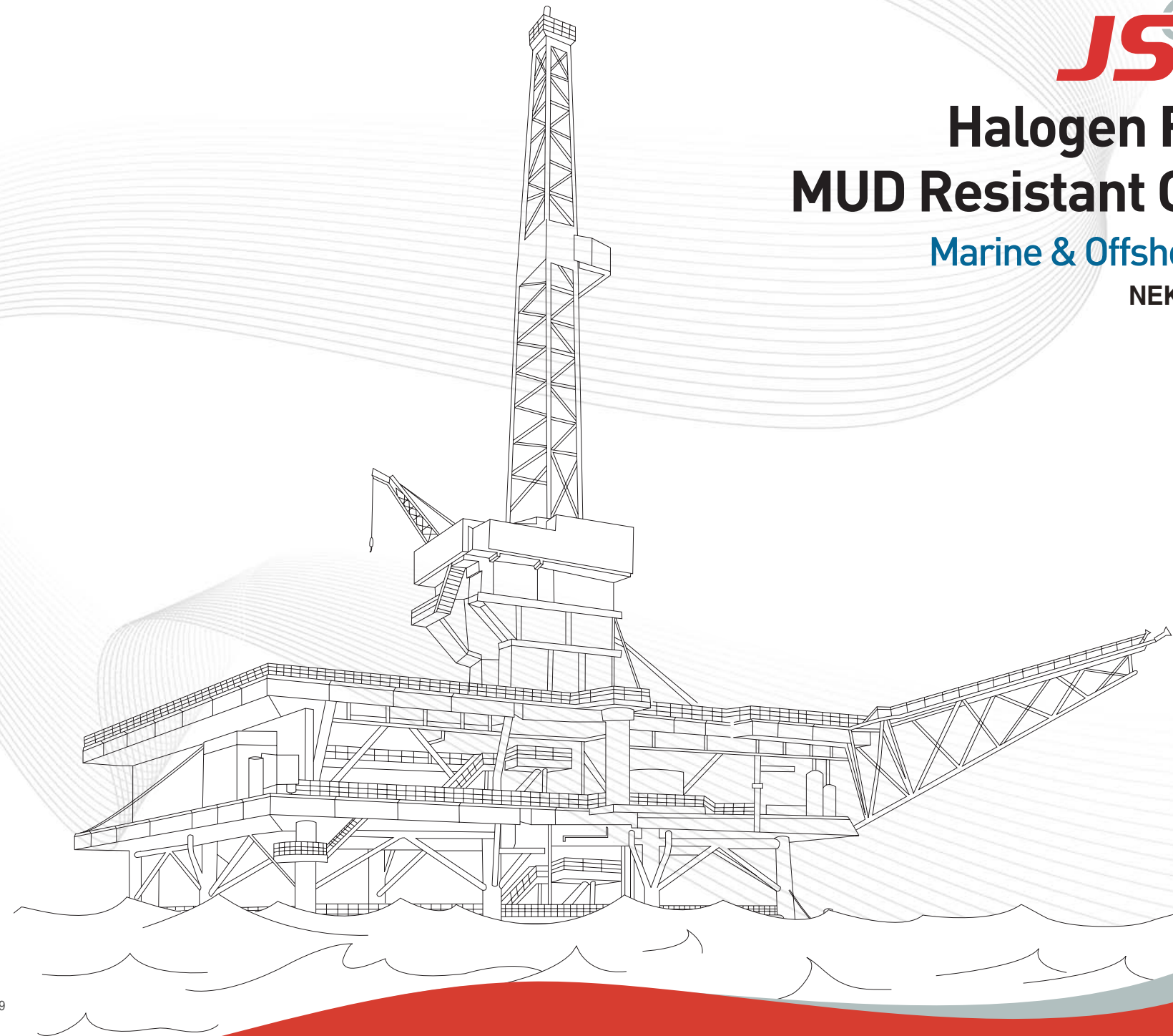


JS
Cable

JS Cable
www.jscable.co.kr

JS Cable
**Halogen Free &
MUD Resistant Cables**
Marine & Offshore Cable
NEK 606 (2004)



■ Products & Systems of JS Cable



Marine & Offshore Cables



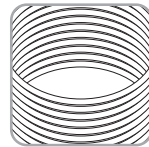
Rubber & Specialty Cables



Electric Cables



Data Cables



Copper Rod

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The Innovative Challenger For
Your Dream

P r e f a c e

A new beginning to deliver the dream of customers - JS Cable

A new name of endless innovation and creative ideas - JS Cable

Since its foundation in 1968, JS Cable has been a pioneer in rubber cable industry and known for its excellence in quality and technology.

JS Cable is a world class leader in shipboard and offshore cable products with state of art facilities. We pursue global standard quality, safety and health and environment with full compliance of ISO 9001 (Quality Management), ISO 14001 (Environment Management) and OHSAS 18001 (Safety and Healthy working Environment Management) standards.

We continue to strive for a pace setter in cable manufacturing industry by implementing state of art R&D Center, best practice HR Program, and a new ERP initiative.

A mission to deliver light, energy, and information to global communities - JS Cable

A great leap into the future, relentless pursue for customer value - JS Cable

With our customers, we devote our full attention to make a better world tomorrow.

■ Products & Systems of JS Cable

Marine & Offshore Cables



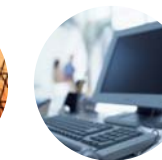
Rubber & Specialty Cables



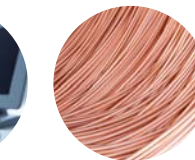
Electric Cables



Data Cables

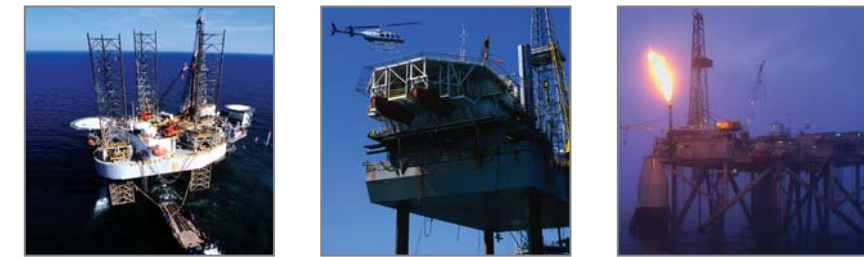


Copper Rod



C o m p a n y P r o f i l e

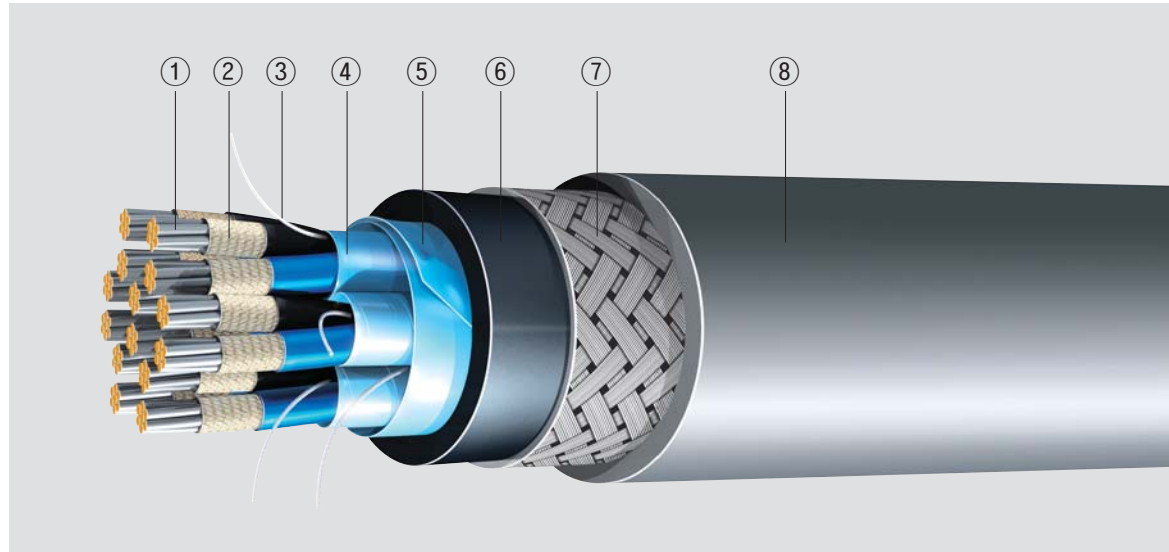
- 1968 ● The company incorporated in the name of YONHAP CABLE CO., LTD.
- 1978 ● Designated as a specialized factory for shipbuilding materials & equipment.
- 1984 ● Stock listed for public subscription.
- 1987 ● Moved to new constructed factory site located in Cheon-An
- 1990 ● Communication cable plant completed in Mokchon.
- 1992 ● Operation of the copper smelting furnace plant commenced.
- 1995 ● ISO 9001 certification acquired. (LRQA)
- 2000 ● LAN cable production line started its commercial operation.
- 2001 ● TL (Telecommunication Leadership) 9000 certification acquired(LRQA).
ETL for IEEE 45 Type P Off-shore and Marine structure cables acquired.
UL for UL 1309 Type Off-shore and Marine structure cables acquired.
- 2002 ● Korean World Class Products Award for Marine Cable in 2002
(Minister of Commerce, Industry and Energy Republic of Korea)
- 2004 ● ISO 14001 certification acquired(LRQA).
- 2005 ● OHSAS 18001 certification acquired(LRQA).
The corporate governance of the company acquired by LS Group



C o t e n t s

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■ Halogen Free and MUD Resistant Cable



- | | |
|--|---|
| 1. Tinned copper conductor | 5. Collective screen (with drain wire) |
| 2. Mica / Glass tape | 6. Inner covering ; HFC |
| 3. EPR insulation | 7. Tinned copper braid armor (or Galvanized steel wire braid armor) |
| 4. Individual screen (with drain wire) | 8. Sheath (= Outer sheath) ; SHF2, SHF Mud |

Offshore oil production and exploration installation cost enormous sums of money to build and maintain. To ensure problem-free and smooth operations JS Cable always uses the best materials available in the production of offshore cables. The danger of fire is a calculated risk in offshore oil and gas activities and it is important therefore to use the best materials to obtain optimal flame retardancy and/or fire resistance properties.

The different demands on a cable in this field are many. Here are some of them:

1. The cable must be self-extinguishing.
2. It must function during and after a fire.
3. It must not give off corrosive gases.
4. It must not give off thick smoke.
5. It must give off as little toxic gases as possible.
6. It must be low in weight and small in dimension.
7. It must be easy to install

Halogen-containing compounds, for example, are good self-extinguishing materials. But all materials containing halogens will give off corrosive gases in a fire. In this connection we emphasize that the corrosion effect depends very much on the amount of halogen in the material.

Chlorine, fluorine, bromine and iodine are all halogens. During a fire these element will combine with hydrogen and form gases, which

together with humidity or water will create very corrosive acids. It is, however, possible today to compound good flame retardant materials without any halogens, and JS Cable is now producing and selling completely halogen free offshore cables.

These new cables together with our well known low-smoke, low halogen cables fully meet the IEC 60092-3, IEC 60092-350, IEC 60332-1, IEC 61034, IEC 60332-3 Cat A', IEEE 1202 and IEC 60331 requirements.

To avoid possible confusion between the flame retardant and fire resisting cables, here is a brief explanation of the differences:

1. A flame retardant cable is self-extinguishing and will not propagate the fire.
2. A fire resistant cable is designed to function in a fire, ensuring the integrity of vital circuits, which operate emergency lights, emergency pumps, shut-down systems, PA systems, etc.

Whether to use flame retardant, fire resistant and /or halogen free cables may to a large extent depend on the concept of the project, the approval authority and the philosophy of the rig owner or the operator.

There is, however, no doubt that by using halogen free cables, you avoid the risk of corrosion of the equipment and dangerous effects on human life in use of fire.

Abbreviation

- XLPE** Cross-Linked Polyethylene
- EPR** Ethylene Propylene Rubber
- CSP** Chlorosulphonated Polyethylene
- PCP** Polychloroprene
- HFC** Halogen Free Compound
- XLPE** Cross-Linked Polyolefin (SHF2/SHF Mud)
- MGT** Mica / Glass Tape

Code Designation

Materials	1 Letter Insulation	2 Letter Inner Covering	3 Letter Armour	4 Letter Sheath
XLPE	T			
EPR	R			
MGT / EPR	B			
HFC (Halogen Free Compound)		F		
CSP		H		H
PCP		C		C
SHF 2 (Halogen Free Thermoset Compound)				U
SHF Mud (Halogen Free & Mud Resistant Elastomer)				B
Galvanized Steel Wire			C	
Copper Wire			O	
Phosphorbronze Wire			P	

Added Abbreviation

(i)	Individual Screen
(c)	Collective Screen
(i & c)	Individual & Collective Screen



High Voltage Power Cable

3.6/6kV RFOU, RFOU/B

Halogen Free Flame Retardant Cable

- 3.6/6kV RFOU
- 6/10kV RFOU
- 8.7/15kV RFOU

NEK 606 Type : P2, P3, P4

Halogen Free & Mud Resistant Flame Retardant Cable

- 3.6/6kV RFOU/B
- 6/10kV RFOU/B
- 8.7/15kV RFOU/B

NEK 606 Type : P2/P9, P3/P10, P4/P11

Application

- Fixed installation in both explosion risk and safe areas
- High voltage power cables for general purposes
- For installations in areas exposed to MUD and drilling/cleaning fluids we recommend RFOU/B

Standards applied

- IEC 60092-354 : Design guidelines
- NEK 606(2004)
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)



Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Conductor Screen		Semi-conductive tape or extruded semi-conductive compound.
Insulation	R	EP-Rubber
Insulation Screen		Semi-conductive tape or extruded semi-conductive compound.
Metallic Screen		Tinned copper wire braid (If necessary, suitable tape may be applied on the braid) Copper tape may be applied purchaser order occur, if purchaser require.
Inner Covering	F	Flame retardant halogen free compound.
Armour	O	Tinned copper wire braid. (*)
Sheath	U	Flame retardant halogen free thermoset compound.(SHF2) Flame retardant halogen free & mud resistant thermoset compound. (SHF MUD)
Color	U/B	Red

(*) RFCU, RFCU/B = with galvanized steel wire braid

Cable Type 3.6/6kV RFOU, 3.6/6kV RFOU/B

No. of Cores & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Cable Weight	Current Carrying Capacity(Max.) (at 45°C)
No. x mm ²	mm	mm	mm	Ω/km	kg/km	A
1 x 25	2.5	18.0 ± 0.9	23.3 ± 1.4	0.734	990	121
1 x 35	2.5	19.2 ± 1.0	24.5 ± 1.5	0.529	1,140	149
1 x 50	2.5	20.5 ± 1.0	26.0 ± 1.5	0.391	1,330	186
1 x 70	2.5	22.3 ± 1.1	28.0 ± 1.6	0.270	1,620	230
1 x 95	2.5	24.2 ± 1.2	29.9 ± 1.7	0.195	1,960	278
1 x 120	2.5	25.8 ± 1.3	31.7 ± 1.8	0.154	2,280	322
1 x 150	2.5	27.8 ± 1.4	33.9 ± 1.9	0.126	2,660	370
1 x 185	2.5	29.6 ± 1.5	35.7 ± 1.9	0.100	3,090	422
1 x 240	2.6	32.5 ± 1.6	39.5 ± 2.1	0.0762	3,930	496
1 x 300	2.8	35.3 ± 1.8	42.5 ± 2.2	0.0607	4,690	571
3 x 25	2.5	36.8 ± 1.8	44.2 ± 2.3	0.734	3,300	85
3 x 35	2.5	39.8 ± 2.0	47.4 ± 2.4	0.529	3,890	105
3 x 50	2.5	42.6 ± 2.1	50.4 ± 2.5	0.391	4,540	130
3 x 70	2.5	46.4 ± 2.3	54.4 ± 2.7	0.270	5,530	161
3 x 95	2.5	50.9 ± 2.5	59.3 ± 2.9	0.195	6,810	195
3 x 120	2.5	54.4 ± 2.7	63.2 ± 3.0	0.154	7,960	225
3 x 150	2.5	57.8 ± 2.9	66.8 ± 3.2	0.126	9,130	258
3 x 185	2.5	61.7 ± 3.1	71.1 ± 3.3	0.100	10,700	295

Cable Type 6/10kV RFOU, 6/10kV RFOU/B

No. of Cores & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Cable Weight	Current Carrying Capacity(Max.) (at 45°C)
No. x mm ²	mm	mm	mm	Ω/km	kg/km	A
1 x 25	3.4	19.8 ± 1.0	25.3 ± 1.5	0.734	1,120	121
1 x 35	3.4	21.0 ± 1.1	26.5 ± 1.6	0.529	1,270	149
1 x 50	3.4	22.3 ± 1.1	28.0 ± 1.6	0.391	1,470	186
1 x 70	3.4	24.1 ± 1.2	29.8 ± 1.7	0.270	1,760	230
1 x 95	3.4	26.0 ± 1.3	31.9 ± 1.8	0.195	2,110	278
1 x 120	3.4	28.0 ± 1.4	34.1 ± 1.9	0.154	2,480	322
1 x 150	3.4	29.6 ± 1.5	35.7 ± 1.9	0.126	2,820	370
1 x 185	3.4	31.4 ± 1.6	38.2 ± 2.0	0.100	3,390	422
1 x 240	3.4	34.1 ± 1.7	41.1 ± 2.1	0.0762	4,090	496
1 x 300	3.4	36.8 ± 1.8	44.2 ± 2.3	0.0607	4,900	571
3 x 25	3.4	41.0 ± 2.1	48.6 ± 2.4	0.734	3,840	85
3 x 35	3.4	43.6 ± 2.2	51.4 ± 2.6	0.529	4,400	105
3 x 50	3.4	46.4 ± 2.3	54.4 ± 2.7	0.391	5,080	130
3 x 70	3.4	50.7 ± 2.5	59.1 ± 2.9	0.270	6,210	161
3 x 95	3.4	54.8 ± 2.7	63.6 ± 3.0	0.195	7,480	195
3 x 120	3.4	58.3 ± 2.9	67.3 ± 3.2	0.154	8,640	225
3 x 150	3.4	61.7 ± 3.1	71.1 ± 3.3	0.126	9,880	258
3 x 185	3.4	66.0 ± 3.3	75.6 ± 3.5	0.100	11,530	295
3 x 240	3.4	71.8 ± 3.6	82.0 ± 3.8	0.0762	14,020	347
3 x 25 E x 16	3.4 1.0	41.0 ± 2.1	48.6 ± 2.4	0.734 1.160	3,940	85
3 x 35 E x 25	3.4 1.2	45.0 ± 2.3	53.0 ± 2.6	0.529 0.734	4,780	105
3 x 50 E x 25	3.4 1.2	46.4 ± 2.3	54.4 ± 2.7	0.391 0.734	5,240	130
3 x 70 E x 35	3.4 1.2	50.7 ± 2.5	59.1 ± 2.9	0.270 0.529	6,450	161
3 x 95 E x 50	3.4 1.4	56.3 ± 2.8	65.1 ± 3.1	0.195 0.391	8,050	195
3 x 120 E x 70	3.4 1.4	60.2 ± 3.0	69.4 ± 3.3	0.154 0.270	9,470	225
3 x 150 E x 95	3.4 1.6	64.7 ± 3.2	74.3 ± 3.5	0.126 0.195	11,120	258

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 8.7/15kV RFOU, 8.7/15kV RFOU/B

No. of Cores & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Cable Weight	Current Carrying Capacity(Max.) (at 45°C)
No. x mm ²	mm	mm	mm	Ω/km	kg/km	A
1 x 25	4.5	22.0 ± 1.1	27.5 ± 1.6	0.734	1,270	121
1 x 35	4.5	23.2 ± 1.2	28.9 ± 1.7	0.529	1,440	149
1 x 50	4.5	24.5 ± 1.2	30.2 ± 1.7	0.391	1,630	186
1 x 70	4.5	26.3 ± 1.3	32.2 ± 1.8	0.270	1,950	230
1 x 95	4.5	28.6 ± 1.4	34.7 ± 1.9	0.195	2,350	278
1 x 120	4.5	30.2 ± 1.5	37.0 ± 2.0	0.154	2,800	322
1 x 150	4.5	31.8 ± 1.6	38.8 ± 2.1	0.126	3,170	370
1 x 185	4.5	33.6 ± 1.7	40.6 ± 2.1	0.100	3,620	422
1 x 240	4.5	36.6 ± 1.8	43.8 ± 2.3	0.0762	4,400	496
1 x 300	4.5	39.4 ± 2.0	47.0 ± 2.4	0.0607	5,190	571
1 x 400	4.5	42.3 ± 2.1	50.1 ± 2.5	0.0475	6,320	637
3 x 25	4.5	45.8 ± 2.3	53.8 ± 2.7	0.734	4,520	85
3 x 35	4.5	48.8 ± 2.4	57.0 ± 2.8	0.529	5,180	105
3 x 50	4.5	51.6 ± 2.6	60.0 ± 2.9	0.391	5,890	130
3 x 70	4.5	55.5 ± 2.8	64.3 ± 3.1	0.270	7,030	161
3 x 95	4.5	59.5 ± 3.0	68.7 ± 3.2	0.195	8,330	195
3 x 120	4.5	63.0 ± 3.2	72.4 ± 3.4	0.154	9,530	225
3 x 150	4.5	66.8 ± 3.3	76.6 ± 3.6	0.126	10,890	258
3 x 185	4.5	70.7 ± 3.5	80.7 ± 3.7	0.100	12,520	295
3 x 25 E x 16	4.5 1.0	45.8 ± 2.3	53.8 ± 2.7	0.734 1.160	4,620	85
3 x 35 E x 25	4.5 1.2	48.8 ± 2.4	57.0 ± 2.8	0.529 0.734	5,340	105
3 x 50 E x 25	4.5 1.2	51.6 ± 2.6	60.0 ± 2.9	0.391 0.734	6,060	130
3 x 70 E x 35	4.5 1.2	55.5 ± 2.8	64.3 ± 3.1	0.270 0.529	7,260	161
3 x 95 E x 50	4.5 1.4	56.3 ± 2.8	65.1 ± 3.1	0.195 0.391	8,040	195
3 x 120 E x 70	4.5 1.4	65.6 ± 3.3	75.2 ± 3.5	0.154 0.270	10,520	225
3 x 150 E x 95	4.5 1.6	69.7 ± 3.5	79.7 ± 3.7	0.126 0.195	12,160	258



High Voltage Power Cable

3.6/6kV BFOU, BFOU/B

Halogen Free Fire Resistant Cable

- 3.6/6kV BFOU
- 6/10kV BFOU
- NEK 606 Type : P6, P7

Halogen Free & Mud Resistant Fire Resistant Cable

- 3.6/6kV BFOU/B
- 6/10kV BFOU/B
- NEK 606 Type : P6/P13, P7/P14

Application

- Fixed installation in both explosion risk and safe areas
- High voltage power cables for emergency and critical systems
- For installations in areas exposed to MUD and drilling/ cleaning fluids we recommend BFOU/B

Standards applied

- IEC 60092-350 : Design guidelines
- NEK 606(2004)
- IEC 60331 : Fire resistance
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)

Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Insulation	B	Mica / Tape + EP-Rubber
Insulation Screen		Semi-conductive tape or extruded semi-conductive compound.
Metallic Screen		Tinned copper wire braid. (if necessary, suitable tape may be applied on the braid) Copper tape may be applied purchaser order occur.
Inner Covering	F	Flame retardant halogen free compound.
Armour	O	Tinned copper wire braid. (*)
Sheath	U U/B	Flame retardant halogen free thermoset compound(SHF2). Flame retardant halogen free & mud resistant thermoset compound(SHF MUD).
Color		Red

(*) BFCU, BFCU/B = with galvanized steel wire braid
• Cables to 1000°C with an upgraded IEC 60331 test.

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 3.6/6kV BFOU, 3.6/6kV BFOU/B

No. of Cores & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Cable Weight	Current Carrying Capacity(Max.) (at 45°C)
No. x mm ²	mm	mm	mm	Ω/km	kg/km	A
1 x 25	2.5	20.3 ± 1.0	26.1 ± 1.5	0.734	1,190	114
1 x 35	2.5	21.4 ± 1.1	27.2 ± 1.6	0.529	1,360	141
1 x 50	2.5	22.7 ± 1.1	28.7 ± 1.6	0.391	1,590	176
1 x 70	2.5	24.5 ± 1.2	30.5 ± 1.7	0.270	1,920	218
1 x 95	2.5	26.4 ± 1.3	32.6 ± 1.8	0.195	2,330	264
1 x 120	2.5	28.4 ± 1.4	34.8 ± 1.9	0.154	2,760	305
1 x 150	2.5	30.0 ± 1.5	37.2 ± 2.0	0.126	3,280	350
1 x 185	2.5	31.9 ± 1.6	39.3 ± 2.1	0.100	3,830	400
1 x 240	2.6	34.7 ± 1.7	42.3 ± 2.2	0.0762	4,690	470
1 x 300	2.8	38.2 ± 1.9	46.1 ± 2.3	0.0607	5,710	541
3 x 25	2.5	41.9 ± 2.1	50.2 ± 2.5	0.734	4,110	80
3 x 35	2.5	44.3 ± 2.2	52.8 ± 2.6	0.529	4,720	99
3 x 50	2.5	47.1 ± 2.4	55.9 ± 2.7	0.391	5,500	123
3 x 70	2.5	51.3 ± 2.6	60.3 ± 2.9	0.270	6,730	152
3 x 95	2.5	55.4 ± 2.8	64.8 ± 3.1	0.195	8,170	185
3 x 120	2.5	58.9 ± 2.9	68.6 ± 3.2	0.154	9,510	213
3 x 150	2.5	62.3 ± 3.1	72.4 ± 3.4	0.126	10,930	245
3 x 185	2.5	66.8 ± 3.3	77.4 ± 3.6	0.100	12,910	280
3 x 240	2.6	73.4 ± 3.7	84.4 ± 3.9	0.0762	16,010	329
3 x 300	2.8	79.4 ± 4.0	91.1 ± 4.1	0.0607	19,190	379

Cable Type 6/10kV BFOU, 6/10kV BFOU/B

No. of Cores & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Cable Weight	Current Carrying Capacity(Max.) (at 45°C)
No. x mm ²	mm	mm	mm	Ω/km	kg/km	A
1 x 25	3.4	22.6 ± 1.1	28.6 ± 1.6	0.734	1,360	114
1 x 35	3.4	23.7 ± 1.2	29.7 ± 1.7	0.529	1,540	141
1 x 50	3.4	25.1 ± 1.3	31.3 ± 1.8	0.391	1,770	176
1 x 70	3.4	26.9 ± 1.3	33.1 ± 1.8	0.270	2,120	218
1 x 95	3.4	29.2 ± 1.5	35.7 ± 1.9	0.195	2,590	264
1 x 120	3.4	30.8 ± 1.5	38.0 ± 2.0	0.154	3,090	305
1 x 150	3.4	32.3 ± 1.6	39.7 ± 2.1	0.126	3,510	350
1 x 185	3.4	34.2 ± 1.7	41.8 ± 2.2	0.100	4,070	400
1 x 240	3.4	37.1 ± 1.9	44.9 ± 2.3	0.0762	4,980	470
1 x 300	3.4	39.9 ± 2.0	48.0 ± 2.4	0.0607	5,920	541
3 x 25	3.4	46.8 ± 2.3	55.6 ± 2.7	0.734	4,860	80
3 x 35	3.4	49.6 ± 2.5	58.6 ± 2.8	0.529	5,570	99
3 x 50	3.4	52.6 ± 2.6	61.8 ± 3.0	0.391	6,390	123
3 x 70	3.4	56.5 ± 2.8	66.0 ± 3.1	0.270	7,650	152
3 x 95	3.4	60.6 ± 3.0	70.5 ± 3.3	0.195	9,160	185
3 x 120	3.4	64.5 ± 3.2	74.8 ± 3.5	0.154	10,640	213
3 x 150	3.4	67.7 ± 3.4	78.3 ± 3.6	0.126	12,080	245
3 x 185	3.4	71.8 ± 3.6	82.8 ± 3.8	0.100	14,030	280
3 x 240	3.4	77.9 ± 3.9	89.4 ± 4.1	0.0762	17,140	329
3 x 300	3.4	83.1 ± 4.2	95.0 ± 4.3	0.0607	20,160	379



Low Voltage Power & Control Cable

0.6/1kV RFOU, RFOU/B

Halogen Free Flame Retardant Cable

- 0.6/1kV RFOU NEK 606 Type : P1

Halogen Free & Mud Resistant Flame Retardant Cable

- 0.6/1kV RFOU/B NEK 606 Type : P1/P8

Application

- Fixed installation for power, control and lighting in both explosion risk and safe areas.
- General purposes for installations in areas exposed to MUD and drilling/ cleaning fluids we recommend RFOU/B

Standards applied

- IEC 60092-353 : Design guidelines
- NEK 606(2004)
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties.
- CSA C22-2 NO-38 : Low Temperature properties (optional)

Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Insulation	R	EP-Rubber
Inner Covering	F	Flame retardant halogen free compound.
Armour	O	Tinned copper wire braid (*)
Outer Sheath	U U/B	Flame retardant halogen free thermoset compound(SHF2) Flame retardant halogen free & mud resistant thermoset compound(SHF MUD)
Color		Black

(*) RFOU, RFOU/B = with galvanized steel wire braid

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 0.6/1kV RFOU, 0.6/1kV RFOU/B

No. of Cores & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight	Current Carrying Capacity(Max.) (at 45°C)
No. x mm ²	mm	mm	mm	Ω/km	MΩ/km	kg/km	A
2 x 150 Ex 95	1.8 1.6	42.8 ± 2.1	50.4 ± 2.5	0.126 0.195	330 360	8,310	272
2 x 185 Ex 95	2.0 1.6	46.7 ± 2.3	54.6 ± 2.7	0.100 0.195	330 360	7,270	311
2 x 240 Ex 120	2.2 1.6	53.0 ± 2.7	61.4 ± 3.0	0.0762 0.154	310 320	9,260	365
3 x 1.5 + E	1.0	10.9 ± 0.5	15.5 ± 1.1	12.2	1,300	400	16
3 x 2.5 + E	1.0	11.9 ± 0.6	16.6 ± 1.2	7.56	1,100	480	21
3 x 4 + E	1.0	13.3 ± 0.7	18.1 ± 1.2	4.70	920	590	28
3 x 6 + E	1.0	14.6 ± 0.7	19.5 ± 1.3	3.11	790	720	36
3 x 10 + E	1.0	17.0 ± 0.9	22.1 ± 1.4	1.84	640	970	50
3 x 16 + E	1.0	19.4 ± 1.0	24.6 ± 1.5	1.16	530	1,310	67
3 x 25 Ex 16	1.2 1.0	22.5 ± 1.1	28.0 ± 1.6	0.734 1.16	510 530	1,730	89
3 x 35 Ex 25	1.2 1.2	25.5 ± 1.3	31.2 ± 1.7	0.529 0.734	440 510	2,250	110
3 x 50 Ex 25	1.4 1.2	29.1 ± 1.5	35.0 ± 1.9	0.391 0.734	440 510	2,840	137
3 x 70 Ex 35	1.4 1.2	33.6 ± 1.7	39.8 ± 2.1	0.270 0.529	370 440	3,810	169
3 x 95 Ex 50	1.6 1.4	38.8 ± 1.9	45.9 ± 2.3	0.195 0.391	360 440	5,190	205
3 x 120 Ex 70	1.6 1.4	43.1 ± 2.2	50.5 ± 2.5	0.154 0.270	320 370	6,710	237
3 x 150 Ex 95	1.8 1.6	47.9 ± 2.4	55.7 ± 2.7	0.126 0.195	330 360	8,310	272
3 x 185 Ex 95	2.0 1.6	52.4 ± 2.6	60.5 ± 2.9	0.100 0.195	330 360	9,420	311
3 x 240 Ex 120	2.2 1.6	59.6 ± 3.0	68.1 ± 3.2	0.0762 0.154	310 320	12,050	365
4 x 1.5 + E	1.0	12.0 ± 0.6	16.6 ± 1.2	12.2	1,300	450	16
4 x 2.5 + E	1.0	13.1 ± 0.7	17.8 ± 1.2	7.56	1,100	530	21
4 x 4 + E	1.0	14.7 ± 0.7	19.5 ± 1.3	4.70	920	660	28
4 x 6 + E	1.0	16.0 ± 0.8	20.9 ± 1.3	3.11	790	720	36
4 x 10 + E	1.0	18.7 ± 0.9	23.8 ± 1.5	1.84	640	1,080	50
4 x 16 + E	1.0	21.4 ± 1.1	26.6 ± 1.6	1.16	530	1,310	67
4 x 25 Ex 16	1.2 1.0	25.0 ± 1.3	30.5 ± 1.7	0.734 1.16	510 530	1,930	89
4 x 35 Ex 25	1.2 1.2	28.3 ± 1.4	34.0 ± 1.9	0.529 0.734	440 510	2,490	110
4 x 50 Ex 25	1.4 1.2	32.5 ± 1.6	38.4 ± 2.0	0.391 0.734	440 510	3,160	137
4 x 70 Ex 35	1.4 1.2	37.5 ± 1.9	43.7 ± 2.2	0.270 0.529	370 440	4,240	169
4 x 95 Ex 50	1.6 1.4	43.4 ± 2.2	50.5 ± 2.5	0.195 0.391	360 440	5,780	205
4 x 120 Ex 70	1.6 1.4	48.1 ± 2.4	55.5 ± 2.7	0.154 0.270	320 370	6,710	237
4 x 150 Ex 95	1.8 1.6	53.5 ± 2.7	61.3 ± 3.0	0.126 0.195	330 360	8,310	272
4 x 185 Ex 95	2.0 1.6	58.6 ± 2.9	66.7 ± 3.2	0.100 0.195	330 360	10,450	311
4 x 240 Ex 120	2.2 1.6	66.7 ± 3.3	75.2 ± 3.5	0.0762 0.154	310 320	13,370	365



Low Voltage Power & Control Cable

0.6/1kV BFOU, BFOU/B

Halogen Free Fire Resistant Cable

- 0.6/1kV BFOU NEK 606 Type : P5

Halogen Free & Mud Resistant Fire Resistant Cable

- 0.6/1kV BFOU/B NEK 606 Type : P5/P12

Application

- Fixed installation for power, control and lighting in both explosion and safe areas.
- Emergency and critical systems.
- For installations in areas exposed to MUD and drilling/ cleaning fluids we recommend BFOU/B

Standards applied

- IEC 60092-353 : Design guidelines
- NEK 606(2004)
- IEC 60331 : Fire resistance
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)

Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Insulation	B	Mica / Glass Tape + EP-Rubber
Inner Covering	F	Flame retardant halogen free compound.
Armour	O	Tinned copper wire braid (*)
Sheath	U U/B	Flame retardant halogen free thermoset compound(SHF2) Flame retardant halogen free & mud resistant thermoset compound(SHF MUD)
Color		Black

(*) BFCU, BFCU/B = with galvanized steel wire braid
 • Cables to 1000°C with an upgraded IEC 60331 test.

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 0.6/1kV BFOU, 0.6/1kV BFOU/B

No. of Cores & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight	Current Carrying Capacity(Max.) (at 45°C)
No. x mm ²	mm	mm	mm	Ω/km	MΩ/km	kg/km	A
2 x 185 Ex 95	2.0 1.6	48.3 ± 2.4	56.3 ± 2.8	0.100 0.195	330 360	8,328	311
2 x 240 Ex 120	2.2 1.6	54.6 ± 2.7	63.1 ± 3.0	0.0762 0.154	310 320	12,410	365
3 x 1.5 + E	1.0	12.4 ± 0.6	17.1 ± 1.2	12.2	1,300	460	16
3 x 2.5 + E	1.0	13.3 ± 0.7	18.1 ± 1.2	7.56	1,100	530	21
3 x 4 + E	1.0	14.8 ± 0.7	19.7 ± 1.3	4.70	920	660	28
3 x 6 + E	1.0	16.0 ± 0.8	21.0 ± 1.3	3.11	790	780	36
3 x 10 + E	1.0	18.4 ± 0.9	23.5 ± 1.4	1.84	640	1,040	50
3 x 16 + E	1.0	20.8 ± 1.0	26.1 ± 1.5	1.16	530	1,370	67
3 x 25 Ex 16	1.2 1.0	24.0 ± 1.2	29.5 ± 1.7	0.734 1.16	510 530	1,891	89
3 x 35 Ex 25	1.2 1.2	27.2 ± 1.4	33.0 ± 1.8	0.529 0.734	440 510	2,471	110
3 x 50 Ex 25	1.4 1.2	30.7 ± 1.5	36.7 ± 2.0	0.391 0.734	440 510	3,061	137
3 x 70 Ex 35	1.4 1.2	34.7 ± 1.7	41.5 ± 2.2	0.270 0.529	370 440	4,139	169
3 x 95 Ex 50	1.6 1.4	40.0 ± 2.0	47.2 ± 2.4	0.195 0.391	360 440	5,471	205
3 x 120 Ex 70	1.6 1.4	44.3 ± 2.2	51.8 ± 2.6	0.154 0.270	320 370	6,786	237
3 x 150 Ex 95	1.8 1.6	49.3 ± 2.5	57.2 ± 2.8	0.126 0.195	330 360	8,375	272
3 x 185 Ex 95	2.0 1.6	53.4 ± 2.7	61.5 ± 3.0	0.100 0.195	330 360	10,455	311
3 x 240 Ex 120	2.2 1.6	60.6 ± 3.0	69.2 ± 3.3	0.0762 0.154	310 320	15,257	365
4 x 1.5 + E	1.0	13.6 ± 0.7	18.3 ± 1.2	12.2	1,300	530	16
4 x 2.5 + E	1.0	14.7 ± 0.7	19.5 ± 1.3	7.56	1,100	620	21
4 x 4 + E	1.0	16.3 ± 0.8	21.2 ± 1.3	4.70	920	760	28
4 x 6 + E	1.0	17.7 ± 0.9	22.7 ± 1.4	3.11	790	920	36
4 x 10 + E	1.0	20.4 ± 1.0	25.5 ± 1.5	1.84	640	1,240	50
4 x 16 + E	1.0	23.1 ± 1.2	28.4 ± 1.6	1.16	530	1,640	67
4 x 25 Ex 16	1.2 1.0	26.6 ± 1.3	32.1 ± 1.8	0.734 1.16	510 530	2,271	89
4 x 35 Ex 25	1.2 1.2	29.9 ± 1.5	35.7 ± 1.9	0.529 0.734	440 510	2,951	110
4 x 50 Ex 25	1.4 1.2	34.3 ± 1.7	40.3 ± 2.1	0.391 0.734	440 510	3,741	137
4 x 70 Ex 35	1.4 1.2	38.8 ± 1.9	45.6 ± 2.3	0.270 0.529	370 440	5,069	169
4 x 95 Ex 50	1.6 1.4	44.7 ± 2.2	51.9 ± 2.6	0.195 0.391	360 440	6,731	205
4 x 120 Ex 70	1.6 1.4	49.4 ± 2.5	56.9 ± 2.8	0.154 0.270	320 370	8,326	237
4 x 150 Ex 95	1.8 1.6	54.8 ± 2.7	62.7 ± 3.0	0.126 0.195	330 360	10,235	272
4 x 185 Ex 95	2.0 1.6	59.9 ± 3.0	68.0 ± 3.2	0.100 0.195	330 360	12,885	311
4 x 240 Ex 120	2.2 1.6	68.0 ± 3.4	76.6 ± 3.6	0.0762 0.154	310 320	18,477	365



Low Voltage Power & Control Cable

0.6/1kV RU, RU/B

Halogen Free Flame Retardant Cable

- 0.6/1kV RU NEK 606 Type : P18

Halogen Free & Mud Resistant Flame Resistant Cable

- 0.6/1kV RU/B

Application

- Unarmoured cable.
- Control, general power and lighting.
- Fixed installations in ships.

Standards applied

- IEC 60092-353 : Design guidelines
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties
- NEK 606(2004)

Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper.
Insulation	R	EP-Rubber
Sheath	U	Flame retardant halogen free compound(SHF2)
	U/B	Flame retardant halogen free & Mud resistant thermost compound(SHF Mud)
Color		Black

Cable Type 0.6/1kV RU, 0.6/1kV RU/B

No. of Cores & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight	Current Carrying Capacity(Max.) (at 45°C)
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km	A
1 x 1.5	1.0	6.1 ± 0.7	12.2	1,300	60	23
1 x 2.5	1.0	6.5 ± 0.8	7.56	1,110	70	40
1 x 4	1.0	7.1 ± 0.8	4.70	930	90	51
1 x 6	1.0	7.6 ± 0.8	3.11	790	120	52
1 x 10	1.0	8.6 ± 0.8	1.84	640	160	72
1 x 16	1.0	9.8 ± 0.9	1.16	530	230	96
1 x 25	1.2	11.6 ± 1.0	0.734	510	350	127
1 x 35	1.2	12.9 ± 1.0	0.529	440	450	157
1 x 50	1.4	14.8 ± 1.1	0.391	440	600	196
1 x 70	1.4	16.7 ± 1.2	0.270	380	820	242
1 x 95	1.6	19.1 ± 1.3	0.195	370	1,110	293
1 x 120	1.6	20.8 ± 1.3	0.154	330	1,370	339
1 x 150	1.8	23.0 ± 1.4	0.126	330	1,680	389
1 x 185	2.0	25.3 ± 1.5	0.100	330	2,080	444
1 x 240	2.2	28.7 ± 1.6	0.0762	320	2,710	522
1 x 300	2.4	31.6 ± 1.8	0.0607	310	3,350	601

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 0.6/1kV RU, 0.6/1kV RU/B

No. of Cores & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight	Current Carrying Capacity(Max.) (at 45°C)
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km	A
2x1.5	1.0	9.9±0.9	12.2	1,300	120	20
2x2.5	1.0	10.8±0.9	7.56	1,110	150	26
2x4	1.0	12.1±1.0	4.70	930	190	34
2x6	1.0	13.2±1.0	3.11	790	230	44
2x10	1.0	15.3±1.1	1.84	640	320	61
2x16	1.0	17.6±1.2	1.16	530	440	82
2x25	1.2	21.3±1.4	0.734	510	650	108
2x35	1.2	23.9±1.5	0.529	440	840	133
2x50	1.4	27.5±1.6	0.391	440	1,110	167
2x70	1.4	31.4±1.8	0.270	380	1,490	206
2x95	1.6	36.3±2.0	0.195	370	2,000	249
2x120	1.6	39.7±2.1	0.154	330	2,430	288
2x150	1.8	44.0±2.3	0.126	330	2,980	331
2x185	2.0	48.7±2.4	0.100	330	3,680	377
3x1.5	1.0	10.6±0.9	12.2	1,300	180	16
3x2.5	1.0	11.5±1.0	7.56	1,110	220	21
3x4	1.0	12.8±1.0	4.70	930	290	28
3x6	1.0	14.0±1.1	3.11	790	380	36
3x10	1.0	16.4±1.2	1.84	640	550	50
3x16	1.0	18.8±1.3	1.16	530	780	67
3x25	1.2	22.8±1.4	0.734	510	1,180	89
3x35	1.2	25.6±1.5	0.529	440	1,550	110
3x50	1.4	29.5±1.7	0.391	440	2,080	137
3x70	1.4	33.6±1.8	0.270	380	2,840	169
3x95	1.6	39.0±2.1	0.195	370	3,880	205
3x120	1.6	42.6±2.2	0.154	330	4,770	237
3x150	1.8	47.2±2.4	0.126	330	5,850	272
3x185	2.0	52.3±2.6	0.100	330	7,280	311
2x1.5+E	1.0	10.6±0.9	12.2	1,300	180	16
2x2.5+E	1.0	11.5±1.0	7.56	1,110	220	21
2x4+E	1.0	12.8±1.0	4.70	930	290	28
2x6+E	1.0	14.0±1.1	3.11	790	380	36
2x10+E	1.0	16.4±1.2	1.84	640	550	50
2x16+E	1.0	18.8±1.3	1.16	530	780	67
2x25	1.2	21.8±1.4	0.734	510	1,130	89
Ex16	1.0		1.160	530		
2x35	1.2	24.7±1.5	0.529	440	1,540	110
Ex25	1.2		0.734	510		
2x50	1.4	28.0±1.6	0.391	440	1,930	137
Ex25	1.2		0.734	510		
2x70	1.4	31.8±1.8	0.270	380	2,600	169
Ex35	1.2		0.529	440		
2x95	1.6	36.8±2.0	0.195	370	3,530	206
Ex50	1.4		0.391	440		
2x120	1.6	40.4±2.1	0.154	330	4,440	237
Ex70	1.4		0.270	380		

Cable Type 0.6/1kV RU, 0.6/1kV RU/B

No. of Cores & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight	Current Carrying Capacity(Max.) (at 45°C)
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km	A
2x150	1.8		0.126	330		
Ex95	1.6	45.1±2.3	0.195	370	5,580	272
3x1.5+E	1.0	11.6±1.0	12.2	1,300	220	16
3x2.5+E	1.0	12.7±1.0	7.56	1,110	280	21
3x4+E	1.0	14.2±1.1	4.70	930	370	28
3x6+E	1.0	15.6±1.1	3.11	790	480	36
3x10+E	1.0	18.2±1.2	1.84	640	700	50
3x16+E	1.0	21.0±1.3	1.16	530	1,010	67
3x25	1.2	24.2±1.5	0.734	510	1,450	89
Ex16	1.0		1.160	530		
3x35	1.2	27.7±1.6	0.529	440	1,980	110
Ex25	1.2		0.734	510		
3x50	1.4	31.4±1.8	0.391	440	2,510	137
Ex25	1.2		0.734	510		
3x70	1.4	35.7±1.9	0.270	380	3,410	169
Ex35	1.2		0.529	440		
3x95	1.6	41.4±2.2	0.195	370	4,640	205
Ex50	1.4		0.391	440		
3x120	1.6	45.5±2.3	0.154	330	5,820	237
Ex70	1.4		0.270	380		
3x150	1.8	50.8±2.5	0.126	330	7,290	272
Ex95	1.6		0.195	370		
5x1.5	1.0	12.7±1.0	12.2	1,300	230	13
7x1.5	1.0	13.9±1.1	12.2	1,300	300	12
9x1.5	1.0	16.4±1.2	12.2	1,300	380	11
10x1.5	1.0	17.9±1.2	12.2	1,300	420	11
12x1.5	1.0	18.5±1.2	12.2	1,300	480	10
14x1.5	1.0	19.5±1.3	12.2	1,300	550	10
16x1.5	1.0	20.7±1.3	12.2	1,300	620	9
19x1.5	1.0	21.9±1.4	12.2	1,300	720	9
24x1.5	1.0	25.8±1.5	12.2	1,300	910	8
27x1.5	1.0	26.5±1.6	12.2	1,300	1,000	8
30x1.5	1.0	27.4±1.6	12.2	1,300	1,100	7
37x1.5	1.0	29.8±1.7	12.2	1,300	1,330	7
5x2.5	1.0	13.9±1.1	7.56	1,110	290	23
7x2.5	1.0	15.2±1.1	7.56	1,110	380	21
9x2.5	1.0	18.0±1.2	7.56	1,110	490	19
10x2.5	1.0	19.6±1.3	7.56	1,110	550	19
12x2.5	1.0	20.3±1.3	7.56	1,110	630	17
14x2.5	1.0	21.4±1.4	7.56	1,110	720	17
16x2.5	1.0	22.7±1.4	7.56	1,110	810	16
19x2.5	1.0	24.0±1.5	7.56	1,110	950	15
24x2.5	1.0	28.4±1.6	7.56	1,110	1,200	14
27x2.5	1.0	29.1±1.7	7.56	1,110	1,330	13
30x2.5	1.0	30.2±1.7	7.56	1,110	1,460	13
37x2.5	1.0	32.8±1.8	7.56	1,110	1,770	12

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data



Low Voltage Power & Control Cable

0.6/1kV BU, BU/B

Halogen Free Fire Resistant Cable

- 0.6/1kV BU NEK 606 Type : P17

Halogen Free & Mud Resistant Fire Resistant Cable

- 0.6/1kV BU/B

Application

- Fixed installation in ships, control, general power and lighting

Standards applied

- IEC 60092-353 : Design guidelines
- IEC 60331 : Fire resistance
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties
- NEK 606(2004)
- IEC 60332-3 : Flame retardant Cat. A



Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Insulation	B	Mica / Glass Tape + EP-Rubber
Sheath	U U/B	Flame retardant halogen free thermoset compound(SHF2) Flame retardant halogen free & mud resistant thermoset compound(SHF MUD)
Color		Black

- Cables to 1000°C with an upgraded IEC 60331 test.

Cable Type 0.6/1kV BU, 0.6/1kV BU/B

No. of Cores & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(max.)	Cable Weight	Current Carrying Capacity(Max.) (at 45°C)
No. x mm ²	mm	mm	Ω/km	M.Ω/km	kg/km	A
1 x 1.5	1.0	6.7 ± 0.8	12.2	1,300	70	23
1 x 2.5	1.0	7.1 ± 0.8	7.56	1,110	80	40
1 x 4	1.0	7.7 ± 0.8	4.70	930	110	51
1 x 6	1.0	8.2 ± 0.8	3.11	790	130	52
1 x 10	1.0	9.4 ± 0.9	1.84	640	180	72
1 x 16	1.0	10.5 ± 0.9	1.16	530	250	96
1 x 25	1.2	12.4 ± 1.0	0.734	510	370	127
1 x 35	1.2	13.6 ± 1.0	0.529	440	480	157
1 x 50	1.4	15.5 ± 1.1	0.391	440	630	196
1 x 70	1.4	17.5 ± 1.2	0.270	380	860	242
1 x 95	1.6	20.0 ± 1.3	0.195	370	1,160	293
1 x 120	1.6	21.6 ± 1.4	0.154	330	1,420	339
1 x 150	1.8	23.8 ± 1.5	0.126	330	1,730	389
1 x 185	2.0	26.2 ± 1.5	0.100	330	2,140	444
1 x 240	2.2	29.5 ± 1.7	0.0762	320	2,770	522
1 x 300	2.4	32.5 ± 1.8	0.0607	310	3,430	601

Cable Type 0.6/1kV BU, 0.6/1kV BU/B

No. of Cores & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight	Current Carrying Capacity(Max.) (at 45°C)
No. x mm ²	mm	mm	Ω/km	M.Ω/km	kg/km	A
2 x 1.5	1.0	11.2 ± 0.9	12.2	1,300	160	20
2 x 2.5	1.0	12.1 ± 1.0	7.56	1,110	190	26
2 x 4	1.0	13.4 ± 1.0	4.70	930	240	34
2 x 6	1.0	14.4 ± 1.1	3.11	790	290	44
2 x 10	1.0	16.6 ± 1.2	1.84	640	390	61
2 x 16	1.0	18.7 ± 1.2	1.16	530	520	82
2 x 25	1.2	22.3 ± 1.4	0.734	510	750	108
2 x 35	1.2	24.9 ± 1.5	0.529	440	940	133
2 x 50	1.4	28.6 ± 1.6	0.391	440	1,250	167
2 x 70	1.4	32.4 ± 1.8	0.270	380	1,640	206
2 x 95	1.6	37.3 ± 2.0	0.195	370	2,190	249
2 x 120	1.6	40.8 ± 2.1	0.154	330	2,660	288
2 x 150	1.8	45.0 ± 2.3	0.126	330	3,230	331
2 x 185	2.0	49.8 ± 2.5	0.100	330	3,990	377
3 x 1.5	1.0	12.0 ± 1.0	12.2	1,300	180	16
3 x 2.5	1.0	12.8 ± 1.0	7.56	1,110	210	21
3 x 4	1.0	14.2 ± 1.1	4.70	930	260	28
3 x 6	1.0	15.4 ± 1.1	3.11	790	310	36
3 x 10	1.0	17.7 ± 1.2	1.84	640	410	50
3 x 16	1.0	20.0 ± 1.3	1.16	530	540	67
3 x 25	1.2	24.0 ± 1.5	0.734	510	790	89
3 x 35	1.2	26.7 ± 1.6	0.529	440	980	110
3 x 50	1.4	30.6 ± 1.7	0.391	440	1,290	137
3 x 70	1.4	34.8 ± 1.9	0.270	380	1,690	169
3 x 95	1.6	40.1 ± 2.1	0.195	370	2,250	205
3 x 120	1.6	43.8 ± 2.3	0.154	330	2,710	237
3 x 150	1.8	48.4 ± 2.4	0.126	330	3,300	272
3 x 185	2.0	53.5 ± 2.6	0.100	330	4,060	311
2 x 1.5 + E	1.0	12.5 ± 1.0	12.2	1,300	210	16
2 x 2.5 + E	1.0	13.5 ± 1.0	7.56	1,110	260	21
2 x 4 + E	1.0	14.7 ± 1.1	4.70	930	340	28
2 x 6 + E	1.0	16.0 ± 1.1	3.11	790	430	36
2 x 10 + E	1.0	18.1 ± 1.2	1.84	640	600	50
2 x 16 + E	1.0	20.7 ± 1.3	1.16	530	850	67
2 x 25	1.2	23.5 ± 1.4	0.734	510	1,210	89
E x 16	1.0		1.160	530		
2 x 35	1.2	26.3 ± 1.6	0.529	440	1,630	110
E x 25	1.2		0.734	510		
2 x 50	1.4	29.7 ± 1.7	0.391	440	2,030	137
E x 25	1.2		0.734	510		
2 x 70	1.4	33.4 ± 1.8	0.270	380	2,710	169
E x 35	1.2		0.529	440		
2 x 95	1.6	38.5 ± 2.0	0.195	370	3,660	205
E x 50	1.4		0.391	440		
2 x 120	1.6	42.1 ± 2.2	0.154	330	4,580	237
E x 70	1.4		0.270	380		

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 0.6/1kV BU, 0.6/1kV BU/B

No. of Cores & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight	Current Carrying Capacity(Max.) (at 45°C)
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km	A
2x150 Ex95	1.8 1.6	46.6 ± 2.4	0.126 0.195	330 370	5,730	272
3x1.5+E	1.0	13.2 ± 1.0	12.2	1,300	250	16
3x2.5+E	1.0	14.2 ± 1.1	7.56	1,110	310	21
3x4+E	1.0	15.8 ± 1.1	4.70	930	410	28
3x6+E	1.0	17.1 ± 1.2	3.11	790	530	36
3x10+E	1.0	19.7 ± 1.3	1.84	640	760	50
3x16+E	1.0	22.3 ± 1.4	1.16	530	1,060	67
3x25 Ex16	1.2 1.0	25.4 ± 1.5	0.734 1.160	510 530	1,520	89
3x35 Ex25	1.2 1.2	29.0 ± 1.7	0.529 0.734	440 510	2,060	110
3x50 Ex25	1.4 1.2	32.6 ± 1.8	0.391 0.734	440 510	2,600	137
3x70 Ex35	1.4 1.2	37.0 ± 2.0	0.270 0.529	380 440	3,520	169
3x95 Ex50	1.6 1.4	42.7 ± 2.2	0.195 0.391	370 440	4,770	205
3x120 Ex70	1.6 1.4	46.8 ± 2.4	0.154 0.270	330 380	5,960	237
3x150 Ex95	1.8 1.6	52.1 ± 2.6	0.126 0.195	330 370	7,440	272
5x1.5	1.0	15.2 ± 1.1	12.2	1,300	280	13
7x1.5	1.0	16.7 ± 1.2	12.2	1,300	370	12
9x1.5	1.0	19.8 ± 1.3	12.2	1,300	480	11
10x1.5	1.0	21.6 ± 1.4	12.2	1,300	530	11
12x1.5	1.0	22.4 ± 1.4	12.2	1,300	610	10
14x1.5	1.0	23.6 ± 1.4	12.2	1,300	690	10
16x1.5	1.0	25.0 ± 1.5	12.2	1,300	780	9
19x1.5	1.0	26.5 ± 1.6	12.2	1,300	900	9
24x1.5	1.0	31.4 ± 1.8	12.2	1,300	1,140	8
27x1.5	1.0	32.2 ± 1.8	12.2	1,300	1,260	8
30x1.5	1.0	33.4 ± 1.8	12.2	1,300	1,380	7
37x1.5	1.0	36.3 ± 2.0	12.2	1,300	1,670	7
5x2.5	1.0	15.6 ± 1.1	7.56	1,110	310	23
7x2.5	1.0	17.1 ± 1.2	7.56	1,110	400	21
9x2.5	1.0	20.3 ± 1.3	7.56	1,110	520	19
10x2.5	1.0	22.1 ± 1.4	7.56	1,110	570	19
12x2.5	1.0	22.9 ± 1.4	7.56	1,110	660	17
14x2.5	1.0	24.2 ± 1.5	7.56	1,110	760	17
16x2.5	1.0	25.7 ± 1.5	7.56	1,110	850	16
19x2.5	1.0	27.2 ± 1.6	7.56	1,110	990	15
24x2.5	1.0	32.2 ± 1.8	7.56	1,110	1,260	14
27x2.5	1.0	33.0 ± 1.8	7.56	1,110	1,390	13
30x2.5	1.0	34.3 ± 1.9	7.56	1,110	1,530	13
37x2.5	1.0	37.3 ± 2.0	7.56	1,110	1,850	12



Instrumentation & Communication Cable

250V RFOU(i), RFOU/B(i)

Halogen Free Flame Retardant Cable Individual Screen

- 250V RFOU(i) NEK 606 Type : S1

Halogen Free & Mud Resistant Flame Retardant Cable Individual Screen

- 250V RFOU/B(i) NEK 606 Type : S1/S5

Application

- Fixed installation for instrumentation, communication, control and alarm system in both explosion risk and safe areas, general purposes
- For installations in areas exposed to MUD and drilling/cleaning fluids we recommend RFOU/B(i)

Standards applied

- IEC 60092-376 : Design guidelines
- NEK 606(2004)
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)

Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Insulation	R	EP-Rubber
Twisting		Color coded cores twisted together to form a pair / triad
Individual Screen	(i)	Each pair / triad are individually screened by copper (or aluminum) backed polyester tape with tinned copper drain wire. Pairs / triads are identified by numbered tape and printed numbers on insulation.
Inner Covering	F	Flame retardant halogen free compound.
Armour	O	Tinned copper wire braid (*)
Sheath	U U/B	Flame retardant halogen free thermoset compound(SHF2) Flame retardant halogen free & mud resistant thermoset compound(SHF MUD)
Color		Non-intrinsically safe cable : Grey Intrinsically safe cable : Blue

(*) RFOU(i), RFOU/B(i) = with galvanized steel wire braid

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data



Instrumentation & Communication Cable

250V RFOU(c), RFOU/B(c)

Halogen Free Flame Retardant Cable Collective Screen

- 250V RFOU(c) NEK 606 Type : S2

Halogen Free & Mud Resistant Flame Retardant Cable Collective Screen

- 250V RFOU/B(c) NEK 606 Type : S2 / S6

Application

- Fixed installation for instrumentation, communication, control and alarm system in both explosion risk and safe areas, general purposes.
- For installations in areas exposed to MUD and drilling/cleaning fluids we recommend RFOU/B

Standards applied

- IEC 60092-376 : Design guidelines
- NEK 606(2004)
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)



Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Insulation	R	EP-Rubber
Twisting		Color coded cores twisted together to form a pair / triad
Collective Screen	(c)	Pairs / triads are laid up and collectively screened by copper (or aluminum) backed polyester tape with tinned copper drain wire. Pairs / triads are identified by printed numbers on insulation.
Inner Covering	F	Flame retardant halogen free compound.
Armour	O	Tinned copper wire braid (*)
Sheath	U U/B	Flame retardant halogen free thermoset compound(SHF2) Flame retardant halogen free & mud resistant thermoset compound(SHF MUD)
Color		Non-intrinsically safe cable : Grey Intrinsically safe cable : Blue

(*) RFOU(c), RFOU/B(c) = with galvanized steel wire braid

Cable Type 250V RFOU(c), 250V RFOU/B(c) Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	mm	Ω/km	M.Ω/km	kg/km
1P x 0.75	0.6	7.1 ± 0.4	10.9 ± 0.9	26.3	1,170	200
2P x 0.75	0.6	8.1 ± 0.4	12.0 ± 1.0	26.3	1,170	250
3P x 0.75	0.6	11.3 ± 0.6	15.9 ± 1.1	26.3	1,170	400
4P x 0.75	0.6	12.4 ± 0.6	17.1 ± 1.2	26.3	1,170	460
7P x 0.75	0.6	14.3 ± 0.7	19.2 ± 1.3	26.3	1,170	600
8P x 0.75	0.6	15.7 ± 0.8	20.7 ± 1.3	26.3	1,170	660
10P x 0.75	0.6	17.7 ± 0.9	22.9 ± 1.4	26.3	1,170	780
12P x 0.75	0.6	18.1 ± 0.9	23.3 ± 1.4	26.3	1,170	850
14P x 0.75	0.6	19.1 ± 1.0	24.4 ± 1.5	26.3	1,170	940
16P x 0.75	0.6	20.1 ± 1.0	25.5 ± 1.5	26.3	1,170	1,030
19P x 0.75	0.6	21.0 ± 1.1	26.5 ± 1.6	26.3	1,170	1,140
24P x 0.75	0.6	24.6 ± 1.2	30.4 ± 1.7	26.3	1,170	1,400
32P x 0.75	0.6	27.2 ± 1.4	33.2 ± 1.8	26.3	1,170	1,740
1P x 1.0	0.6	7.5 ± 0.4	11.3 ± 1.0	19.3	1,050	210
2P x 1.0	0.6	8.6 ± 0.4	12.5 ± 1.0	19.3	1,050	270
3P x 1.0	0.6	12.1 ± 0.6	16.7 ± 1.2	19.3	1,050	440
4P x 1.0	0.6	13.2 ± 0.7	17.9 ± 1.2	19.3	1,050	500
7P x 1.0	0.6	15.3 ± 0.8	20.2 ± 1.3	19.3	1,050	670
8P x 1.0	0.6	16.9 ± 0.8	21.9 ± 1.4	19.3	1,050	750
10P x 1.0	0.6	18.9 ± 0.9	24.1 ± 1.5	19.3	1,050	880
12P x 1.0	0.6	19.5 ± 1.0	24.7 ± 1.5	19.3	1,050	970
14P x 1.0	0.6	20.5 ± 1.0	25.8 ± 1.5	19.3	1,050	1,070
16P x 1.0	0.6	21.5 ± 1.1	26.9 ± 1.6	19.3	1,050	1,170
19P x 1.0	0.6	22.6 ± 1.1	28.1 ± 1.6	19.3	1,050	1,310
24P x 1.0	0.6	26.5 ± 1.3	32.3 ± 1.8	19.3	1,050	1,610
32P x 1.0	0.6	29.2 ± 1.5	35.2 ± 1.9	19.3	1,050	2,010
1P x 1.5	0.7	8.5 ± 0.4	12.4 ± 1.0	12.9	1,010	260
2P x 1.5	0.7	9.8 ± 0.5	13.8 ± 1.1	12.9	1,010	340
3P x 1.5	0.7	14.0 ± 0.7	18.8 ± 1.3	12.9	1,010	550
4P x 1.5	0.7	15.3 ± 0.8	20.2 ± 1.3	12.9	1,010	630
7P x 1.5	0.7	17.8 ± 0.9	22.9 ± 1.4	12.9	1,010	860
8P x 1.5	0.7	19.7 ± 1.0	24.9 ± 1.5	12.9	1,010	970
10P x 1.5	0.7	22.1 ± 1.1	27.6 ± 1.6	12.9	1,010	1,150
12P x 1.5	0.7	22.8 ± 1.1	28.3 ± 1.6	12.9	1,010	1,270
14P x 1.5	0.7	24.0 ± 1.2	29.6 ± 1.7	12.9	1,010	1,410
16P x 1.5	0.7	25.2 ± 1.3	30.9 ± 1.7	12.9	1,010	1,550
19P x 1.5	0.7	26.5 ± 1.3	32.3 ± 1.8	12.9	1,010	1,750
24P x 1.5	0.7	31.5 ± 1.6	37.7 ± 2.0	12.9	1,010	2,210
32P x 1.5	0.7	34.3 ± 1.7	41.3 ± 2.2	12.9	1,010	2,850
1T x 0.75	0.6	7.5 ± 0.4	11.3 ± 1.0	26.3	1,170	220
2T x 0.75	0.6	12.2 ± 0.6	16.9 ± 1.2	26.3	1,170	420
3T x 0.75	0.6	12.9 ± 0.6	17.6 ± 1.2	26.3	1,170	480
4T x 0.75	0.6	14.2 ± 0.7	19.0 ± 1.3	26.3	1,170	560
7T x 0.75	0.6	16.9 ± 0.8	21.9 ± 1.4	26.3	1,170	770
8T x 0.75	0.6	18.4 ± 0.9	23.6 ± 1.4	26.3	1,170	860
10T x 0.75	0.6	21.7 ± 1.1	27.1 ± 1.6	26.3	1,170	1,040

High Voltage Power Cable
Low Voltage Power & Control Cable
Instrumentation & Communication Cable
Low Voltage Earthing & Bonding Wire
Technical Data

Cable Type 250V RFOU(c), 250V RFOU/B(c) Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	mm	Ω/km	M Ω/km	kg/km
12T x 0.75	0.6	22.4 ± 1.1	27.8 ± 1.6	26.3	1,170	1,140
14T x 0.75	0.6	23.6 ± 1.2	29.1 ± 1.7	26.3	1,170	1,270
16T x 0.75	0.6	25.0 ± 1.3	30.6 ± 1.7	26.3	1,170	1,400
19T x 0.75	0.6	26.4 ± 1.3	32.1 ± 1.8	26.3	1,170	1,570
24T x 0.75	0.6	29.7 ± 1.5	35.8 ± 1.9	26.3	1,170	1,930
32T x 0.75	0.6	34.1 ± 1.7	41.0 ± 2.1	26.3	1,170	2,550
1T x 1.0	0.6	7.9 ± 0.4	11.7 ± 1.0	19.3	1,050	240
2T x 1.0	0.6	13.0 ± 0.7	17.7 ± 1.2	19.3	1,050	460
3T x 1.0	0.6	13.8 ± 0.7	18.5 ± 1.2	19.3	1,050	540
4T x 1.0	0.6	15.1 ± 0.8	19.9 ± 1.3	19.3	1,050	630
7T x 1.0	0.6	18.1 ± 0.9	23.1 ± 1.4	19.3	1,050	870
8T x 1.0	0.6	19.6 ± 1.0	24.8 ± 1.5	19.3	1,050	970
10T x 1.0	0.6	23.1 ± 1.2	28.5 ± 1.6	19.3	1,050	1,180
12T x 1.0	0.6	23.9 ± 1.2	29.3 ± 1.7	19.3	1,050	1,300
14T x 1.0	0.6	25.2 ± 1.3	30.7 ± 1.7	19.3	1,050	1,450
16T x 1.0	0.6	26.7 ± 1.3	32.3 ± 1.8	19.3	1,050	1,600
19T x 1.0	0.6	28.2 ± 1.4	33.9 ± 1.9	19.3	1,050	1,810
24T x 1.0	0.6	31.7 ± 1.6	37.8 ± 2.0	19.3	1,050	2,230
32T x 1.0	0.6	36.5 ± 1.8	43.4 ± 2.2	19.3	1,050	2,950
1T x 1.5	0.7	9.0 ± 0.5	12.9 ± 1.0	12.9	1,010	290
2T x 1.5	0.7	15.1 ± 0.8	19.9 ± 1.3	12.9	1,010	570
3T x 1.5	0.7	16.0 ± 0.8	20.9 ± 1.3	12.9	1,010	680
4T x 1.5	0.7	17.6 ± 0.9	22.6 ± 1.4	12.9	1,010	800
7T x 1.5	0.7	21.2 ± 1.1	26.4 ± 1.6	12.9	1,010	1,130
8T x 1.5	0.7	23.0 ± 1.2	28.4 ± 1.6	12.9	1,010	1,270
10T x 1.5	0.7	27.2 ± 1.4	32.9 ± 1.8	12.9	1,010	1,560
12T x 1.5	0.7	28.2 ± 1.4	33.9 ± 1.9	12.9	1,010	1,730
14T x 1.5	0.7	29.8 ± 1.5	35.6 ± 1.9	12.9	1,010	1,940
16T x 1.5	0.7	31.5 ± 1.6	37.4 ± 2.0	12.9	1,010	2,150
19T x 1.5	0.7	33.7 ± 1.7	39.8 ± 2.1	12.9	1,010	2,490
24T x 1.5	0.7	37.4 ± 1.9	44.5 ± 2.3	12.9	1,010	3,170
32T x 1.5	0.7	43.1 ± 2.2	50.4 ± 2.5	12.9	1,010	3,990
1P x 2.5	0.7	9.3 ± 0.5	13.3 ± 1.0	8.02	840	310
2P x 2.5	0.7	10.7 ± 0.5	14.8 ± 1.1	8.02	840	420
3P x 2.5	0.7	15.5 ± 0.8	20.4 ± 1.3	8.02	840	660
4P x 2.5	0.7	17.0 ± 0.9	22.0 ± 1.4	8.02	840	780
7P x 2.5	0.7	19.8 ± 1.0	25.0 ± 1.5	8.02	840	1,080
8P x 2.5	0.7	21.9 ± 1.1	27.3 ± 1.6	8.02	840	1,220
10P x 2.5	0.7	24.7 ± 1.2	30.4 ± 1.7	8.02	840	1,470
12P x 2.5	0.7	25.4 ± 1.3	31.1 ± 1.7	8.02	840	1,630
14P x 2.5	0.7	26.8 ± 1.3	32.6 ± 1.8	8.02	840	1,820
16P x 2.5	0.7	28.2 ± 1.4	34.2 ± 1.9	8.02	840	2,020
19P x 2.5	0.7	30.0 ± 1.5	36.1 ± 1.9	8.02	840	2,330
24P x 2.5	0.7	35.3 ± 1.8	42.4 ± 2.2	8.02	840	3,030
32P x 2.5	0.7	38.8 ± 1.9	46.2 ± 2.3	8.02	840	3,800



Instrumentation & Communication Cable

250V RFOU(i&c), RFOU/B(i&c)

Halogen Free Flame Retardant Cable Individual & Collective Screen

- 250V RFOU(i&c)

Halogen Free & Mud Resistant Flame Retardant Cable Individual & Collective Screen

- 250V RFOU/B(i&c)

Application

- Fixed installation for instrumentation, communication, control and alarm system in both explosion risk and safe areas, general purposes
- For installations in areas exposed to MUD and drilling/cleaning fluids we recommend RFOU/B(i&c)

Standards applied

- IEC 60092-376 : Design guidelines
- NEK 606(2004)
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)

Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Insulation	R	EP-Rubber
Twisting		Color coded cores twisted together to form a pair / triad
Individual Screen	(i)	Each pair / triad are individually screened by copper (or aluminum) backed polyester tape with tinned copper drain wire. Pairs / triads are identified by numbered tape and printed numbers on insulation.
Collective Screen	(c)	Individually screened pairs / triads are laid up and collectively screened by copper (or aluminum) backed polyester tape with tinned copper drain wire.
Inner Covering	F	Flame retardant halogen free compound.
Armour	O	Tinned copper wire braid (*)
Sheath	U U/B	Flame retardant halogen free thermoset compound(SHF2) Flame retardant halogen free & mud resistant thermoset compound(SHF MUD)
Color		Non-intrinsically safe cable : Grey Intrinsically safe cable : Blue

(*) RFOU (i&c) , RFOU/B (i&c) = with galvanized steel wire braid

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 250V RFOU(i&c), 250V RFOU/B(i&c) Individual&Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	mm	Ω /km	M Ω /km	kg/km
1P x 0.75	0.6	7.2 ± 0.4	11.0 ± 0.9	26.3	1,170	210
2P x 0.75	0.6	11.2 ± 0.6	15.8 ± 1.1	26.3	1,170	400
3P x 0.75	0.6	11.9 ± 0.6	16.6 ± 1.2	26.3	1,170	460
4P x 0.75	0.6	13.0 ± 0.7	17.8 ± 1.2	26.3	1,170	540
7P x 0.75	0.6	15.1 ± 0.8	20.1 ± 1.3	26.3	1,170	720
8P x 0.75	0.6	16.6 ± 0.8	21.7 ± 1.4	26.3	1,170	810
10P x 0.75	0.6	18.9 ± 0.9	24.2 ± 1.5	26.3	1,170	970
12P x 0.75	0.6	19.6 ± 1.0	24.9 ± 1.5	26.3	1,170	1,070
14P x 0.75	0.6	20.7 ± 1.0	26.1 ± 1.5	26.3	1,170	1,190
16P x 0.75	0.6	22.2 ± 1.1	27.7 ± 1.6	26.3	1,170	1,320
19P x 0.75	0.6	22.7 ± 1.1	28.3 ± 1.6	26.3	1,170	1,460
24P x 0.75	0.6	26.5 ± 1.3	32.4 ± 1.8	26.3	1,170	1,800
32P x 0.75	0.6	29.2 ± 1.5	35.4 ± 1.9	26.3	1,170	2,270
1P x 1.0	0.6	7.6 ± 0.4	11.5 ± 1.0	19.3	1,050	230
2P x 1.0	0.6	11.9 ± 0.6	16.5 ± 1.2	19.3	1,050	440
3P x 1.0	0.6	12.6 ± 0.6	17.3 ± 1.2	19.3	1,050	510
4P x 1.0	0.6	13.9 ± 0.7	18.7 ± 1.2	19.3	1,050	590
7P x 1.0	0.6	16.1 ± 0.8	21.1 ± 1.3	19.3	1,050	810
8P x 1.0	0.6	17.7 ± 0.9	22.8 ± 1.4	19.3	1,050	910
10P x 1.0	0.6	20.2 ± 1.0	25.5 ± 1.5	19.3	1,050	1,080
12P x 1.0	0.6	21.0 ± 1.1	26.3 ± 1.6	19.3	1,050	1,200
14P x 1.0	0.6	22.1 ± 1.1	27.5 ± 1.6	19.3	1,050	1,340
16P x 1.0	0.6	23.8 ± 1.2	29.3 ± 1.7	19.3	1,050	1,490
19P x 1.0	0.6	24.3 ± 1.2	29.9 ± 1.7	19.3	1,050	1,660
24P x 1.0	0.6	28.4 ± 1.4	34.3 ± 1.9	19.3	1,050	2,040
32P x 1.0	0.6	31.3 ± 1.6	37.5 ± 2.0	19.3	1,050	2,580
1P x 1.5	0.7	8.6 ± 0.4	12.6 ± 1.0	12.9	1,010	270
2P x 1.5	0.7	13.7 ± 0.7	18.5 ± 1.2	12.9	1,010	530
3P x 1.5	0.7	14.5 ± 0.7	19.3 ± 1.3	12.9	1,010	630
4P x 1.5	0.7	16.0 ± 0.8	20.9 ± 1.3	12.9	1,010	740
7P x 1.5	0.7	18.6 ± 0.9	23.8 ± 1.5	12.9	1,010	1,050
8P x 1.5	0.7	20.5 ± 1.0	25.9 ± 1.5	12.9	1,010	1,180
10P x 1.5	0.7	23.4 ± 1.2	29.0 ± 1.7	12.9	1,010	1,420
12P x 1.5	0.7	24.4 ± 1.2	30.0 ± 1.7	12.9	1,010	1,600
14P x 1.5	0.7	25.7 ± 1.3	31.4 ± 1.8	12.9	1,010	1,790
16P x 1.5	0.7	27.7 ± 1.4	33.6 ± 1.8	12.9	1,010	2,010
19P x 1.5	0.7	28.3 ± 1.4	34.3 ± 1.9	12.9	1,010	2,250
24P x 1.5	0.7	33.6 ± 1.7	40.5 ± 2.1	12.9	1,010	2,960
32P x 1.5	0.7	36.5 ± 1.8	43.7 ± 2.2	12.9	1,010	3,680

Cable Type 250V RFOU(i&c), 250V RFOU/B(i&c) Individual&Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	mm	Ω /km	M Ω /km	kg/km
1T x 0.75	0.6	7.6 ± 0.4	11.4 ± 1.0	26.3	1,170	230
2T x 0.75	0.6	12.8 ± 0.6	17.5 ± 1.2	26.3	1,170	460
3T x 0.75	0.6	13.6 ± 0.7	18.4 ± 1.2	26.3	1,170	550
4T x 0.75	0.6	14.9 ± 0.7	19.8 ± 1.3	26.3	1,170	640
7T x 0.75	0.6	17.8 ± 0.9	22.9 ± 1.4	26.3	1,170	890
8T x 0.75	0.6	19.3 ± 1.0	24.6 ± 1.5	26.3	1,170	1,000
10T x 0.75	0.6	22.8 ± 1.1	28.3 ± 1.6	26.3	1,170	1,220
12T x 0.75	0.6	23.5 ± 1.2	29.0 ± 1.7	26.3	1,170	1,350
14T x 0.75	0.6	24.8 ± 1.2	30.4 ± 1.7	26.3	1,170	1,500
16T x 0.75	0.6	26.3 ± 1.3	32.0 ± 1.8	26.3	1,170	1,660
19T x 0.75	0.6	28.2 ± 1.4	34.1 ± 1.9	26.3	1,170	1,930
24T x 0.75	0.6	31.2 ± 1.6	38.0 ± 2.0	26.3	1,170	2,440
32T x 0.75	0.6	35.9 ± 1.8	43.0 ± 2.2	26.3	1,170	3,080
1T x 1.0	0.6	8.0 ± 0.4	11.8 ± 1.0	19.3	1,050	260
2T x 1.0	0.6	13.6 ± 0.7	18.3 ± 1.2	19.3	1,050	520
3T x 1.0	0.6	14.4 ± 0.7	19.2 ± 1.3	19.3	1,050	610
4T x 1.0	0.6	15.8 ± 0.8	20.7 ± 1.3	19.3	1,050	720
7T x 1.0	0.6	18.9 ± 0.9	24.0 ± 1.5	19.3	1,050	1,010
8T x 1.0	0.6	20.5 ± 1.0	25.8 ± 1.5	19.3	1,050	1,130
10T x 1.0	0.6	24.3 ± 1.2	29.8 ± 1.7	19.3	1,050	1,380
12T x 1.0	0.6	25.1 ± 1.3	30.6 ± 1.7	19.3	1,050	1,530
14T x 1.0	0.6	26.5 ± 1.3	32.1 ± 1.8	19.3	1,050	1,710
16T x 1.0	0.6	28.4 ± 1.4	34.1 ± 1.9	19.3	1,050	1,940
19T x 1.0	0.6	30.0 ± 1.5	35.9 ± 1.9	19.3	1,050	2,200
24T x 1.0	0.6	33.3 ± 1.7	40.1 ± 2.1	19.3	1,050	2,790
32T x 1.0	0.6	38.7 ± 1.9	45.8 ± 2.3	19.3	1,050	3,580
1T x 1.5	0.7	9.0 ± 0.5	12.9 ± 1.0	12.9	1,010	300
2T x 1.5	0.7	15.5 ± 0.8	20.4 ± 1.3	12.9	1,010	620
3T x 1.5	0.7	16.4 ± 0.8	21.4 ± 1.4	12.9	1,010	750
4T x 1.5	0.7	18.1 ± 0.9	23.2 ± 1.4	12.9	1,010	900
7T x 1.5	0.7	21.7 ± 1.1	27.0 ± 1.6	12.9	1,010	1,300
8T x 1.5	0.7	23.6 ± 1.2	29.1 ± 1.7	12.9	1,010	1,460
10T x 1.5	0.7	28.4 ± 1.4	34.2 ± 1.9	12.9	1,010	1,850
12T x 1.5	0.7	29.3 ± 1.5	35.2 ± 1.9	12.9	1,010	2,080
14T x 1.5	0.7	31.0 ± 1.6	37.0 ± 2.0	12.9	1,010	2,340
16T x 1.5	0.7	32.8 ± 1.6	38.9 ± 2.1	12.9	1,010	2,600
19T x 1.5	0.7	34.6 ± 1.7	41.4 ± 2.2	12.9	1,010	3,090
24T x 1.5	0.7	38.9 ± 1.9	46.2 ± 2.3	12.9	1,010	3,830
32T x 1.5	0.7	44.7 ± 2.2	52.3 ± 2.6	12.9	1,010	4,870

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data



Instrumentation & Communication Cable

250V BFOU(i), BFOU/B(i)

Halogen Free Fire Resistant Cable Individual Screen

- 250V BFOU(i) NEK 606 Type : S3

Halogen Free & Mud Resistant Fire Resistant Cable Individual Screen

- 250V BFOU/B(i) NEK 606 Type : S3/S7

Application

- Fixed installation instrumentation, communication, control and alarm emergency and critical system in both explosion risk and safe areas.
- For installations in areas exposed to MUD and drilling/cleaning fluids we recommend BFOU/B(i)

Standards applied

- IEC 60092-376 : Design guidelines
- NEK 606(2004)
- IEC 60331 : Fire resistance
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)



Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Insulation	B	Mica / Glass tape + EP-Rubben
Twisting		Color coded cores twisted together to form a pair / triad
Individual Screen	(i)	Each pair / triad are individually screened by copper (or aluminum) backed polyester tape with tinned copper drain wire. Pairs / triads are identified by numbered tape and printed numbers on insulation.
Inner Covering	F	Flame retardant halogen free compound.
Armour	O	Tinned copper wire braid (*)
Sheath	U U/B	Flame retardant halogen free thermoset compound(SHF2) Flame retardant halogen free & mud resistant thermoset compound(SHF MUD)
Color		Non-intrinsically safe cable : Grey Intrinsically safe cable : Blue

(*) BFCU(i), BFCU/B(i) = with galvanized steel wire braid
• Cables to 1000°C with an upgraded IEC 60331 test.

Cable Type 250V BFOU(i), 250V BFOU/B(i) Individual Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	mm	Ω/km	M.Ω/km	kg/km
1P x 0.75	0.6	8.1 ± 0.4	12.0 ± 1.0	26.3	1,170	230
2P x 0.75	0.6	12.6 ± 0.6	17.3 ± 1.2	26.3	1,170	430
3P x 0.75	0.6	13.4 ± 0.7	18.2 ± 1.2	26.3	1,170	500
4P x 0.75	0.6	14.7 ± 0.7	19.6 ± 1.3	26.3	1,170	580
7P x 0.75	0.6	17.1 ± 0.9	22.2 ± 1.4	26.3	1,170	790
8P x 0.75	0.6	18.9 ± 0.9	24.2 ± 1.5	26.3	1,170	890
10P x 0.75	0.6	21.6 ± 1.1	27.1 ± 1.6	26.3	1,170	1,060
12P x 0.75	0.6	22.5 ± 1.1	28.1 ± 1.6	26.3	1,170	1,180
14P x 0.75	0.6	23.7 ± 1.2	29.4 ± 1.7	26.3	1,170	1,310
16P x 0.75	0.6	25.5 ± 1.3	31.3 ± 1.8	26.3	1,170	1,460
19P x 0.75	0.6	26.1 ± 1.3	32.0 ± 1.8	26.3	1,170	1,620
24P x 0.75	0.6	31.0 ± 1.6	37.9 ± 2.0	26.3	1,170	2,180
32P x 0.75	0.6	33.7 ± 1.7	40.8 ± 2.1	26.3	1,170	2,650
1P x 1.0	0.6	8.5 ± 0.4	12.4 ± 1.0	19.3	1,050	250
2P x 1.0	0.6	13.3 ± 0.7	18.0 ± 1.2	19.3	1,050	460
3P x 1.0	0.6	14.1 ± 0.7	18.9 ± 1.3	19.3	1,050	540
4P x 1.0	0.6	15.5 ± 0.8	20.4 ± 1.3	19.3	1,050	640
7P x 1.0	0.6	18.1 ± 0.9	23.2 ± 1.4	19.3	1,050	880
8P x 1.0	0.6	20.0 ± 1.0	25.3 ± 1.5	19.3	1,050	1,000
10P x 1.0	0.6	22.9 ± 1.1	28.4 ± 1.6	19.3	1,050	1,200
12P x 1.0	0.6	23.9 ± 1.2	29.5 ± 1.7	19.3	1,050	1,340
14P x 1.0	0.6	25.1 ± 1.3	30.8 ± 1.7	19.3	1,050	1,490
16P x 1.0	0.6	27.1 ± 1.4	32.9 ± 1.8	19.3	1,050	1,660
19P x 1.0	0.6	27.7 ± 1.4	33.6 ± 1.8	19.3	1,050	1,850
24P x 1.0	0.6	32.9 ± 1.6	39.8 ± 2.1	19.3	1,050	2,480
32P x 1.0	0.6	35.8 ± 1.8	42.9 ± 2.2	19.3	1,050	3,040
1P x 1.5	0.7	9.5 ± 0.5	13.5 ± 1.0	12.9	1,010	290
2P x 1.5	0.7	15.1 ± 0.8	20.0 ± 1.3	12.9	1,010	560
3P x 1.5	0.7	16.0 ± 0.8	21.0 ± 1.3	12.9	1,010	670
4P x 1.5	0.7	17.6 ± 0.9	22.7 ± 1.4	12.9	1,010	790
7P x 1.5	0.7	20.6 ± 1.0	25.9 ± 1.5	12.9	1,010	1,120
8P x 1.5	0.7	22.8 ± 1.1	28.4 ± 1.6	12.9	1,010	1,280
10P x 1.5	0.7	26.2 ± 1.3	32.0 ± 1.8	12.9	1,010	1,540
12P x 1.5	0.7	27.3 ± 1.4	33.2 ± 1.8	12.9	1,010	1,730
14P x 1.5	0.7	29.1 ± 1.5	35.1 ± 1.9	12.9	1,010	1,980
16P x 1.5	0.7	31.4 ± 1.6	37.6 ± 2.0	12.9	1,010	2,220
19P x 1.5	0.7	32.1 ± 1.6	38.9 ± 2.1	12.9	1,010	2,600
24P x 1.5	0.7	37.7 ± 1.9	45.0 ± 2.3	12.9	1,010	3,240
32P x 1.5	0.7	41.4 ± 2.1	49.0 ± 2.5	12.9	1,010	4,070
1T x 0.75	0.6	8.6 ± 0.4	12.5 ± 1.0	26.3	1,170	240
2T x 0.75	0.6	14.5 ± 0.7	19.4 ± 1.3	26.3	1,170	490
3T x 0.75	0.6	15.4 ± 0.8	20.3 ± 1.3	26.3	1,170	570
4T x 0.75	0.6	16.9 ± 0.8	21.9 ± 1.4	26.3	1,170	680
7T x 0.75	0.6	20.4 ± 1.0	25.7 ± 1.5	26.3	1,170	960
8T x 0.75	0.6	22.2 ± 1.1	27.7 ± 1.6	26.3	1,170	1,080
10T x 0.75	0.6	26.3 ± 1.3	32.0 ± 1.8	26.3	1,170	1,330

Cable Type 250V BFOU(i), 250V BFOU/B(i) Individual Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	mm	Ω/km	M Ω/km	kg/km
12T x 0.75	0.6	27.2 ± 1.4	33.0 ± 1.8	26.3	1,170	1,480
14T x 0.75	0.6	28.7 ± 1.4	34.6 ± 1.9	26.3	1,170	1,650
16T x 0.75	0.6	30.8 ± 1.5	36.9 ± 2.0	26.3	1,170	1,880
19T x 0.75	0.6	32.6 ± 1.6	38.8 ± 2.1	26.3	1,170	2,120
24T x 0.75	0.6	36.2 ± 1.8	43.4 ± 2.2	26.3	1,170	2,700
32T x 0.75	0.6	42.1 ± 2.1	49.6 ± 2.5	26.3	1,170	3,470
1T x 1.0	0.6	9.0 ± 0.5	12.9 ± 1.0	19.3	1,050	260
2T x 1.0	0.6	15.3 ± 0.8	20.2 ± 1.3	19.3	1,050	530
3T x 1.0	0.6	16.2 ± 0.8	21.1 ± 1.3	19.3	1,050	630
4T x 1.0	0.6	17.9 ± 0.9	22.9 ± 1.4	19.3	1,050	740
7T x 1.0	0.6	21.5 ± 1.1	26.8 ± 1.6	19.3	1,050	1,070
8T x 1.0	0.6	23.4 ± 1.2	28.9 ± 1.7	19.3	1,050	1,200
10T x 1.0	0.6	27.8 ± 1.4	33.5 ± 1.8	19.3	1,050	1,470
12T x 1.0	0.6	28.7 ± 1.4	34.5 ± 1.9	19.3	1,050	1,650
14T x 1.0	0.6	30.4 ± 1.5	36.3 ± 2.0	19.3	1,050	1,850
16T x 1.0	0.6	32.6 ± 1.6	38.7 ± 2.0	19.3	1,050	2,100
19T x 1.0	0.6	34.4 ± 1.7	40.6 ± 2.1	19.3	1,050	2,380
24T x 1.0	0.6	38.3 ± 1.9	45.5 ± 2.3	19.3	1,050	3,030
32T x 1.0	0.6	44.5 ± 2.2	52.0 ± 2.6	19.3	1,050	3,890
1T x 1.5	0.7	10.1 ± 0.5	14.1 ± 1.1	12.9	1,010	310
2T x 1.5	0.7	17.4 ± 0.9	22.4 ± 1.4	12.9	1,010	640
3T x 1.5	0.7	18.5 ± 0.9	23.6 ± 1.4	12.9	1,010	770
4T x 1.5	0.7	20.4 ± 1.0	25.6 ± 1.5	12.9	1,010	920
7T x 1.5	0.7	24.6 ± 1.2	30.1 ± 1.7	12.9	1,010	1,340
8T x 1.5	0.7	26.8 ± 1.3	32.6 ± 1.8	12.9	1,010	1,520
10T x 1.5	0.7	32.3 ± 1.6	38.4 ± 2.0	12.9	1,010	1,920
12T x 1.5	0.7	33.4 ± 1.7	39.6 ± 2.1	12.9	1,010	2,150
14T x 1.5	0.7	35.3 ± 1.8	42.1 ± 2.2	12.9	1,010	2,530
16T x 1.5	0.7	37.4 ± 1.9	44.4 ± 2.3	12.9	1,010	2,810
19T x 1.5	0.7	39.5 ± 2.0	46.6 ± 2.4	12.9	1,010	3,180
24T x 1.5	0.7	44.4 ± 2.2	52.1 ± 2.6	12.9	1,010	3,950
32T x 1.5	0.7	51.2 ± 2.6	59.3 ± 2.9	12.9	1,010	5,040
1P x 2.5	0.7	10.3 ± 0.5	14.3 ± 1.1	8.02	840	340
2P x 2.5	0.7	16.5 ± 0.8	21.5 ± 1.4	8.02	840	670
3P x 2.5	0.7	17.5 ± 0.9	22.6 ± 1.4	8.02	840	810
4P x 2.5	0.7	19.3 ± 1.0	24.5 ± 1.5	8.02	840	980
7P x 2.5	0.7	22.6 ± 1.1	28.1 ± 1.6	8.02	840	1,420
8P x 2.5	0.7	25.1 ± 1.3	30.8 ± 1.7	8.02	840	1,610
10P x 2.5	0.7	29.2 ± 1.5	35.3 ± 1.9	8.02	840	2,010
12P x 2.5	0.7	30.4 ± 1.5	36.5 ± 2.0	8.02	840	2,260
14P x 2.5	0.7	32.0 ± 1.6	38.8 ± 2.1	8.02	840	2,670
16P x 2.5	0.7	34.5 ± 1.7	41.5 ± 2.2	8.02	840	3,000
19P x 2.5	0.7	35.3 ± 1.8	42.4 ± 2.2	8.02	840	3,370
24P x 2.5	0.7	41.9 ± 2.1	49.6 ± 2.5	8.02	840	4,270
32P x 2.5	0.7	45.5 ± 2.3	53.5 ± 2.6	8.02	840	5,330



Instrumentation & Communication Cable

250V BFOU(c), BFOU/B(c)

Halogen Free Fire Resistant Cable Collective Screen

- 250V BFOU(c) NEK 606 Type : S4

Halogen Free & Mud Resistant Fire Resistant Cable Collective Screen

- 250V BFOU/B(c) NEK 606 Type : S4/S8

Application

- Fixed installation instrumentation, communication, control and alarm system in both explosion and safe areas.
- For installation in areas exposed to MUD and drilling/cleaning fluids we recommend BFOU/B(c)

Standards applied

- IEC 60092-376 : Design guideline
- NEK 606(2004)
- IEC 60331 : Fire resistance
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties

Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire.
Insulation	B	Mica / Glass tape + EP-Rubber
Twisting		Color coded cores twisted together to form a pair / triad
Collective Screen	(c)	Pairs / triads are laid up and collectively screened by copper (or aluminum) backed polyester tape with tinned copper drain wire. Pairs / triads are identified by printed numbers on insulation.
Inner Covering	F	Flame retardant halogen free compound.
Armour	O	Tinned copper wire braid (*)
Sheath	U U/B	Flame retardant halogen free thermoset compound(SHF2) Flame retardant halogen free & mud resistant thermoset compound(SHF MUD)
Color		Non-intrinsically safe cable : Grey Intrinsically safe cable : Blue

(*) BFCU(i), BFCU/B(i) = with galvanized steel wire braid
• Cables to 1000°C with an upgraded IEC 60331 test.

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data



Instrumentation & Communication Cable

250V BFOU(i&c), BFOU/B(i&c)

Halogen Free Fire Resistant Cable Individual & Collective Screen

- 250V BFOU(i&c)

Halogen Free & Mud Resistant Fire Resistant Cable Individual & Collective Screen

- 250V BFOU/B(i&c)

Application

- Fixed installation instrumentation, communication, control and alarm emergency and critical system in both explosion risk and safe areas.
- For installation in areas exposed to MUD and drilling/cleaning fluids we recommend BFOU/B(i&c)

Standards applied

- IEC 60092-376 : Design guideline
- NEK 606(2004)
- IEC 60331 : Fire resistance
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)



Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire.
Insulation	B	Mica / Glass tape + EP-Rubber
Twisting		Color coded cores twisted together to form a pair/ triad
Individual Screen	(i)	Each pair / triad are individually screened by copper (or aluminum) backed polyester tape with tinned copper drain wire. Pairs / triads are identified by numbered tape and printed numbers on insulation.
Collective Screen	(c)	Individually screened pairs / triads are laid up and collectively screened by copper (or aluminum) backed polyester tape with tinned copper drain wire.
Inner Covering	F	Flame retardant halogen free compound.
Armour	O	Tinned copper wire braid (*)
Sheath	U U/B	Flame retardant halogen free thermoset compound(SHF2) Flame retardant halogen free & mud resistant thermoset compound(SHF MUD)
Color		Non-intrinsically safe cable : Grey Intrinsically safe cable : Blue

(*) BFCU(i&c) , BFCU/B(i&c) = with galvanized steel wire braid
 • Cables to 1000°C with an upgraded IEC 60331 test.

Cable Type 250V BFOU(i&c) & 250V BFOU/B(i&c) Individual & Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	mm	Ω/km	M.Ω/km	kg/km
1P x 0.75	0.6	8.1 ± 0.4	12.0 ± 1.0	26.3	1,170	230
2P x 0.75	0.6	12.8 ± 0.6	17.5 ± 1.2	26.3	1,170	450
3P x 0.75	0.6	13.6 ± 0.7	18.4 ± 1.2	26.3	1,170	520
4P x 0.75	0.6	14.9 ± 0.7	19.8 ± 1.3	26.3	1,170	600
5P x 0.75	0.6	16.7 ± 0.8	21.7 ± 1.4	26.3	1,170	700
7P x 0.75	0.6	17.3 ± 0.9	22.4 ± 1.4	26.3	1,170	810
8P x 0.75	0.6	19.1 ± 1.0	24.4 ± 1.5	26.3	1,170	920
10P x 0.75	0.6	21.8 ± 1.1	27.3 ± 1.6	26.3	1,170	1,090
12P x 0.75	0.6	22.7 ± 1.1	28.3 ± 1.6	26.3	1,170	1,220
14P x 0.75	0.6	23.9 ± 1.2	29.6 ± 1.7	26.3	1,170	1,350
16P x 0.75	0.6	25.7 ± 1.3	31.5 ± 1.8	26.3	1,170	1,500
19P x 0.75	0.6	26.3 ± 1.3	32.2 ± 1.8	26.3	1,170	1,660
24P x 0.75	0.6	31.2 ± 1.6	38.1 ± 2.0	26.3	1,170	2,220
32P x 0.75	0.6	33.9 ± 1.7	41.0 ± 2.1	26.3	1,170	2,690
1P x 1.0	0.6	8.5 ± 0.4	12.4 ± 1.0	19.3	1,050	260
2P x 1.0	0.6	13.5 ± 0.7	18.2 ± 1.2	19.3	1,050	500
3P x 1.0	0.6	14.3 ± 0.7	19.1 ± 1.3	19.3	1,050	580
4P x 1.0	0.6	15.7 ± 0.8	20.6 ± 1.3	19.3	1,050	670
7P x 1.0	0.6	18.3 ± 0.9	23.4 ± 1.4	19.3	1,050	920
8P x 1.0	0.6	20.2 ± 1.0	25.5 ± 1.5	19.3	1,050	1,040
10P x 1.0	0.6	23.1 ± 1.2	28.6 ± 1.6	19.3	1,050	1,240
12P x 1.0	0.6	24.1 ± 1.2	29.7 ± 1.7	19.3	1,050	1,390
14P x 1.0	0.6	25.3 ± 1.3	31.0 ± 1.7	19.3	1,050	1,540
16P x 1.0	0.6	27.3 ± 1.4	33.1 ± 1.8	19.3	1,050	1,720
19P x 1.0	0.6	27.9 ± 1.4	33.8 ± 1.9	19.3	1,050	1,910
24P x 1.0	0.6	33.1 ± 1.7	40.0 ± 2.1	19.3	1,050	2,540
32P x 1.0	0.6	36.0 ± 1.8	43.1 ± 2.2	19.3	1,050	3,100
1P x 1.5	0.7	9.5 ± 0.5	13.5 ± 1.0	12.9	1,010	310
2P x 1.5	0.7	15.3 ± 0.8	20.2 ± 1.3	12.9	1,010	600
3P x 1.5	0.7	16.2 ± 0.8	21.2 ± 1.3	12.9	1,010	700
4P x 1.5	0.7	17.8 ± 0.9	22.9 ± 1.4	12.9	1,010	830
7P x 1.5	0.7	20.8 ± 1.0	26.1 ± 1.5	12.9	1,010	1,160
8P x 1.5	0.7	23.0 ± 1.2	28.6 ± 1.6	12.9	1,010	1,320
10P x 1.5	0.7	26.4 ± 1.3	32.2 ± 1.8	12.9	1,010	1,580
12P x 1.5	0.7	27.5 ± 1.4	33.4 ± 1.8	12.9	1,010	1,780
14P x 1.5	0.7	29.3 ± 1.5	35.3 ± 1.9	12.9	1,010	2,020
16P x 1.5	0.7	31.6 ± 1.6	37.8 ± 2.0	12.9	1,010	2,270
19P x 1.5	0.7	32.3 ± 1.6	39.1 ± 2.1	12.9	1,010	2,650
24P x 1.5	0.7	37.9 ± 1.9	45.2 ± 2.3	12.9	1,010	3,290
32P x 1.5	0.7	41.6 ± 2.1	49.2 ± 2.5	12.9	1,010	4,120
1T x 0.75	0.6	8.6 ± 0.4	12.5 ± 1.0	26.3	1,170	240
2T x 0.75	0.6	14.7 ± 0.7	19.6 ± 1.3	26.3	1,170	520
3T x 0.75	0.6	15.6 ± 0.8	20.5 ± 1.3	26.3	1,170	600
4T x 0.75	0.6	17.1 ± 0.9	22.1 ± 1.4	26.3	1,170	700
7T x 0.75	0.6	20.6 ± 1.0	25.9 ± 1.5	26.3	1,170	1,000
8T x 0.75	0.6	22.4 ± 1.1	27.9 ± 1.6	26.3	1,170	1,120

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 250V BFOU(i&c) & 250V BFOU/B(i&c) Individual & Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Diameter over Inner Covering	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	mm	Ω/km	M Ω/km	kg/km
10T x 0.75	0.6	26.5 ± 1.3	32.2 ± 1.8	26.3	1,170	1,360
12T x 0.75	0.6	27.4 ± 1.4	33.2 ± 1.8	26.3	1,170	1,520
14T x 0.75	0.6	28.9 ± 1.4	34.8 ± 1.9	26.3	1,170	1,690
16T x 0.75	0.6	31.0 ± 1.6	37.1 ± 2.0	26.3	1,170	1,920
19T x 0.75	0.6	32.8 ± 1.6	39.0 ± 2.1	26.3	1,170	2,170
24T x 0.75	0.6	36.4 ± 1.8	43.6 ± 2.2	26.3	1,170	2,750
32T x 0.75	0.6	42.3 ± 2.1	49.8 ± 2.5	26.3	1,170	3,520
1T x 1.0	0.6	9.0 ± 0.5	12.9 ± 1.0	19.3	1,050	270
2T x 1.0	0.6	15.5 ± 0.8	20.4 ± 1.3	19.3	1,050	590
3T x 1.0	0.6	16.4 ± 0.8	21.3 ± 1.4	19.3	1,050	680
4T x 1.0	0.6	18.1 ± 0.9	23.1 ± 1.4	19.3	1,050	800
7T x 1.0	0.6	21.7 ± 1.1	27.0 ± 1.6	19.3	1,050	1,130
8T x 1.0	0.6	23.6 ± 1.2	29.1 ± 1.7	19.3	1,050	1,270
10T x 1.0	0.6	28.0 ± 1.4	33.7 ± 1.8	19.3	1,050	1,560
12T x 1.0	0.6	28.9 ± 1.4	34.7 ± 1.9	19.3	1,050	1,730
14T x 1.0	0.6	30.6 ± 1.5	36.5 ± 2.0	19.3	1,050	1,930
16T x 1.0	0.6	32.8 ± 1.6	38.9 ± 2.1	19.3	1,050	2,200
19T x 1.0	0.6	34.6 ± 1.7	40.8 ± 2.1	19.3	1,050	2,480
24T x 1.0	0.6	38.5 ± 1.9	45.7 ± 2.3	19.3	1,050	3,150
32T x 1.0	0.6	44.7 ± 2.2	52.2 ± 2.6	19.3	1,050	4,030
1T x 1.5	0.7	10.1 ± 0.5	14.1 ± 1.1	12.9	1,010	310
2T x 1.5	0.7	17.6 ± 0.9	22.6 ± 1.4	12.9	1,010	670
3T x 1.5	0.7	18.7 ± 0.9	23.8 ± 1.5	12.9	1,010	800
4T x 1.5	0.7	20.6 ± 1.0	25.8 ± 1.5	12.9	1,010	950
7T x 1.5	0.7	24.8 ± 1.2	30.3 ± 1.7	12.9	1,010	1,370
8T x 1.5	0.7	27.0 ± 1.4	32.8 ± 1.8	12.9	1,010	1,550
10T x 1.5	0.7	32.5 ± 1.6	38.6 ± 2.0	12.9	1,010	1,960
12T x 1.5	0.7	33.6 ± 1.7	39.8 ± 2.1	12.9	1,010	2,200
14T x 1.5	0.7	35.5 ± 1.8	42.3 ± 2.2	12.9	1,010	2,570
16T x 1.5	0.7	37.6 ± 1.9	44.6 ± 2.3	12.9	1,010	2,860
19T x 1.5	0.7	39.7 ± 2.0	46.8 ± 2.4	12.9	1,010	3,230
24T x 1.5	0.7	44.6 ± 2.2	52.3 ± 2.6	12.9	1,010	4,010
32T x 1.5	0.7	51.4 ± 2.6	59.5 ± 2.9	12.9	1,010	5,100
1P x 2.5	0.7	10.3 ± 0.5	14.3 ± 1.1	8.02	840	370
2P x 2.5	0.7	16.7 ± 0.8	21.7 ± 1.4	8.02	840	710
3P x 2.5	0.7	17.7 ± 0.9	22.8 ± 1.4	8.02	840	860
4P x 2.5	0.7	19.5 ± 1.0	24.7 ± 1.5	8.02	840	1,020
7P x 2.5	0.7	22.8 ± 1.1	28.3 ± 1.6	8.02	840	1,460
8P x 2.5	0.7	25.3 ± 1.3	31.0 ± 1.7	8.02	840	1,660
10P x 2.5	0.7	29.4 ± 1.5	35.5 ± 1.9	8.02	840	2,060
12P x 2.5	0.7	30.6 ± 1.5	36.7 ± 2.0	8.02	840	2,320
14P x 2.5	0.7	32.2 ± 1.6	39.0 ± 2.1	8.02	840	2,730
16P x 2.5	0.7	34.7 ± 1.7	41.7 ± 2.2	8.02	840	3,060
19P x 2.5	0.7	35.5 ± 1.8	42.6 ± 2.2	8.02	840	3,430
24P x 2.5	0.7	42.1 ± 2.1	49.8 ± 2.5	8.02	840	4,340
32P x 2.5	0.7	45.7 ± 2.3	53.7 ± 2.6	8.02	840	5,400



Instrumentation & Communication Cable

250V RU(i), RU/B(i)

Halogen Free Flame retardant Unarmoured cable Individual screen

- 250V RU(i) NEK 606 Type : S11

Halogen Free & Mud Resistant Flame retardant Unarmoured cable Individual screen

- 250V RU/B(i)

Application

- Unarmoured Cable Fixed installation for instrument at Communication, control system, general purposes

Standards applied

- IEC 60092-376 : Design guidelines
- NEK 606(2004)
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)

Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire.
Conductor Screen	R	EP-Rubber
Insulation		Color coded cores twisted together to form a pair / triad
Insulation Screen	(i)	Each pair / triad are individually screened by copper (or aluminum) backed polyester tape with tinned copper drain wire. Pairs / triads are identified by numbered tape and printed numbers on insulation.
Sheath	U U/B	Flame retardant halogen free thermoset compound Flame retardant halogen free & mud resistant thermoset compound
Color		Non-intrinsically safe cable : Grey Intrinsically safe cable : Blue

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 250V RU(i) & 250V RU/B(i) Unarmoured Individual Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km
1P x 0.75	0.6	7.7 ± 0.8	26.3	1,170	90
2P x 0.75	0.6	11.8 ± 1.0	26.3	1,170	160
3P x 0.75	0.6	12.5 ± 1.0	26.3	1,170	210
4P x 0.75	0.6	13.7 ± 1.0	26.3	1,170	260
7P x 0.75	0.6	16.0 ± 1.1	26.3	1,170	410
8P x 0.75	0.6	17.6 ± 1.2	26.3	1,170	470
10P x 0.75	0.6	20.1 ± 1.3	26.3	1,170	580
12P x 0.75	0.6	20.9 ± 1.3	26.3	1,170	670
14P x 0.75	0.6	22.0 ± 1.4	26.3	1,170	770
16P x 0.75	0.6	23.6 ± 1.4	26.3	1,170	870
19P x 0.75	0.6	24.2 ± 1.5	26.3	1,170	1,000
24P x 0.75	0.6	28.4 ± 1.6	26.3	1,170	1,280
32P x 0.75	0.6	30.9 ± 1.7	26.3	1,170	1,650
1P x 1.0	0.6	8.1 ± 0.8	19.3	1,050	100
2P x 1.0	0.6	12.5 ± 1.0	19.3	1,050	190
3P x 1.0	0.6	13.2 ± 1.0	19.3	1,050	240
4P x 1.0	0.6	14.6 ± 1.1	19.3	1,050	310
7P x 1.0	0.6	17.0 ± 1.2	19.3	1,050	490
8P x 1.0	0.6	18.7 ± 1.2	19.3	1,050	550
10P x 1.0	0.6	21.4 ± 1.4	19.3	1,050	690
12P x 1.0	0.6	22.3 ± 1.4	19.3	1,050	800
14P x 1.0	0.6	23.4 ± 1.4	19.3	1,050	910
16P x 1.0	0.6	25.2 ± 1.5	19.3	1,050	1,040
19P x 1.0	0.6	25.8 ± 1.5	19.3	1,050	1,200
24P x 1.0	0.6	30.3 ± 1.7	19.3	1,050	1,530
32P x 1.0	0.6	33.0 ± 1.8	19.3	1,050	1,980
1P x 1.5	0.7	9.2 ± 0.9	12.9	1,010	130
2P x 1.5	0.7	14.4 ± 1.1	12.9	1,010	400
3P x 1.5	0.7	15.3 ± 1.1	12.9	1,010	660
4P x 1.5	0.7	16.9 ± 1.2	12.9	1,010	970
7P x 1.5	0.7	19.7 ± 1.3	12.9	1,010	1,960
8P x 1.5	0.7	21.8 ± 1.4	12.9	1,010	2,450
10P x 1.5	0.7	24.9 ± 1.5	12.9	1,010	3,180
12P x 1.5	0.7	26.0 ± 1.5	12.9	1,010	3,740
14P x 1.5	0.7	27.4 ± 1.6	12.9	1,010	4,370
16P x 1.5	0.7	29.5 ± 1.7	12.9	1,010	5,140
19P x 1.5	0.7	30.2 ± 1.7	12.9	1,010	5,800
24P x 1.5	0.7	35.5 ± 1.9	12.9	1,010	7,840
32P x 1.5	0.7	38.7 ± 2.0	12.9	1,010	9,460
1T x 0.75	0.6	8.3 ± 0.8	26.3	1,170	110
2T x 0.75	0.6	13.5 ± 1.0	26.3	1,170	210

Cable Type 250V RU(i) & 250V RU/B(i) Unarmoured Individual Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km
3T x 0.75	0.6	14.3 ± 1.1	26.3	1,170	270
4T x 0.75	0.6	15.7 ± 1.1	26.3	1,170	340
7T x 0.75	0.6	18.8 ± 1.3	26.3	1,170	540
8T x 0.75	0.6	20.5 ± 1.3	26.3	1,170	620
10T x 0.75	0.6	24.2 ± 1.5	26.3	1,170	770
12T x 0.75	0.6	25.0 ± 1.5	26.3	1,170	900
14T x 0.75	0.6	26.4 ± 1.6	26.3	1,170	1,030
16T x 0.75	0.6	28.0 ± 1.6	26.3	1,170	1,160
19T x 0.75	0.6	29.6 ± 1.7	26.3	1,170	1,350
24T x 0.75	0.6	33.0 ± 1.8	26.3	1,170	1,690
32T x 0.75	0.6	37.9 ± 2.0	26.3	1,170	2,210
1T x 1.0	0.6	8.7 ± 0.8	19.3	1,050	120
2T x 1.0	0.6	14.3 ± 1.1	19.3	1,050	240
3T x 1.0	0.6	15.1 ± 1.1	19.3	1,050	310
4T x 1.0	0.6	16.6 ± 1.2	19.3	1,050	400
7T x 1.0	0.6	19.9 ± 1.3	19.3	1,050	640
8T x 1.0	0.6	21.7 ± 1.4	19.3	1,050	730
10T x 1.0	0.6	25.7 ± 1.5	19.3	1,050	910
12T x 1.0	0.6	26.6 ± 1.6	19.3	1,050	1,070
14T x 1.0	0.6	28.1 ± 1.6	19.3	1,050	1,220
16T x 1.0	0.6	29.7 ± 1.7	19.3	1,050	1,380
19T x 1.0	0.6	31.4 ± 1.8	19.3	1,050	1,610
24T x 1.0	0.6	35.1 ± 1.9	19.3	1,050	2,030
32T x 1.0	0.6	40.3 ± 2.1	19.3	1,050	2,660
1T x 1.5	0.7	9.6 ± 0.9	12.9	1,010	160
2T x 1.5	0.7	16.3 ± 1.2	12.9	1,010	320
3T x 1.5	0.7	17.3 ± 1.2	12.9	1,010	430
4T x 1.5	0.7	19.1 ± 1.3	12.9	1,010	550
7T x 1.5	0.7	23.0 ± 1.4	12.9	1,010	890
8T x 1.5	0.7	25.1 ± 1.5	12.9	1,010	1,020
10T x 1.5	0.7	29.7 ± 1.7	12.9	1,010	1,270
12T x 1.5	0.7	30.7 ± 1.7	12.9	1,010	1,490
14T x 1.5	0.7	32.5 ± 1.8	12.9	1,010	1,710
16T x 1.5	0.7	34.4 ± 1.9	12.9	1,010	1,940
19T x 1.5	0.7	36.4 ± 2.0	12.9	1,010	2,270
24T x 1.5	0.7	40.7 ± 2.1	12.9	1,010	2,860
32T x 1.5	0.7	46.8 ± 2.4	12.9	1,010	3,760

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data



Instrumentation & Communication Cable

250V RU(c), RU/B(c)

Halogen Free Flame Retardant Unarmoured Cable Collective Screen

- 250V RU(c)

Halogen Free & Mud Resistant Flame Retardant Unarmoured Cable Collective Screen

- 250V RU/B(c)

Application

- Unarmoured Cable Fixed installation for instrument at Communication, control system, general purposes

Standards applied

- IEC 60092-338 : Design guidelines
- NEK 606(2004)
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)



Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Insulation	R	EP-Rubber
Twisting		Color coded cores twisted together to form a pair / triad.
Collective Screen	(c)	Pairs / triads are laid up and collectively screened by copper(or aluminum) backed polyester tape with tinned copper drain wire. Pairs / triads are identified by printed numbers on insulation.
Sheath	U U/B	Flame retardant halogen free thermoset compound Flame retardant halogen free & mud resistant thermoset compound
Color		Non-intrinsically safe cable : Grey Intrinsically safe cable : Blue

Cable Type 250V RU(c) & 250V RU/B(c) Unarmoured Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km
1P x 0.75	0.6	7.8 ± 0.8	26.3	1,170	90
2P x 0.75	0.6	8.6 ± 0.8	26.3	1,170	120
3P x 0.75	0.6	12.0 ± 1.0	26.3	1,170	180
4P x 0.75	0.6	13.2 ± 1.0	26.3	1,170	220
7P x 0.75	0.6	15.3 ± 1.1	26.3	1,170	330
8P x 0.75	0.6	16.8 ± 1.2	26.3	1,170	370
10P x 0.75	0.6	19.0 ± 1.3	26.3	1,170	450
12P x 0.75	0.6	19.5 ± 1.3	26.3	1,170	520
14P x 0.75	0.6	20.5 ± 1.3	26.3	1,170	580
16P x 0.75	0.6	21.6 ± 1.4	26.3	1,170	660
19P x 0.75	0.6	22.6 ± 1.4	26.3	1,170	750
24P x 0.75	0.6	26.5 ± 1.6	26.3	1,170	950
32P x 0.75	0.6	28.9 ± 1.7	26.3	1,170	1,210
1P x 1.0	0.6	8.2 ± 0.8	19.3	1,050	100
2P x 1.0	0.6	9.1 ± 0.9	19.3	1,050	140
3P x 1.0	0.6	12.8 ± 1.0	19.3	1,050	210
4P x 1.0	0.6	14.0 ± 1.1	19.3	1,050	250
7P x 1.0	0.6	16.3 ± 1.2	19.3	1,050	380
8P x 1.0	0.6	18.0 ± 1.2	19.3	1,050	440
10P x 1.0	0.6	20.2 ± 1.3	19.3	1,050	530
12P x 1.0	0.6	20.9 ± 1.3	19.3	1,050	610
14P x 1.0	0.6	21.9 ± 1.4	19.3	1,050	690
16P x 1.0	0.6	23.0 ± 1.4	19.3	1,050	780
19P x 1.0	0.6	24.2 ± 1.5	19.3	1,050	900
24P x 1.0	0.6	28.4 ± 1.6	19.3	1,050	1,130
32P x 1.0	0.6	30.9 ± 1.7	19.3	1,050	1,450
1P x 1.5	0.7	9.0 ± 0.9	12.9	1,010	130
2P x 1.5	0.7	10.4 ± 0.9	12.9	1,010	190
3P x 1.5	0.7	14.9 ± 1.1	12.9	1,010	280
4P x 1.5	0.7	16.3 ± 1.2	12.9	1,010	350
7P x 1.5	0.7	19.0 ± 1.3	12.9	1,010	530
8P x 1.5	0.7	21.1 ± 1.3	12.9	1,010	610
10P x 1.5	0.7	23.7 ± 1.4	12.9	1,010	750
12P x 1.5	0.7	24.4 ± 1.5	12.9	1,010	850
14P x 1.5	0.7	25.7 ± 1.5	12.9	1,010	970
16P x 1.5	0.7	27.0 ± 1.6	12.9	1,010	1,090
19P x 1.5	0.7	28.4 ± 1.6	12.9	1,010	1,270
24P x 1.5	0.7	33.4 ± 1.8	12.9	1,010	1,600
32P x 1.5	0.7	36.5 ± 2.0	12.9	1,010	2,070
1T x 0.75	0.6	8.2 ± 0.8	26.3	1,170	110
2T x 0.75	0.6	13.0 ± 1.0	26.3	1,170	190

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 250V RU(c) & 250V RU/B(c) Unarmoured Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km
3T x 0.75	0.6	13.8 ± 1.1	26.3	1,170	240
4T x 0.75	0.6	15.1 ± 1.1	26.3	1,170	290
7T x 0.75	0.6	18.0 ± 1.2	26.3	1,170	450
8T x 0.75	0.6	19.7 ± 1.3	26.3	1,170	520
10T x 0.75	0.6	23.2 ± 1.4	26.3	1,170	640
12T x 0.75	0.6	23.9 ± 1.5	26.3	1,170	730
14T x 0.75	0.6	25.2 ± 1.5	26.3	1,170	840
16T x 0.75	0.6	26.7 ± 1.6	26.3	1,170	940
19T x 0.75	0.6	28.2 ± 1.6	26.3	1,170	1,090
24T x 0.75	0.6	31.5 ± 1.8	26.3	1,170	1,360
32T x 0.75	0.6	36.1 ± 1.9	26.3	1,170	1,770
1T x 1.0	0.6	8.6 ± 0.8	19.3	1,050	120
2T x 1.0	0.6	13.8 ± 1.1	19.3	1,050	220
3T x 1.0	0.6	14.7 ± 1.1	19.3	1,050	280
4T x 1.0	0.6	16.0 ± 1.1	19.3	1,050	340
7T x 1.0	0.6	19.2 ± 1.3	19.3	1,050	530
8T x 1.0	0.6	20.9 ± 1.3	19.3	1,050	610
10T x 1.0	0.6	24.6 ± 1.5	19.3	1,050	760
12T x 1.0	0.6	25.4 ± 1.5	19.3	1,050	870
14T x 1.0	0.6	26.8 ± 1.6	19.3	1,050	990
16T x 1.0	0.6	28.4 ± 1.6	19.3	1,050	1,120
19T x 1.0	0.6	30.0 ± 1.7	19.3	1,050	1,300
24T x 1.0	0.6	33.5 ± 1.8	19.3	1,050	1,630
32T x 1.0	0.6	38.5 ± 2.0	19.3	1,050	2,120
1T x 1.5	0.7	9.6 ± 0.9	12.9	1,010	160
2T x 1.5	0.7	16.0 ± 1.1	12.9	1,010	290
3T x 1.5	0.7	17.0 ± 1.2	12.9	1,010	380
4T x 1.5	0.7	18.7 ± 1.2	12.9	1,010	470
7T x 1.5	0.7	22.6 ± 1.4	12.9	1,010	750
8T x 1.5	0.7	24.5 ± 1.5	12.9	1,010	850
10T x 1.5	0.7	29.0 ± 1.7	12.9	1,010	1,060
12T x 1.5	0.7	30.0 ± 1.7	12.9	1,010	1,230
14T x 1.5	0.7	31.7 ± 1.8	12.9	1,010	1,400
16T x 1.5	0.7	33.6 ± 1.8	12.9	1,010	1,590
19T x 1.5	0.7	35.5 ± 1.9	12.9	1,010	1,850
24T x 1.5	0.7	39.6 ± 2.1	12.9	1,010	2,310
32T x 1.5	0.7	45.6 ± 2.3	12.9	1,010	3,020



Instrumentation & Communication Cable

250V RU(i&c), RU/B(i&c)

Halogen Free Flame Retardant Unarmoured Cable Individual & Collective Screen

- 250V RU(i&c)

Halogen Free and MUD Resistant Flame Retardant Unarmoured Cables Individual & Collective Screen

- 250V RU/B(i&c)

Application

- Unarmoured Cable Fixed installation for instrume instrument at Communication, control system, general purposes

Standards applied

- IEC 60092-376 : Design guidelines
- NEK 606(2004)
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)



Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Insulation	R	EP-Rubber
Twisting		Color coded cores twisted together to form a pair / triad
Individual Screen	(i)	Each pair / triad are individually screened by copper (or aluminum) backed polyester tape with tinned copper drain wire. Pairs / triads are identified by numbered tape and printed numbers on insulation.
Collective Screen	(c)	Individually screened pairs / triads are laid up and collectively screened by copper (or aluminum) backed polyester tape with tinned copper drain wire.
Sheath	U U/B	Flame retardant halogen free thermoset compound Flame retardant halogen free & mud resistant thermoset compound
Color		Non-intrinsically safe cable : Grey Intrinsically safe cable : Blue

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 250V RU(i&c) & 250V RU/B(i&c) Unarmoured Individual & Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km
1P x 0.75	0.6	7.7 ± 0.8	26.3	1,170	90
2P x 0.75	0.6	12.0 ± 1.0	26.3	1,170	180
3P x 0.75	0.6	12.7 ± 1.0	26.3	1,170	230
4P x 0.75	0.6	13.9 ± 1.1	26.3	1,170	280
7P x 0.75	0.6	16.2 ± 1.1	26.3	1,170	430
8P x 0.75	0.6	17.8 ± 1.2	26.3	1,170	490
10P x 0.75	0.6	20.3 ± 1.3	26.3	1,170	600
12P x 0.75	0.6	21.1 ± 1.3	26.3	1,170	700
14P x 0.75	0.6	22.2 ± 1.4	26.3	1,170	790
16P x 0.75	0.6	23.8 ± 1.5	26.3	1,170	900
19P x 0.75	0.6	24.4 ± 1.5	26.3	1,170	1,030
24P x 0.75	0.6	28.6 ± 1.6	26.3	1,170	1,310
32P x 0.75	0.6	31.1 ± 1.7	26.3	1,170	1,680
1P x 1.0	0.6	8.1 ± 0.8	19.3	1,050	100
2P x 1.0	0.6	12.7 ± 1.0	19.3	1,050	210
3P x 1.0	0.6	13.4 ± 1.0	19.3	1,050	260
4P x 1.0	0.6	14.8 ± 1.1	19.3	1,050	330
7P x 1.0	0.6	17.2 ± 1.2	19.3	1,050	510
8P x 1.0	0.6	18.9 ± 1.3	19.3	1,050	580
10P x 1.0	0.6	21.6 ± 1.4	19.3	1,050	720
12P x 1.0	0.6	22.5 ± 1.4	19.3	1,050	830
14P x 1.0	0.6	23.6 ± 1.4	19.3	1,050	950
16P x 1.0	0.6	25.4 ± 1.5	19.3	1,050	1,070
19P x 1.0	0.6	26.0 ± 1.5	19.3	1,050	1,240
24P x 1.0	0.6	30.5 ± 1.7	19.3	1,050	1,570
32P x 1.0	0.6	33.2 ± 1.8	19.3	1,050	2,020
1P x 1.5	0.7	9.2 ± 0.9	12.9	1,010	130
2P x 1.5	0.7	14.6 ± 1.1	12.9	1,010	430
3P x 1.5	0.7	15.5 ± 1.1	12.9	1,010	690
4P x 1.5	0.7	17.1 ± 1.2	12.9	1,010	1,000
7P x 1.5	0.7	19.9 ± 1.3	12.9	1,010	2,010
8P x 1.5	0.7	22.0 ± 1.4	12.9	1,010	2,510
10P x 1.5	0.7	25.1 ± 1.5	12.9	1,010	3,240
12P x 1.5	0.7	26.2 ± 1.5	12.9	1,010	3,800
14P x 1.5	0.7	27.6 ± 1.6	12.9	1,010	4,440
16P x 1.5	0.7	29.7 ± 1.7	12.9	1,010	5,210
19P x 1.5	0.7	30.4 ± 1.7	12.9	1,010	5,880
24P x 1.5	0.7	35.7 ± 1.9	12.9	1,010	7,920
32P x 1.5	0.7	38.9 ± 2.1	12.9	1,010	9,550
1T x 0.75	0.6	8.3 ± 0.8	26.3	1,170	110
2T x 0.75	0.6	13.7 ± 1.0	26.3	1,170	230

Cable Type 250V RU(i&c) & 250V RU/B(i&c) Unarmoured Individual & Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km
3T x 0.75	0.6	14.5 ± 1.1	26.3	1,170	290
4T x 0.75	0.6	15.9 ± 1.1	26.3	1,170	360
7T x 0.75	0.6	19.0 ± 1.3	26.3	1,170	560
8T x 0.75	0.6	20.7 ± 1.3	26.3	1,170	640
10T x 0.75	0.6	24.4 ± 1.5	26.3	1,170	800
12T x 0.75	0.6	25.2 ± 1.5	26.3	1,170	920
14T x 0.75	0.6	26.6 ± 1.6	26.3	1,170	1,060
16T x 0.75	0.6	28.2 ± 1.6	26.3	1,170	1,190
19T x 0.75	0.6	29.8 ± 1.7	26.3	1,170	1,380
24T x 0.75	0.6	33.2 ± 1.8	26.3	1,170	1,730
32T x 0.75	0.6	38.1 ± 2.0	26.3	1,170	2,250
1T x 1.0	0.6	8.7 ± 0.8	19.3	1,050	120
2T x 1.0	0.6	14.5 ± 1.1	19.3	1,050	260
3T x 1.0	0.6	15.3 ± 1.1	19.3	1,050	340
4T x 1.0	0.6	16.8 ± 1.2	19.3	1,050	420
7T x 1.0	0.6	20.1 ± 1.3	19.3	1,050	660
8T x 1.0	0.6	21.9 ± 1.4	19.3	1,050	760
10T x 1.0	0.6	25.9 ± 1.5	19.3	1,050	950
12T x 1.0	0.6	26.8 ± 1.6	19.3	1,050	1,100
14T x 1.0	0.6	28.3 ± 1.6	19.3	1,050	1,260
16T x 1.0	0.6	29.9 ± 1.7	19.3	1,050	1,420
19T x 1.0	0.6	31.6 ± 1.8	19.3	1,050	1,650
24T x 1.0	0.6	35.3 ± 1.9	19.3	1,050	2,070
32T x 1.0	0.6	40.5 ± 2.1	19.3	1,050	2,700
1T x 1.5	0.7	9.6 ± 0.9	12.9	1,010	160
2T x 1.5	0.7	16.5 ± 1.2	12.9	1,010	350
3T x 1.5	0.7	17.5 ± 1.2	12.9	1,010	460
4T x 1.5	0.7	19.3 ± 1.3	12.9	1,010	580
7T x 1.5	0.7	23.2 ± 1.4	12.9	1,010	930
8T x 1.5	0.7	25.3 ± 1.5	12.9	1,010	1,060
10T x 1.5	0.7	29.9 ± 1.7	12.9	1,010	1,320
12T x 1.5	0.7	30.9 ± 1.7	12.9	1,010	1,530
14T x 1.5	0.7	32.7 ± 1.8	12.9	1,010	1,760
16T x 1.5	0.7	34.6 ± 1.9	12.9	1,010	1,990
19T x 1.5	0.7	36.6 ± 2.0	12.9	1,010	2,320
24T x 1.5	0.7	40.9 ± 2.1	12.9	1,010	2,910
32T x 1.5	0.7	47.0 ± 2.4	12.9	1,010	3,810

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data



Instrumentation & Communication Cable

250V BU(i), BU/B(i)

Halogen Free Fire Resistant Unarmoured Cable Individual Screen

- 250V BU(i)
- NEK 606 Type : S13

Halogen Free & Mud Resistant Fire Resistant Unarmoured Cable Individual Screen

- 250V BU/B(i)
- NEK 606 Type : S3/S7

Application

- Unarmoured cable Fixed installation instrumentation, communication control and alarm emergency and critical system.

Standards applied

- IEC 60092-376 : Design guidelines
- NEK 606(2004)
- IEC 60331 : Fire resistance
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)



Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Insulation	B	EP-Rubber
Twisting		Color coded cores twisted together to form a pair / triad
Individual Screen	(i)	Each pair / triad are individually screened by copper (or aluminum) backed polyester tape with tinned copper drain wire. Each pair / triad is wrapped with polyester tape. Pairs/triads are identified by numbered tape and printed numbers on insulation.
Sheath	U U/B	Flame retardant halogen free thermoset compound Flame retardant halogen free & mud resistant thermoset compound
Color		Non-intrinsically safe cable : Grey Intrinsically safe cable : Blue

- Cables to 1000°C with an upgraded IEC 60331 test.

Cable Type 250V BU(i) & 250V BU/B(i) Unarmoured Individual Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km
1P x 0.75	0.6	8.6 ± 0.8	26.3	1,170	100
2P x 0.75	0.6	13.5 ± 1.0	26.3	1,170	190
3P x 0.75	0.6	14.3 ± 1.1	26.3	1,170	240
4P x 0.75	0.6	15.7 ± 1.1	26.3	1,170	300
7P x 0.75	0.6	18.4 ± 1.2	26.3	1,170	470
8P x 0.75	0.6	20.3 ± 1.3	26.3	1,170	540
10P x 0.75	0.6	23.2 ± 1.4	26.3	1,170	660
12P x 0.75	0.6	24.2 ± 1.5	26.3	1,170	770
14P x 0.75	0.6	25.5 ± 1.5	26.3	1,170	880
16P x 0.75	0.6	27.4 ± 1.6	26.3	1,170	990
19P x 0.75	0.6	28.1 ± 1.6	26.3	1,170	1,140
24P x 0.75	0.6	33.0 ± 1.8	26.3	1,170	1,450
32P x 0.75	0.6	36.0 ± 1.9	26.3	1,170	1,870
1P x 1.0	0.6	9.0 ± 0.9	19.3	1,050	110
2P x 1.0	0.6	14.2 ± 1.1	19.3	1,050	210
3P x 1.0	0.6	15.0 ± 1.1	19.3	1,050	280
4P x 1.0	0.6	16.5 ± 1.2	19.3	1,050	350
7P x 1.0	0.6	19.4 ± 1.3	19.3	1,050	550
8P x 1.0	0.6	21.4 ± 1.4	19.3	1,050	630
10P x 1.0	0.6	24.5 ± 1.5	19.3	1,050	780
12P x 1.0	0.6	25.6 ± 1.5	19.3	1,050	900
14P x 1.0	0.6	26.9 ± 1.6	19.3	1,050	1,030
16P x 1.0	0.6	29.0 ± 1.7	19.3	1,050	1,170
19P x 1.0	0.6	29.7 ± 1.7	19.3	1,050	1,350
24P x 1.0	0.6	34.9 ± 1.9	19.3	1,050	1,710
32P x 1.0	0.6	38.1 ± 2.0	19.3	1,050	2,220
1P x 1.5	0.7	10.1 ± 0.9	12.9	1,010	140
2P x 1.5	0.7	16.1 ± 1.1	12.9	1,010	280
3P x 1.5	0.7	17.1 ± 1.2	12.9	1,010	370
4P x 1.5	0.7	18.8 ± 1.3	12.9	1,010	470
7P x 1.5	0.7	22.1 ± 1.4	12.9	1,010	740
8P x 1.5	0.7	24.5 ± 1.5	12.9	1,010	850
10P x 1.5	0.7	28.1 ± 1.6	12.9	1,010	1,060
12P x 1.5	0.7	29.3 ± 1.7	12.9	1,010	1,230
14P x 1.5	0.7	30.8 ± 1.7	12.9	1,010	1,410
16P x 1.5	0.7	33.2 ± 1.8	12.9	1,010	1,600
19P x 1.5	0.7	34.1 ± 1.9	12.9	1,010	1,860
24P x 1.5	0.7	40.1 ± 2.1	12.9	1,010	2,360
32P x 1.5	0.7	43.8 ± 2.3	12.9	1,010	3,070
1T x 0.75	0.6	9.2 ± 0.9	26.3	1,170	120
2T x 0.75	0.6	15.5 ± 1.1	26.3	1,170	240

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 250V BU(i) & 250V BU/B(i) Unarmoured Individual Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	Ω/km	M.Ω/km	kg/km
3T x 0.75	0.6	16.4 ± 1.2	26.3	1,170	310
4T x 0.75	0.6	18.1 ± 1.2	26.3	1,170	390
7T x 0.75	0.6	21.8 ± 1.4	26.3	1,170	610
8T x 0.75	0.6	23.8 ± 1.5	26.3	1,170	700
10T x 0.75	0.6	28.1 ± 1.6	26.3	1,170	880
12T x 0.75	0.6	29.1 ± 1.7	26.3	1,170	1,020
14T x 0.75	0.6	30.7 ± 1.7	26.3	1,170	1,170
16T x 0.75	0.6	32.5 ± 1.8	26.3	1,170	1,310
19T x 0.75	0.6	34.5 ± 1.9	26.3	1,170	1,540
24T x 0.75	0.6	38.5 ± 2.0	26.3	1,170	1,920
32T x 0.75	0.6	44.3 ± 2.3	26.3	1,170	2,520
1T x 1.0	0.6	9.6 ± 0.9	19.3	1,050	130
2T x 1.0	0.6	16.3 ± 1.2	19.3	1,050	440
3T x 1.0	0.6	17.2 ± 1.2	19.3	1,050	720
4T x 1.0	0.6	19.1 ± 1.3	19.3	1,050	1,070
7T x 1.0	0.6	22.9 ± 1.4	19.3	1,050	2,230
8T x 1.0	0.6	25.0 ± 1.5	19.3	1,050	2,770
10T x 1.0	0.6	29.6 ± 1.7	19.3	1,050	3,710
12T x 1.0	0.6	30.6 ± 1.7	19.3	1,050	4,310
14T x 1.0	0.6	32.4 ± 1.8	19.3	1,050	5,060
16T x 1.0	0.6	34.3 ± 1.9	19.3	1,050	5,860
19T x 1.0	0.6	36.3 ± 2.0	19.3	1,050	6,790
24T x 1.0	0.6	40.6 ± 2.1	19.3	1,050	8,790
32T x 1.0	0.6	46.7 ± 2.4	19.3	1,050	11,090
1T x 1.5	0.7	10.8 ± 0.9	12.9	1,010	170
2T x 1.5	0.7	18.5 ± 1.2	12.9	1,010	340
3T x 1.5	0.7	19.7 ± 1.3	12.9	1,010	450
4T x 1.5	0.7	21.8 ± 1.4	12.9	1,010	570
7T x 1.5	0.7	26.3 ± 1.6	12.9	1,010	930
8T x 1.5	0.7	28.7 ± 1.6	12.9	1,010	1,060
10T x 1.5	0.7	34.1 ± 1.9	12.9	1,010	1,340
12T x 1.5	0.7	35.3 ± 1.9	12.9	1,010	1,550
14T x 1.5	0.7	37.3 ± 2.0	12.9	1,010	1,780
16T x 1.5	0.7	39.5 ± 2.1	12.9	1,010	2,010
19T x 1.5	0.7	41.8 ± 2.2	12.9	1,010	2,350
24T x 1.5	0.7	46.8 ± 2.4	12.9	1,010	2,960
32T x 1.5	0.7	54.0 ± 2.7	12.9	1,010	3,890



Instrumentation & Communication Cable

250V BU(c), BU/B(c)

Halogen Free Fire Resistant Cable Collective Screen

- 250V BU(c)
- NEK 606 Type : S14

Halogen Free & Mud Resistant Fire Resistant Cable Collective Screen

- 250V BU/B(c)

Application

- Unarmoured cable Fixed installation instrumentation, communication control and alarm emergency and critical system.

Standards applied

- IEC 60092-376 : Design guideline
- NEK 606
- IEC 60331 : Fire resistance
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)

Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Insulation	B	Mica / Glass tape + EP-Rubber
Twisting		Color coded cores twisted together to form a pair / triad
Collective Screen	(c)	Pairs / triads are laid up and collectively screened by copper(or aluminum) backed polyester tape with tinned copper drain wire. Pairs / triads are identified by printed numbers on insulation.
Sheath	U U/B	Flame retardant halogen free thermoset compound Flame retardant halogen free & mud resistant thermoset compound
Color		Non-intrinsically safe cable : Grey Intrinsically safe cable : Blue

- Cables to 1000°C with an upgraded IEC 60331 test.

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 250V BU(c) & 250V BU/B(c) Unarmoured Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km
1P x 0.75	0.6	8.6 ± 0.8	26.3	1,170	100
2P x 0.75	0.6	9.9 ± 0.9	26.3	1,170	140
3P x 0.75	0.6	14.1 ± 1.1	26.3	1,170	210
4P x 0.75	0.6	15.5 ± 1.1	26.3	1,170	260
7P x 0.75	0.6	18.0 ± 1.2	26.3	1,170	380
8P x 0.75	0.6	19.8 ± 1.3	26.3	1,170	430
10P x 0.75	0.6	22.4 ± 1.4	26.3	1,170	530
12P x 0.75	0.6	23.0 ± 1.4	26.3	1,170	600
14P x 0.75	0.6	24.3 ± 1.5	26.3	1,170	680
16P x 0.75	0.6	25.6 ± 1.5	26.3	1,170	760
19P x 0.75	0.6	26.8 ± 1.6	26.3	1,170	870
24P x 0.75	0.6	31.5 ± 1.8	26.3	1,170	1,100
32P x 0.75	0.6	34.4 ± 1.9	26.3	1,170	1,400
1P x 1.0	0.6	8.9 ± 0.9	19.3	1,050	110
2P x 1.0	0.6	10.3 ± 0.9	19.3	1,050	160
3P x 1.0	0.6	14.7 ± 1.1	19.3	1,050	240
4P x 1.0	0.6	16.1 ± 1.1	19.3	1,050	290
7P x 1.0	0.6	18.8 ± 1.3	19.3	1,050	440
8P x 1.0	0.6	20.7 ± 1.3	19.3	1,050	500
10P x 1.0	0.6	23.3 ± 1.4	19.3	1,050	610
12P x 1.0	0.6	24.0 ± 1.5	19.3	1,050	700
14P x 1.0	0.6	25.4 ± 1.5	19.3	1,050	790
16P x 1.0	0.6	26.7 ± 1.6	19.3	1,050	890
19P x 1.0	0.6	28.0 ± 1.6	19.3	1,050	1,020
24P x 1.0	0.6	32.9 ± 1.8	19.3	1,050	1,290
32P x 1.0	0.6	35.9 ± 1.9	19.3	1,050	1,650
1P x 1.5	0.7	10.0 ± 0.9	12.9	1,010	140
2P x 1.5	0.7	11.6 ± 1.0	12.9	1,010	210
3P x 1.5	0.7	16.6 ± 1.2	12.9	1,010	320
4P x 1.5	0.7	18.3 ± 1.2	12.9	1,010	390
7P x 1.5	0.7	21.5 ± 1.4	12.9	1,010	600
8P x 1.5	0.7	23.7 ± 1.4	12.9	1,010	680
10P x 1.5	0.7	26.8 ± 1.6	12.9	1,010	830
12P x 1.5	0.7	27.5 ± 1.6	12.9	1,010	950
14P x 1.5	0.7	29.1 ± 1.7	12.9	1,010	1,080
16P x 1.5	0.7	30.7 ± 1.7	12.9	1,010	1,220
19P x 1.5	0.7	32.2 ± 1.8	12.9	1,010	1,410
24P x 1.5	0.7	37.9 ± 2.0	12.9	1,010	1,780
32P x 1.5	0.7	41.4 ± 2.2	12.9	1,010	2,290
1T x 0.75	0.6	9.2 ± 0.9	26.3	1,170	100
2T x 0.75	0.6	15.2 ± 1.1	26.3	1,170	190

Cable Type 250V BU(c) & 250V BU/B(c) Unarmoured Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km
3T x 0.75	0.6	16.2 ± 1.1	26.3	1,170	230
4T x 0.75	0.6	17.8 ± 1.2	26.3	1,170	280
7T x 0.75	0.6	21.3 ± 1.4	26.3	1,170	410
8T x 0.75	0.6	23.3 ± 1.4	26.3	1,170	470
10T x 0.75	0.6	27.4 ± 1.6	26.3	1,170	580
12T x 0.75	0.6	28.4 ± 1.6	26.3	1,170	660
14T x 0.75	0.6	30.0 ± 1.7	26.3	1,170	740
16T x 0.75	0.6	31.8 ± 1.8	26.3	1,170	830
19T x 0.75	0.6	33.6 ± 1.8	26.3	1,170	950
24T x 0.75	0.6	37.5 ± 2.0	26.3	1,170	1,180
32T x 0.75	0.6	43.1 ± 2.2	26.3	1,170	1,520
1T x 1.0	0.6	9.7 ± 0.9	19.3	1,050	120
2T x 1.0	0.6	16.1 ± 1.1	19.3	1,050	220
3T x 1.0	0.6	17.1 ± 1.2	19.3	1,050	270
4T x 1.0	0.6	18.8 ± 1.3	19.3	1,050	320
7T x 1.0	0.6	22.6 ± 1.4	19.3	1,050	480
8T x 1.0	0.6	24.6 ± 1.5	19.3	1,050	550
10T x 1.0	0.6	29.0 ± 1.7	19.3	1,050	680
12T x 1.0	0.6	30.1 ± 1.7	19.3	1,050	780
14T x 1.0	0.6	31.8 ± 1.8	19.3	1,050	880
16T x 1.0	0.6	33.6 ± 1.8	19.3	1,050	980
19T x 1.0	0.6	35.5 ± 1.9	19.3	1,050	1,120
24T x 1.0	0.6	39.6 ± 2.1	19.3	1,050	1,390
32T x 1.0	0.6	45.6 ± 2.3	19.3	1,050	1,800
1T x 1.5	0.7	10.8 ± 0.9	12.9	1,010	150
2T x 1.5	0.7	18.3 ± 1.2	12.9	1,010	280
3T x 1.5	0.7	19.4 ± 1.3	12.9	1,010	340
4T x 1.5	0.7	21.4 ± 1.4	12.9	1,010	420
7T x 1.5	0.7	25.8 ± 1.5	12.9	1,010	630
8T x 1.5	0.7	28.2 ± 1.6	12.9	1,010	730
10T x 1.5	0.7	33.3 ± 1.8	12.9	1,010	910
12T x 1.5	0.7	34.5 ± 1.9	12.9	1,010	1,030
14T x 1.5	0.7	36.5 ± 2.0	12.9	1,010	1,170
16T x 1.5	0.7	38.7 ± 2.0	12.9	1,010	1,320
19T x 1.5	0.7	40.9 ± 2.1	12.9	1,010	1,520
24T x 1.5	0.7	45.7 ± 2.3	12.9	1,010	1,900
32T x 1.5	0.7	52.7 ± 2.6	12.9	1,010	2,460

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data



Instrumentation & Communication Cable

250V BU(i&c), BU/B(i&c)

Halogen Free Fire Resistant Cable Individual & Collective Screen

- 250V BU(i&c)

Halogen Free & Mud Resistant Fire Resistant Cable Individual & Collective Screen

- 250V BU/B(i&c)

Application

- Unarmoured cable Fixed installation instrumentation, communication control and alarm emergency and critical system.

Standards applied

- IEC 60092-376 : Design guideline
- NEK 606(2004)
- IEC 60331 : Fire resistance
- IEC 60332-3 : Flame retardant Cat. A
- IEC 60754-1 : Halogen free properties
- IEC 61034 : Low smoke properties
- CSA C22-2 NO-38 : Low Temperature properties (optional)



Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire
Insulation	B	Mica / Glass tape + EP-Rubber
Twisting		Color coded cores twisted together to form a pair/ triad
Individual Screen	(i)	Each pair / triad are individually screened by copper(or aluminum) backed polyester tape with tinned copper drain wire. Pairs/triads are identified by numbered tape and printed numbers on insulation.
Collective Screen	(c)	Individually screened pairs / triads are laid up and collectively screened by copper (or aluminum) backed polyester tape with tinned copper drain wire.
Sheath	U U/B	Flame retardant halogen free thermoset compound Flame retardant halogen free & mud resistant thermoset compound
Color		Non-intrinsically safe cable : Grey Intrinsically safe cable : Blue

- Cables to 1000°C with an upgraded IEC 60331 test.

Cable Type 250V BU(i&c) & 250V BU/B(i&c) Unarmoured Individual & Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km
1P x 0.75	0.6	8.6 ± 0.8	26.3	1,170	100
2P x 0.75	0.6	13.7 ± 1.0	26.3	1,170	210
3P x 0.75	0.6	14.5 ± 1.1	26.3	1,170	260
4P x 0.75	0.6	15.9 ± 1.1	26.3	1,170	320
7P x 0.75	0.6	18.6 ± 1.2	26.3	1,170	490
8P x 0.75	0.6	20.5 ± 1.3	26.3	1,170	560
10P x 0.75	0.6	23.4 ± 1.4	26.3	1,170	690
12P x 0.75	0.6	24.4 ± 1.5	26.3	1,170	800
14P x 0.75	0.6	25.7 ± 1.5	26.3	1,170	910
16P x 0.75	0.6	27.6 ± 1.6	26.3	1,170	1,020
19P x 0.75	0.6	28.3 ± 1.6	26.3	1,170	1,170
24P x 0.75	0.6	33.2 ± 1.8	26.3	1,170	1,490
32P x 0.75	0.6	36.2 ± 1.9	26.3	1,170	1,910
1P x 1.0	0.6	9.0 ± 0.9	19.3	1,050	110
2P x 1.0	0.6	14.4 ± 1.1	19.3	1,050	240
3P x 1.0	0.6	15.2 ± 1.1	19.3	1,050	300
4P x 1.0	0.6	16.7 ± 1.2	19.3	1,050	370
7P x 1.0	0.6	19.6 ± 1.3	19.3	1,050	570
8P x 1.0	0.6	21.6 ± 1.4	19.3	1,050	650
10P x 1.0	0.6	24.7 ± 1.5	19.3	1,050	810
12P x 1.0	0.6	25.8 ± 1.5	19.3	1,050	930
14P x 1.0	0.6	27.1 ± 1.6	19.3	1,050	1,060
16P x 1.0	0.6	29.2 ± 1.7	19.3	1,050	1,210
19P x 1.0	0.6	29.9 ± 1.7	19.3	1,050	1,380
24P x 1.0	0.6	35.1 ± 1.9	19.3	1,050	1,750
32P x 1.0	0.6	38.3 ± 2.0	19.3	1,050	2,260
1P x 1.5	0.7	10.1 ± 0.9	12.9	1,010	140
2P x 1.5	0.7	16.3 ± 1.2	12.9	1,010	310
3P x 1.5	0.7	17.3 ± 1.2	12.9	1,010	400
4P x 1.5	0.7	19.0 ± 1.3	12.9	1,010	500
7P x 1.5	0.7	22.3 ± 1.4	12.9	1,010	780
8P x 1.5	0.7	24.7 ± 1.5	12.9	1,010	890
10P x 1.5	0.7	28.3 ± 1.6	12.9	1,010	1,100
12P x 1.5	0.7	29.5 ± 1.7	12.9	1,010	1,280
14P x 1.5	0.7	31.0 ± 1.7	12.9	1,010	1,460
16P x 1.5	0.7	33.4 ± 1.8	12.9	1,010	1,650
19P x 1.5	0.7	34.3 ± 1.9	12.9	1,010	1,910
24P x 1.5	0.7	40.3 ± 2.1	12.9	1,010	2,410
32P x 1.5	0.7	44.0 ± 2.3	12.9	1,010	3,130
1T x 0.75	0.6	9.2 ± 0.9	26.3	1,170	120
2T x 0.75	0.6	15.7 ± 1.1	26.3	1,170	260

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Cable Type 250V BU(i&c) & 250V BU/B(i&c) Unarmoured Individual & Collective Screen, Twisted Pair/Triad

No. of Pairs / Triads & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km
3T x 0.75	0.6	16.6 ± 1.2	26.3	1,170	310
4T x 0.75	0.6	18.3 ± 1.2	26.3	1,170	390
7T x 0.75	0.6	22.0 ± 1.4	26.3	1,170	610
8T x 0.75	0.6	24.0 ± 1.5	26.3	1,170	700
10T x 0.75	0.6	28.3 ± 1.6	26.3	1,170	880
12T x 0.75	0.6	29.3 ± 1.7	26.3	1,170	1,020
14T x 0.75	0.6	30.9 ± 1.7	26.3	1,170	1,170
16T x 0.75	0.6	32.7 ± 1.8	26.3	1,170	1,310
19T x 0.75	0.6	34.7 ± 1.9	26.3	1,170	1,540
24T x 0.75	0.6	38.7 ± 2.0	26.3	1,170	1,920
32T x 0.75	0.6	44.5 ± 2.3	26.3	1,170	2,520
1T x 1.0	0.6	9.6 ± 0.9	19.3	1,050	130
2T x 1.0	0.6	16.5 ± 1.2	19.3	1,050	440
3T x 1.0	0.6	17.4 ± 1.2	19.3	1,050	720
4T x 1.0	0.6	19.3 ± 1.3	19.3	1,050	1,070
7T x 1.0	0.6	23.1 ± 1.4	19.3	1,050	2,230
8T x 1.0	0.6	25.2 ± 1.5	19.3	1,050	2,770
10T x 1.0	0.6	29.8 ± 1.7	19.3	1,050	3,710
12T x 1.0	0.6	30.8 ± 1.7	19.3	1,050	4,310
14T x 1.0	0.6	32.6 ± 1.8	19.3	1,050	5,060
16T x 1.0	0.6	34.5 ± 1.9	19.3	1,050	5,860
19T x 1.0	0.6	36.5 ± 2.0	19.3	1,050	6,790
24T x 1.0	0.6	40.8 ± 2.1	19.3	1,050	8,790
32T x 1.0	0.6	46.9 ± 2.4	19.3	1,050	11,090
1T x 1.5	0.7	10.8 ± 0.9	12.9	1,010	170
2T x 1.5	0.7	18.7 ± 1.2	12.9	1,010	340
3T x 1.5	0.7	19.9 ± 1.3	12.9	1,010	450
4T x 1.5	0.7	22.0 ± 1.4	12.9	1,010	570
7T x 1.5	0.7	26.5 ± 1.6	12.9	1,010	930
8T x 1.5	0.7	28.9 ± 1.6	12.9	1,010	1,060
10T x 1.5	0.7	34.3 ± 1.9	12.9	1,010	1,340
12T x 1.5	0.7	35.5 ± 1.9	12.9	1,010	1,550
14T x 1.5	0.7	37.5 ± 2.0	12.9	1,010	1,780
16T x 1.5	0.7	39.7 ± 2.1	12.9	1,010	2,010
19T x 1.5	0.7	42.0 ± 2.2	12.9	1,010	2,350
24T x 1.5	0.7	47.0 ± 2.4	12.9	1,010	2,960
32T x 1.5	0.7	54.2 ± 2.7	12.9	1,010	3,890



Low Voltage Earthing & Bonding Wires

0.6/1kV UX

Halogen Free Flame Retardant Single Wires

- 0.6.1kV UX
- NEK 606 Type : P15

Application

- Insulated conductor for earthing and bonding services.
- On general purposes.

Standards applied

- IEC 60092-353 : Design guideline
- IEC 60332-1 : Flame retardant
- IEC 60754-1 : Halogen free properties

Construction

Classification	Code Letter	Construction Detail
Conductor		Tinned, Annealed, Stranded copper wire.
Insulation	U	Flame retardant halogen-free thermoset compound.
Sheath	X	Non - Sheathed
Color		Yellow/green for earth wire Black, Blue, Red for single wire (general purposes)

Cable Type 0.6/1kV UX

No. of Cores & Conductor Area	Thickness of Insulation	Overall Diameter	Conductor Resistance (at 20°C)(max.)	Insulation Resistance (at 20°C)(min.)	Cable Weight
No. x mm ²	mm	mm	Ω/km	MΩ/km	kg/km
1 x 1.0	1.0	3.7 ± 0.5	18.2	1,490	26
1 x 1.5	1.0	4.0 ± 0.5	12.2	1,300	33
1 x 2.5	1.0	4.4 ± 0.5	7.56	1,100	44
1 x 4	1.0	5.0 ± 0.5	4.70	920	60
1 x 6	1.0	5.5 ± 0.5	3.110	790	82
1 x 10	1.0	6.5 ± 0.5	1.840	640	120
1 x 16	1.0	7.5 ± 0.5	1.160	530	180
1 x 25	1.2	9.2 ± 0.5	0.734	510	280
1 x 35	1.2	10.4 ± 0.5	0.529	440	380
1 x 50	1.4	12.2 ± 0.6	0.391	440	520
1 x 70	1.6	14.4 ± 0.7	0.270	420	740
1 x 95	1.6	16.3 ± 0.8	0.195	360	1,000
1 x 120	1.6	17.9 ± 0.9	0.154	320	1,240
1 x 150	1.8	19.9 ± 1.0	0.126	330	1,520
1 x 185	2.0	22.1 ± 1.1	0.100	330	1,900
1 x 240	2.2	25.2 ± 1.3	0.0762	310	2,480
1 x 300	2.4	28.0 ± 1.4	0.0607	310	3,100

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Marine & Offshore Cable

NEK 606(2004)



Halogen Free & MUD Resistant Cables Technical Information

- » Electrical Data
- » Voltage Rating Selection
- » Test Methods
- » Installation Recommendation
- » Core Identification
- » Wire Gauge Conversion Table
- » Type Approval Certification



Electrical Data → → → → → → → →

1. Construction and Resistance of Conductor

1) Resistance Formula :

$$R = \rho \frac{L}{A}$$

- R = Resistance in ohm per phase
- A = Conductor area, mm²
- ρ = Specific resistance, Ω mm²/m
- L = Conductor length, m

2) Resistance Formula :

$$R = R_0 [1 + \alpha (t - 20)]$$

- R₀ = Resistance at t = 20°C
- α = 0.00393 for copper
- t = Conductor temperature, °C

2. Calculation of Electrical Data

1) Inductance :

for 2, 3 & 4 conductor cables is given by the formula:

$$L = 0.2 \times \left[\ln \left(\frac{2a}{d} \right) + 0.25 \right] \times 10^6$$

- L = Inductance in H/m and phase
- a = Axial space between conductor in mm.
- d = Conductor diameter

2) Reactance :

for 2, 3 & 4 conductor cables is given by the formula:

$$X = 2 \times \pi \times f \times L \times l$$

- X = Reactance in ohm per phase
- L = Inductance in H/m and phase
- f = Frequency in Hz
- l = Conductor length in meter

3) Impedance :

for 2, 3 & 4 conductor cables is given by the formula:

$$Z = \sqrt{R^2 + X^2}$$

- Z = Impedance in ohm per phase
- R = Resistance at operating temp. in ohm per phase
- X = Reactance in ohm per phase

• Electrical characteristics for instrumentation and telecommunication cables.

Conductor Size		unit	0.75 mm ²	1.0 mm ²	1.5 mm ²	2.5 mm ²
Electrical Characteristics	Individual Shield	nF/km	100	100	120	120
	Collective Shield	nF/km	80	80	90	90
Inductance		mH/km	0.71	0.72	0.65	0.65

• Inductance & Reactance Data

0.6/1kV RFOU, RFOU/B

Nominal Sectional Area mm ²	Single Core Cable			Multi Core Cable		
	Inductance L mH/km	Reactance X 60Hz Ω/km	Reactance X 50Hz Ω/km	Inductance L mH/km	Reactance X 60Hz Ω/km	Reactance X 50Hz Ω/km
1.5	0.548	0.207	0.172	0.352	0.133	0.111
2.5	0.510	0.192	0.160	0.336	0.127	0.106
4	0.474	0.179	0.149	0.315	0.119	0.099
6	0.442	0.167	0.139	0.295	0.111	0.093
10	0.414	0.156	0.130	0.277	0.104	0.087
16	0.392	0.148	0.123	0.260	0.098	0.082
25	0.371	0.140	0.117	0.256	0.097	0.080
35	0.355	0.134	0.112	0.249	0.094	0.078
50	0.346	0.130	0.109	0.248	0.094	0.078
70	0.330	0.124	0.104	0.240	0.090	0.075
95	0.318	0.120	0.100	0.238	0.090	0.075
120	0.309	0.116	0.097	0.233	0.088	0.073
150	0.304	0.115	0.096	0.233	0.088	0.073
185	0.299	0.113	0.094	0.232	0.087	0.073
240	0.2934	0.111	0.092	0.231	0.087	0.072
300	0.2918	0.110	0.092	0.229	0.086	0.072

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

0.6/1kV BFOU, BFOU/B

Nominal Sectional Area mm ²	Single Core Cable			Multi Core Cable		
	Inductance L mH/km	Reactance X 60Hz Ω/km	Reactance X 50Hz Ω/km	Inductance L mH/km	Reactance X 60Hz Ω/km	Reactance X 50Hz Ω/km
1.5	0.558	0.211	0.175	0.378	0.142	0.119
2.5	0.519	0.196	0.163	0.350	0.132	0.110
4	0.483	0.182	0.152	0.325	0.123	0.102
6	0.451	0.170	0.142	0.306	0.115	0.096
10	0.423	0.160	0.133	0.285	0.107	0.089
16	0.399	0.150	0.125	0.268	0.101	0.084
25	0.380	0.143	0.119	0.263	0.099	0.083
35	0.362	0.137	0.114	0.254	0.096	0.080
50	0.350	0.132	0.110	0.252	0.095	0.079
70	0.334	0.126	0.105	0.242	0.091	0.076
95	0.321	0.121	0.101	0.240	0.091	0.075
120	0.312	0.118	0.098	0.235	0.089	0.074
150	0.307	0.116	0.097	0.235	0.089	0.074
185	0.302	0.114	0.095	0.234	0.088	0.074
240	0.2958	0.112	0.093	0.232	0.087	0.073
300	0.2939	0.111	0.092	0.231	0.087	0.07

3.6/6kV RFOU, RFOU/B

Nominal Sectional Area mm ²	Single Core Cable		Multi Core Cable	
	Reactance X 60Hz Ω/km	Reactance X 50Hz Ω/km	Reactance X 60Hz Ω/km	Reactance X 50Hz Ω/km
25	0.179	0.147	0.151	0.126
35	0.173	0.144	0.143	0.119
50	0.170	0.142	0.132	0.110
70	0.162	0.135	0.128	0.107
95	0.147	0.123	0.121	0.101
120	0.139	0.116	0.117	0.098
150	0.136	0.113	0.113	0.094
185	0.132	0.110	0.109	0.092
240	0.128	0.107	0.102	0.091
300	0.124	0.103	-	-

3.6/6kV RFOU, RFOU/B

Nominal Sectional Area mm ²	Single Core Cable		Multi Core Cable	
	Reactance X 60Hz Ω/km	Reactance X 50Hz Ω/km	Reactance X 60Hz Ω/km	Reactance X 50Hz Ω/km
25	0.180	0.148	0.155	0.129
35	0.173	0.144	0.147	0.123
50	0.173	0.144	0.136	0.113
70	0.166	0.138	0.128	0.107
95	0.151	0.126	0.124	0.103
120	0.147	0.123	0.121	0.101
150	0.143	0.119	0.117	0.098
185	0.139	0.116	0.112	0.095
240	0.132	0.110	0.105	0.093
300	0.128	0.107	-	-

8.7/15kV RFOU, RFOU/B

Nominal Sectional Area mm ²	Single Core Cable		Multi Core Cable	
	Reactance X 60Hz Ω/km	Reactance X 50Hz Ω/km	Reactance X 60Hz Ω/km	Reactance X 50Hz Ω/km
25	0.189	0.155	0.162	0.135
35	0.181	0.151	0.155	0.129
50	0.181	0.151	0.143	0.119
70	0.173	0.144	0.136	0.113
95	0.147	0.123	0.132	0.110
120	0.147	0.123	0.124	0.103
150	0.143	0.119	0.121	0.101
185	0.132	0.110	0.115	0.098
240	0.136	0.113	0.110	0.095
300	0.132	0.110	-	-

3. Current Ratings for Continuous Service

Low Voltage 250V & 0.6/1kV Cable

Nominal Cross Sectional Area mm ²	Current Carrying Capacity					
	1C		2C		3C	
	A	A	A	A	A	A
0.5	10	8.5	7			
0.75	13	11	9			
1.0(0.9)	16	14	11			
1.5	23	20	16			
2.5	40	26	21			
4	51	34	28			
6	52	44	36			
10	72	61	50			
16	96	82	67			
25	127	108	89			
35	157	133	110			
50	196	167	137			
70	242	206	169			
95	293	249	205			
120	339	288	237			
150	389	331	272			
185	444	377	311			
240	522	444	365			
300	601	511	421			
	d.c	a.c	d.c	a.c	d.c	a.c
400	690	670	587	570	483	469
500	780	720	663	612	546	504
630	890	780	757	663	623	546

- Note**
- Maximum permissible service temperature of the conductor is 90°
 - The current ratings given above are based on an ambient air temperature of 45°
 - The current ratings given above are for 6 cables of less bunched or laid together in flat formation. When more than 6 cables are bunched or laid close together, the current ratings given above should be multiplied by correction factor 0.85.
 - For cables with more than 4 core cables, the current ratings are given by the formula.

formula : $I = \frac{I_1}{\sqrt[3]{N}}$ Where, I₁ = Current for single core cable
 N = Number of cores

- The current ratings above table are based on the nominal dimension of 0.6/1kV cables. Currents ratings for higher voltage cables, up to 15kV, may be up to about 5% lower than the tabulated values for Low voltage cables.

6. Correction factors for various ambient air temperature

Maximum Conductor Temperature °C	Correction Factor for Various Ambient Air Temperature									
	35	40	45	50	55	60	65	70	75	
85	1.12	1.06	1.00	0.94	0.87	0.79	0.71	0.61	0.50	
90	1.10	1.05	1.00	0.94	0.88	0.82	0.74	0.67	0.58	

4. Short Circuit Current Ratings

The short circuit currents quoted here are for cables operating normally at maximum conductor temperature of 90°C. EPR insulation is actually capable of withstanding short-term temperature up to 250°C

SHORT CIRCUIT CURRENT RATINGS

Conductor		Short Circuit Currents (KA)													
Nominal Area mm ²	Dia. mm	Duration of Short Circuit in Second													
		0.03	0.05	0.07	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
1.5	1.59	1.26	0.98	0.83	0.69	0.49	0.40	0.35	0.31	0.28	0.26	0.24	0.23	0.22	
2.5	2.01	2.02	1.56	1.32	1.10	0.78	0.64	0.55	0.49	0.45	0.42	0.39	0.37	0.35	
4	2.55	3.25	2.52	2.13	1.78	1.26	1.03	0.89	0.80	0.73	0.67	0.63	0.59	0.56	
6	3.12	4.86	3.77	3.18	2.66	1.88	1.54	1.33	1.19	1.09	1.01	0.94	0.89	0.84	
10	4.05	8.19	6.34	5.36	4.49	3.17	2.59	2.24	2.01	1.83	1.70	1.59	1.50	1.42	
16	5.10	12.99	10.06	8.50	7.11	5.03	4.11	3.56	3.18	2.90	2.69	2.52	2.37	2.25	
25	6.42	20.6	15.9	13.5	11.3	8.0	6.5	5.6	5.0	4.6	4.3	4.0	3.8	3.6	
35	7.56	28.5	22.1	18.7	15.6	11.1	9.0	7.8	7.0	6.4	5.9	5.5	5.2	4.9	
50	8.90	38.6	29.9	25.3	21.2	15.0	12.2	10.6	9.5	8.6	8.0	7.5	7.1	6.7	
70	10.70	55.9	43.3	36.6	30.6	21.6	17.7	15.3	13.7	12.5	11.6	10.8	10.2	9.7	
95	12.60	77.5	60.0	50.7	42.4	30.0	24.5	21.2	19.0	17.3	16.0	15.0	14.1	13.4	
120	14.21	97.9	75.8	64.1	53.6	37.9	31.0	26.8	24.0	21.9	20.3	19.0	17.9	17.0	
150	15.75	120.3	93.1	78.7	65.9	46.6	38.0	32.9	29.5	26.9	24.9	23.3	22.0	20.8	
185	17.64	150.8	116.8	98.8	82.6	58.4	47.7	41.3	36.9	33.7	31.2	29.2	27.5	26.1	
240	20.25	198.3	153.6	129.8	108.6	76.8	62.7	54.3	48.6	44.3	41.0	38.4	36.2	34.3	
300	22.68	248.7	192.8	162.8	136.2	96.3	78.6	68.1	60.9	55.6	51.5	48.2	45.4	43.1	
400	26.10	329.3	255.1	215.6	180.4	127.6	104.1	90.2	80.7	73.6	68.2	63.8	60.1	57.0	
500	28.80	401.0	310.6	262.5	219.6	155.3	126.8	109.8	98.2	89.7	83.0	77.7	73.2	69.5	

5. Voltage Drop

The voltage drop in a cable denotes the difference in voltage at the beginning and at the end of the cable and is calculated from the following formula;

1) D.C. voltage drop (2 wire D.C. circuits)

$$V_{\text{drop}} = 2 \times I \times L \times R \text{ [volts]}$$

- Where
- I = Load current [Amp]
 - L = Length of cable [km]
 - R = D.C. conductor resistance at Max. rated conductor temperature [Ω /km]

2) A.C. voltage drop

• Single-phase voltage drop

$$V_{\text{drop}} = 2 \times I \times L \times (R \cdot \cos \phi + X \cdot \sin \phi) \text{ [volts]}$$

- Where
- I = Load current [Amp]
 - L = Length of cable [km]
 - R = A.C. conductor resistance at Max. rated conductor temperature [Ω /km]
 - X = Reactance of the cable [Ω /km]
 - φ = Power factor angle by which the current lags (or leads) the voltage

• Three-phase voltage drop

$$V_{\text{drop}} = \sqrt{3} \times I \times L \times (R \cdot \cos \phi + X \cdot \sin \phi) \text{ [volts]}$$

- Where
- I = Load current [Amp]
 - L = Length of cable [km]
 - R = A.C. conductor resistance at Max. rated conductor temperature [Ω /km]
 - X = Reactance of the cable [Ω /km]
 - φ = Power factor angle by which the current lags (or leads) the voltage

6. Electrical Circuit Formulas

For determining amperes, horsepower, kilowatts and kilovolt-amperes

Desired Data	Alternating Current			Direct Current
	Single-Phase	Two-Phases, Four-Wires	Three-Phases	
Amperes when KVA is known	$\frac{kVA \times 1000}{E}$	$\frac{kVA \times 1000}{2 \times E}$	$\frac{kVA \times 1000}{1.732 \times E}$	$\frac{kVA \times 1000}{E}$
Amperes when KW is known	$\frac{KW \times 1000}{E \times pf}$	$\frac{KW \times 1000}{2 \times E \times pf}$	$\frac{KW \times 1000}{1.732 \times E \times pf}$	$\frac{KW \times 1000}{E}$
Amperes when HP is known	$\frac{HP \times 746}{E \times \%Eff \times pf}$	$\frac{HP \times 746}{2 \times E \times \%Eff \times pf}$	$\frac{HP \times 746}{1.732 \times E \times \%Eff \times pf}$	$\frac{HP \times 746}{E \times \%Eff}$
Kilovolt - Amperes	$\frac{I \times E}{1000}$	$\frac{2 \times I \times E}{1000}$	$\frac{1.732 \times I \times E}{1000}$	$\frac{I \times E}{1000}$
Kilowatts	$\frac{I \times E \times pf}{1000}$	$\frac{2 \times I \times E \times pf}{1000}$	$\frac{1.732 \times I \times E \times pf}{1000}$	$\frac{I \times E}{1000}$
Horsepower	$\frac{I \times E \times \%Eff \times pf}{746}$	$\frac{2 \times I \times E \times \%Eff \times pf}{746}$	$\frac{1.732 \times I \times E \times \%Eff \times pf}{746}$	$\frac{I \times E \times \%Eff}{746}$

- Where
- E = Volts between conductors
 - I = Line current amperes
 - %Eff = Percent efficiency of motor in decimal
 - pf = Power factor (cos) in decimal
 - kVA = Kilovolt-ampere
 - KW = Kilowatts
 - HP = Horsepower

Note In two - phase, three-wire balanced circuits, the current in the common conductor is 1.414 times of formulas of two-phase, four-wire in either of the other conductors.

Selection Cable for A.C Systems

Supply System	System Category	System Voltage(KV)					Recommended	
		Phase to Earth(U _o)		Phase to Earth(U)		Maximum Sustained Voltage (Um)	IEC Standards	BS Standards
		Above	Up to and including	Above	Up to and including		KV	KV
3-Phases 4-Wires	A & B	-	0.15	-	0.25	0.28	0.15 / 0.25	0.15 / 0.25
		0.15	0.6	0.25	1	1.2	0.6 / 1	0.6 / 1
3-Phases 4-Wires	C	-	-	-	0.15	-	0.15 / 0.25	0.15 / 0.25
		-	-	0.15	0.6	-	0.6 / 1	0.6 / 1
3-Phases 3-Wires	A & B	-	0.15	-	0.25	0.28	0.15 / 0.25	0.15 / 0.25
		0.15	0.6	0.25	1	1.2	0.6 / 1	0.6 / 1
		0.6	1.9	-	3.3	3.6	1.8 / 3	1.9 / 3.3
		1.9	3.8	3.3	6.6	7.2	3.6 / 6	3.8 / 6.6
		3.8	6.35	6.6	11	12	6 / 10	6.35 / 11
		6.35	8.7	11	15	17	8.7 / 15	-
3-Phases 3-Wires	C	-	-	-	0.15	-	0.15 / 0.25	0.15 / 0.25
		-	-	0.15	0.6	-	0.6 / 1	0.6 / 1
		-	-	0.6	1.9	-	1.8 / 3	1.9 / 3.3
		-	-	1.9	3.3	3.6	3.6 / 6	3.8 / 6.6
		-	-	3.3	6.6	7.2	6 / 10	6.35 / 11
		-	-	6.6	11	12	8.7 / 15	11 / 11
2-Phases 3-Wires or 2-Phases 4-Wires	A & B	-	0.15	-	0.21	-	0.15 / 0.25	0.15 / 0.25
		0.15	0.6	-	0.84	-	0.6 / 1	0.6 / 1
2-Phases 3-Wires or 2-Phases 4-Wires	C	-	-	-	0.15	-	0.15 / 0.25	0.15 / 0.25
		-	-	0.15	0.6	-	0.6 / 1	0.6 / 1
1-Phase 3-Wires	A & B	-	0.15	-	0.25	0.28	0.15 / 0.25	0.15 / 0.25
		0.15	0.6	0.25	1	1.2	0.6 / 1	0.6 / 1
1-Phase 3-Wires	C	-	-	-	0.15	-	0.15 / 0.25	0.15 / 0.25
		-	-	0.25	0.6	-	0.6 / 1	0.6 / 1
1-Phase 2-Wires or 1-Phase 1-Wire	C	-	-	-	0.15	-	0.15 / 0.25	0.15 / 0.25
		-	-	0.15	0.6	-	0.6 / 1	0.6 / 1
		-	-	0.6	1.9	-	1.8 / 3	1.9 / 3.3
		-	-	1.9	3.3	3.6	3.6 / 6	3.8 / 6.6
		-	-	3.3	6.6	7.2	6 / 10	6.35 / 11
		-	-	6.6	11	12	8.7 / 15	-
1-Phase 2-Wires or 1-Phase 1-Wire	C	-	-	-	0.15	-	0.15 / 0.25	0.15 / 0.25
		-	-	0.15	0.6	-	0.6 / 1	0.6 / 1
1-Phase 2-Wires or 1-Phase 1-Wire	C	-	-	0.15	0.6	-	0.6 / 1	0.6 / 1
		-	-	0.6	1.9	-	1.8 / 3	1.9 / 3.3
1-Phase 2-Wires or 1-Phase 1-Wire	C	-	-	1.9	3.3	3.6	3.6 / 6	3.8 / 6.6
		-	-	3.3	6.6	7.2	6 / 10	6.35 / 11
1-Phase 2-Wires or 1-Phase 1-Wire	C	-	-	6.6	11	12	8.7 / 15	-
		-	-	11	15	17.5	12 / 20	12.7 / 22

Note The rated voltage of the cable for a given application shall be suitable for the operating conditions in the system in which the cable is used. To facilitate the selection of the cable, systems are divided into three categories.

Category A : This category comprises those systems in which any phase conductor that comes in contact with earth or an earth conductor, is automatically disconnected from the system within 1 minute.

Category B : This category comprises those systems which, under fault conditions, are operated for a short time, not exceeding 8 hours on any occasion, faults in any year should not exceed 125 hours.

Category C : This category comprises all systems which do not fall into categories A and B.

1. Flame Retardant



IEC-60332-3. CAT. A Test (VTFT)



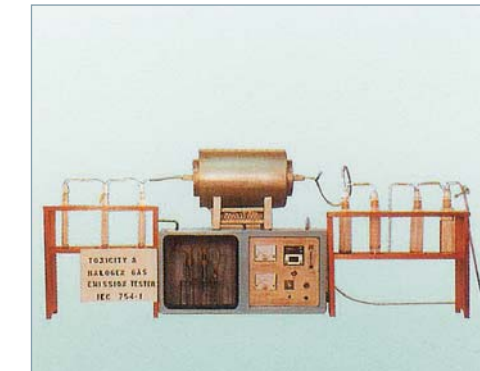
IEC-60332-1test (VFT)

2. Fire Resistance (IEC 60331-21 at 750°C)



Upgraded to 1000 can be supplied on request.

3. Content of Halogen (IEC 60754-1,2)



Max. content of halogen = 5 mg/g. (0.5%)

4. Smoke Emission (IEC 61034-1,2)



Minimum light transmittance is 60%

5. Oxygen Index (ASTM D 2863)



6. Mud Resistance(SHF MUD)

Mud resistant cables shall be designed with sheathing compounds suitable for installation and operation in contact with MUD unless otherwise specified, Type SHF Mud. Each MUD must be tested for compatibility with the cable sheathing

7. Oil Resistance

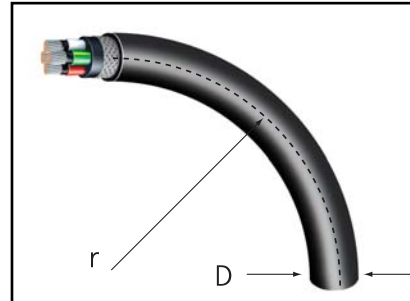
All thermoset sheathed cables shall be suitable for an oil production installation. The oil resistance properties shall be demonstrated by a test according to IEC 60092-350 Paragraph 13,12, with the cable immersed in ASTM oil no.2 at 100 for 24 hours

Installation Recommendations → → → → → → → →

The following installation recommendations are in accordance with IEC regulation and practice. Different regulations may apply in other countries.

1. Minimum Cable Bending Radius

Reference Std. IEC 60092-352



1-1 Bending radius for cables rated up to 1.8/3kV

Cable Type	Overall Diameter of Cable (D)	Minimum Internal Radius of Bend
Insulation	Unarmoured or Unbraided	4D
	Metal Braid Screened or Armoured	6D
Thermoplastic or thermosetting with circular copper conductors	Metal wire armoured Metal tape armoured or metal-sheathing	6D
	Composite polyester/ metal laminated tape screened units or collective tape screening	8D
	Any	8D
Thermoplastic or thermosetting with sector shaped copper conductors	Any	8D
Mineral	Hard metal sheathed	8D

1-2 Bending radius for cables rated at 3.6/6(7.2)kV and above

Cable Type	Overall Diameter of Cable (D)	Minimum Internal Radius of Bend
Single core cable	Any	12D
3- core cables	Any	9D

2. Installation Temperature

Minimum recommended installation temperature for cables shall be -20 °C.

3. Pulling Tension

The cable pulling tension during installation can be estimated by means of the following formula :

$p = 5kg$ total cross section of conductors in the armoured cable or,

$p = 2.5kg$ total cross section of conductors in the unarmoured cable

Additional tension will be supplied from the braid and the insulation and sheathing compound.

4. Explosion Risk Areas

1) Areas

The areas on board are usually classified in two main categories as regards the explosion risk:

- **Hazardous areas** : Areas in which explosive gas-air mixtures are, or may be expected to be, present in quantities such as to required special precautions for the construction and use of electrical apparatus.
- **Safe areas(non-hazardous areas)** : Areas in which explosive gas-air mixtures are not expected to be, present in quantities such as to required special precautions for the construction and use of electrical apparatus.

A hazardous area is divided into three zones :

- **Zone 0** : in which an explosive gas-air mixture is continuously present or present for long periods.
- **Zone 1** : in which an explosive gas-air mixture is likely to occur in normal operation
- **Zone 2** : in which an explosive gas-air mixture is not likely to occur, and if occurs it will only exist for a short time

2) Installation of Cables

For cables to be used in zone 0 and zone 1, one of the following types of protection is required :

- A non-metallic outer sheath in combination with braiding or other metallic covering for earth fault detection and mechanical protection. A non-metallic outer sheath is, however, not required if the screen or armouring consists of a corrosion resistant bronze alloy.
- A lead sheathing in addition to further mechanical protection, for example armour braiding or non-metallic impervious sheath.
- For mineral insulated cables, a copper or stainless steel sheath.
- Single core cables in installations with A.C or D.C. current with a high ripple content should be of types without screen or armouring. Where mechanical damage is possible, such cables should otherwise be mechanically protected or installed in ducts or similar.

For installations in zone 2, cables without screen or armour can be used.

5. Earthing of Metal Coverings of Cables

1) General Requirements

All metal coverings of cables, armouring or shielding shall be earthed. Earthing must be provided at both ends except for final sub-circuits where earthing at only one end (the supply end) is sufficient. Earthing at one end is permitted where it is required for technical or safety reasons, control and instrumentation cables, mineral insulated cables, intrinsically safe circuits, control circuits, etc.

Metal covering of single core cables for AC and single core cables for DC with ripple content exceeding 10% and having a current rating exceeding 20A is to be earthed at one end only. When single core cables for AC and DC with ripple content higher than 10% are installed in or passing through hazardous areas, the metal screen or armour is to be earthed inside the hazardous area to avoid dangerous potential between screen armour and earthed part of the installation.

2) Cross Section of Earth Connections

Earth connections for metal coverings shall be carried out with conductors having cross sectional areas related to the cross sectional areas of the phase conductors and the current ratings of the cables, or at least the same cross sectional areas as the metal covering itself.

3) Earthing Through Metal Clamps etc.

Metal coverings of cables may be earthed through clamps. The clamps must grip the metal covering of the cable and must be connected to the hull and provide a good conductive connection between the metal covering and the hull. The metal clamps must be corrosion resistant.

4) Earthing Through Cable Glands

The metal coverings of cables may be earthed by means of glands intended for the purpose and so designed as to ensure an effective earth connection. The glands shall be firmly attached to, and in effective electrical contact with, a metal structure earthed in accordance with these regulations.

5) Earthing of Metal Pipes, Conduits etc.

Metal pipes and cable conduits are to be earthed. Pipes and conduits may be earthed by being screwed into a metal enclosure, or by nuts in both sides of the wall of metallic enclosure, provided that the surface is clean and free from rust, scale or paint.

Comments : for intrinsically safe circuits it is important to separate the earth conductor from the protective earthing.

The resistance between a zener barrier earth and protective earth must be max. 1ohm and preferably less than 0.1ohm to avoid that possible fault current does not lead to a potential increase in the system.

6. Fixing of Cables

General

Cables are to be suitably fixed to the supports. In order to guard against the effects of electrodynamic forces developing on the occurrence of a short circuit, single core cables should be firmly fixed by using supports of a strength adequate to withstand forces corresponding to the values of prospective short circuit current.

The requirement concerning fixing can normally be fulfilled when the cables are clamped as follows:

- For cables entering enclosures and conduits the nearest clamp is to be placed at a minimum distance from the entry of 10 times the diameter the cable concerned from the entry.
- At other points the distance between the clamps must not exceed the in the following table:

External Diameter of Cable (mm)		Max. Spacing of Fixing Points (mm)	
Above	Up to	Cables without Metal Braid or Armour	Cables with Copper, Bronze or Steel Braid or Armour
	8	200	250
8	13	250	300
13	20	300	350
20	30	350	400
30		400	450

7. Mechanical Protection of Cables

Cables are to be installed in such a way that they are not subject to damaging mechanical stressed.

where this can not be obtained the cables are to be protected. Unless the cable itself (for example armour or sheath) provides adequate protection the cables should be:

- Enclosed in suitable conduits or casings
- Covered by steel plates or profiles
- Steel pipes in which the cables are run

In areas where there is an exceptional risk of mechanical damage, for example in cargo hold area or different storage areas, the cables always have to be protected, even when the cables are armoured.

The thickness of the protective conduits must be at least 4mm. The wall thickness of the protective conduit must be at least 2mm.

Cables lay on aluminum supports may have a corresponding protection of aluminum. the thickness must be at least 4mm.

Metal casing used for mechanical protection of cables should be efficiently protected against corrosion.

8. Installation of Cables for Fire Properties

Cables must at least meet the flame retardant requirements. On board passenger ships, cargo-ships and mobile offshore units, where requirements are considered to be satisfied if the cables have characteristics complying with the cable bunch test IEC-Publication 60332-3, or fire stops are installed in accordance with the following recommendations :

When cables complying with single-cable test, but not the cable-bunch-test, are installed, fire stops are to be provided in enclosed or semi-enclosed spaces except for cargo rooms and tunnels in cargo areas.

a) For vertical cable runs

- with a max. distance between fire stops of two decks or 6 meters, unless installed in totally enclosed cable ducts
- at the main and emergency switchboard
- where cables enter into an engine control room
- at centralized control panels for propulsion machinery and essential auxiliaries
- at the entrance to cables ducts

b) For horizontal cable runs.

- Fire stops shall be as specified in item a) above but the maximum. distance between fire stops may be increased to 14m.

When choosing cable types special attention should be paid to reduce possible damage due to corrosion in case of a fire. Non-halogen free cables(materials) will give off corrosive gases during a fire.

The corrosion effect depends on the amount of halogens in the materials used.

Flame retardant cables are to have characteristics complying with the test requirements in IEC-Publication 60332-1, with amendments.

Fire resistant cables are to have characteristics complying with the requirements in IEC-Publication 60331.

9. Intrinsically Safe Installations

Cables and flexible cables for intrinsically safe circuits must have screen or similar of a conducting material and the outer sheath must be of an insulating material. A non-metallic outer sheath is, however, not required if the screen or armour consists of a corrosion resistant bronze alloy. Where there is no danger of interference from the external electrical or magnetic fields, short flexible cables may be used without screen.

a) Associated equipment

Associated equipment (e.g. power supply units) shall be situated in a safe area or has protection as mentioned in Explosion risk areas.

b) Connection of equipment

Within limitations laid down in 3., ordinary non-explosion protected equipment may be connected to intrinsically safe equipment, provided that it is designed to meet regulations in other respects.

c) Compliance with any limitations in the certificate

With intrinsically safe circuits special considerations must be given to ensure that the circuits characteristics (including connected equipment, cables, conductors etc.) satisfy any limitations in the test certificate. Such limitations may be maximum values for capacitance and inductance etc. It is pointed out there is a danger of damage to i.s equipment when using normal equipment for insulation testing

d) Adjacent location

Conductors for i.s safe circuits and conductors for non-i.s safe circuits shall not be run together in the same cable, flexible cable, conduit, cables bunch etc.

e) Protection against electrical and magnetic fields

Where i.s circuits are exposed to magnetic or electrical field that may destroy the intrinsic safety of the system.

Precautions must be taken during installation. Such precautions may be:

- cables for i.s circuits and non - i.s circuits to be installed a minimum distance of 50mm apart.
The minimum distance to heavy current cables using D.C with a high ripple content should be 300mm.
- cables for i.s circuits and non -i.s circuits to be separated panel of conducting material which is earthed.
- cables for i.s circuits to have effective transposition.

f) Marking

The marking may be a marking plate or by color marking of the cables when using color marking, the color should be light blue.

Core Identification → → → → → → → →

Wire Gauge Conversion Table → → → → → → → →

1. High Voltage Power Cables

The individual cores shall be identified by the colored semi-conducting tape or colored ribbon tape run longitudinally on the non-metallic part of insulation screening and the color scheme shall be as follows;

- 1 core : Off-white (grey)
- 3 cores : Off-white (grey), Black, Red or White, Red, Blue

The other color scheme may be applicable when purchaser required.

2. Low Voltage Power and Control Cables

The insulated cores shall be identified by the color of insulation or by the number printed on insulated cores; as follows

- 1 core : Off-white(Grey) or Black
- 2 cores : Off-white, Black
- 3 cores : Off-white, Black, Red
- 4 cores : Off-white, Black, Red, Blue or Black, Off-white, Red, Green.
- 5 cores and above core : white number on black insulation or black number on white insulation
- Earth core : Green/Yellow (green with yellow trace)

The other color scheme may be applicable when purchaser required.

3. Instrumentation and Communication Cables

Each pair / triad shall be identified as follows.

- Pairs : Black, Light blue or Black, White
- Triads : Black, Light blue, Brown or Black, White, Red

For identification of multi-pair/triad cables, pair/triad are identified by lapping of the numbered tape or by the number print directly on the each cores, and the number interval shall be 100mm or less.

The other color scheme may be applicable when purchaser required.

U.S. Standard cross-section to square millimeters

US Standard	Equivalent cross-section mm ²	Nearest available cross-section mm ²
20AWG	0.519	0.5-0.75
18	0.823	1.0
16	1.31	1.5
14	2.08	2.5
12	3.31	4.0
10	5.26	6.0
8	8.37	10
6	13.30	16
4	21.15	25
2	33.62	35
1	42.41	50
1/0	53.49	70
2/0	67.23	70
3/0	85.01	95
4/0	107.2	120
250MCM	126.7	120-150
300	152.0	150
350	177.3	185
400	202.7	185
450	228.0	185-240
500	253.4	240
550	278.7	240-300
600	304.0	300
650	329.4	300
700	354.7	300-400
750	380.0	400
800	405.4	400
850	430.7	400
900	456.0	400
950	481.4	400
1000	506.7	400-630
1250	633.4	630
1500	760.0	800
1750	886.7	800-1000
2000	1013.4	1000

High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

High Voltage Power Cable

Low Voltage Power & Control Cable

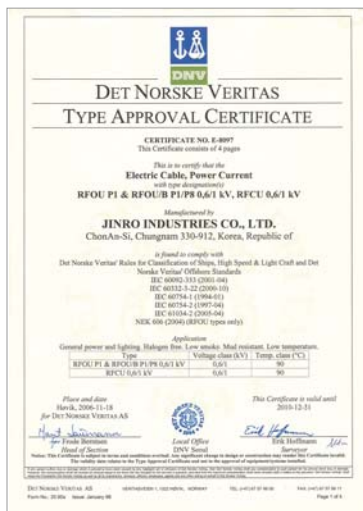
Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data

Type Approval Certificates → → → → → → → → →

Example of Typical Certificates



High Voltage Power Cable

Low Voltage Power & Control Cable

Instrumentation & Communication Cable

Low Voltage Earthing & Bonding Wire

Technical Data