



E-Route[®]

Halogen free Shipboard Cable

IEC 60092-350, 353, 354, 376

ENTERPRISE WITH DREAM, HOPE, AND FUTURE

TMC Co., Ltd has been pursuing innovation in technology and products for the specialty industrial cable market.

For 23 years TMC has had a single-minded focus on delivering superior customer services with marine and offshore plant cable solutions.

The operational excellence of TMC is underpinned by its products with the best quality and outstanding service to meet specific requirements that makes us the world's most experienced marine and offshore cable manufacturer.

Company History

- 1991** Establishment of Seojin Industry Co.,Ltd.
- 1998** ISO 9001 Certification by LRQA
- 2004** ISO 14001 Certification by LRQA
- 2005** Changed the name of company to TMC Co.,Ltd.
- 2006** Won the 30 million USD Export Tower Award granted by the Ministry of Knowledge Economy
- 2006** Earned recognition by Hyundai Mipo Dockyard Co., Ltd. as one of the excellent suppliers.
- 2007** Won the 70 million USD Export Tower Award granted by the Ministry of Knowledge Economy
- 2007** Received the High quality supplier Certification from DSME
- 2007** Achieved Korean world-class product award 2007
- 2008** Won the 100 million USD Export Tower Award granted by the Ministry of Knowledge Economy
- 2008** OHSAS 18001 Certification by LRQA
- 2009** Awarded the Q-Mark as a Silver grade for Offshore Cable supplier by Samsung Heavy Industries
- 2010** Awarded the Best Supplier for Offshore & Marine Cable by Ocean Rig
- 2010** Earned recognition by DSME as one of the excellent supplier
- 2011** Awarded the Best Supplier for Offshore & Marine Cable by Stena Sphere
- 2011** KEPIC Certification by KEA (Manufacture of Class 1E cable)
- 2012** Won the 200 million USD Export Tower Award granted by the Ministry of Knowledge Economy
- 2013** Designated as 'Korean Hidden Champion' by Korea Eximbank
- 2013** TL9000 certification by SGS (design & manufacture of optical fiber cable)
- 2014** Earned recognition by DSME Excellent supplier

Certificates

- Type Approval Certification for shipboard cables : ABS, BV, DNV, GL, KR, LR, NK and RINA
- Type Approval Certification for NEK 606(2004) offshore cables : ABS, DNV and LR
- Type Approval Certification by ABS for offshore cables and listed on ETL
- Type Approval Certification for Passenger ships cables : ABS, DNV,LR, BV and CCS
- Obtained Patent of Paint Resistant Shipboard Cables (Patent NO. 10-0627241)
- Type Approval Certification for IEEE1580 Type P cables : ABS, DNV, CSA and listed on ETL
- Type Approval Certification for LNG Carrier cables : ABS, DNV, LR and BV
- Gost-R Certification for NEK 606(2004) offshore cables by GOSSTANDART
- Type Approval Certification for Marine Optical Fiber Cables : ABS and DNV
- Type Approval Certification for MIL 24643 Warship Cables : KR
- Type Approval Certification for VG 95218 Submarine Cables : KR





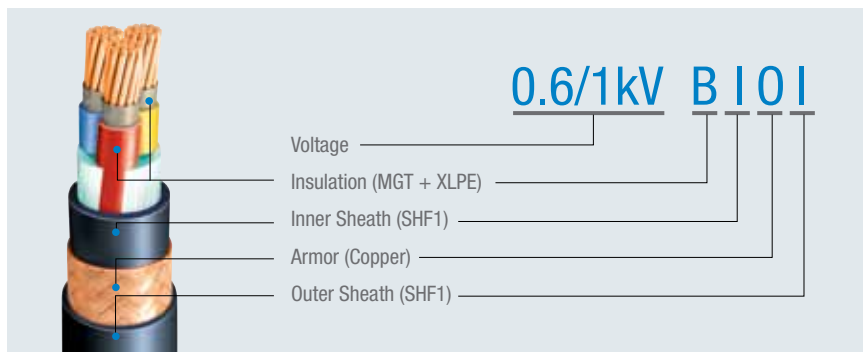
Code Designation

Materials	Construction	Insulation	Inner covering (Inner sheath)	Armor	Outer sheath
XLPE		T			
MGT + XLPE		B			
HFC (H/F comp'd) / H/F Tape			F		
No armor				X (or omit)	
Copper wire braid				O	
Galvanized steel wire braid				C	
SHF1 (H/F Thermoplastic comp'd)			I		I

Added abbreviation

- (i) Individual screen
- (c) Collective screen
- (i & c) Individual & Collective screen

Example



Index

Materials	Designation	Page
HV Power Cable	3.6/6kV TFOI, 6/10kV TFOI, 8.7/15kV TFOI	06
	3.6/6kV TIOI, TICI	09
	6/10kV TIOI, TICI	
	8.7/15kV TIOI, TICI	
LV Power & Control Cable	0.6/1kV TI	13
	0.6/1kV TFOI	17
	0.6/1kV TIOI, TICI	21
	0.6/1kV BI	25
	0.6/1kV BFOI	29
	0.6/1kV BIOI, BICI	33
VFD Cable	0.6/1kV(1.8/3kV) FX-TFOI(VFD)	38
Instrumentation & Communication Cable	250V TI, 250V TI(c)	41
	250V TI(i), 250V TI(i&c)	44
	250V TFOI, 250V TFOI(c)	47
	250V TFOI(i), 250V TFOI(i&c)	50
	250V TIOI, 250V TICI	53
	250V TIOI(c), 250V TICI(c)	
	250V TIOI(i), 250V TICI(i),	56
	250V TIOI(i&c), 250V TICI(i&c),	
	250V BI, 250V BI(c)	59
	250V BI(i), 250V BI(i&c)	62
250V BFOI, 250V BFOI(c)	65	
250V BFOI(i), 250V BFOI(i&c)	68	
Fire Resistance	250V BIOI, 250V BICI	71
	250V BIOI(c), 250V BICI(c)	
	250V BIOI(i), 250V BICI(i),	74
	250V BIOI(i&c), 250V BICI(i&c),	
Technical data		78



HV Power Cable



Flame Retardant

3.6/6kV TFOI

6/10kV TFOI

8.7/15kV TFOI

06 ~ 08

3.6/6kV TIOI, TICl

6/10kV TIOI, TICl

8.7/15kV TIOI, TICl

09 ~ 11

Flame retardant

High Voltage Power Cable



Cable Designation

3.6/6kV TFOI, 6/10kV TFOI, 8.7/15kV TFOI

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-354
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2
	Conductor screen		- Semi-conducting layer (tape / compound)
	Insulation	T	- XLPE as per IEC 60092-351
	Insulation screen		- Non-metallic part : Semi-conducting layer (tape / compound) - Metallic part : Copper tape with about 0.1mm thickness - A suitable separator tape(s) may be applied over the metallic part
	Cabling		- Three metallic wrapped conductors shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable
	Inner covering	F	- Halogen free compound
	Armor	O	- Braid of pain annealed copper wire - Coverage density : Min. 90%
	Sheath	I	- SHF1 as per IEC 60092-359 - Sheath color : Red
Core identification		- Colored tape shall be inserted under metallic screen 3C : Red, Yellow, Blue	

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

3.6/6kV TFOI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner covering	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance			
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	kV/5min	kg/km	
1	10	7	4.2	2.5	1.0	14.9	0.3	1.5	19.6	0.9	1.830	12.5	580
	16	7	5.3	2.5	1.0	15.8	0.3	1.5	20.5	0.9	1.150	12.5	670
	25	7	6.6	2.5	1.0	17.1	0.3	1.5	21.8	1.0	0.727	12.5	800
	35	7	7.9	2.5	1.0	18.3	0.3	1.6	23.2	1.0	0.524	12.5	940
	50	19	9.1	2.5	1.0	19.6	0.3	1.6	24.5	1.0	0.387	12.5	1,100
	70	19	11.0	2.5	1.0	21.4	0.3	1.7	26.5	1.1	0.268	12.5	1,380
	95	19	12.9	2.5	1.0	23.3	0.3	1.8	28.6	1.2	0.193	12.5	1,700
	120	37	14.5	2.5	1.0	24.9	0.3	1.9	30.4	1.2	0.153	12.5	2,000
	150	37	16.2	2.5	1.0	26.5	0.3	1.9	32.0	1.3	0.124	12.5	2,320
	185	37	18.0	2.5	1.2	28.7	0.3	2.0	34.4	1.3	0.0991	12.5	2,770
	240	61	20.6	2.6	1.2	31.6	0.4	2.1	38.0	1.4	0.0754	12.5	3,530
	300	61	23.1	2.8	1.2	34.4	0.4	2.3	41.2	1.5	0.0601	12.5	4,270
	400	61	26.1	3.0	1.4	38.6	0.4	2.4	45.6	1.7	0.0470	12.5	5,410
	500	61	29.2	3.2	1.4	41.7	0.4	2.5	48.9	1.8	0.0366	12.5	6,390
630	91	33.2	3.2	1.4	45.9	0.4	2.7	53.5	1.9	0.0283	12.5	8,030	
3	10	7	4.2	2.5	1.2	29.7	0.3	2.0	35.4	1.4	1.830	12.5	1,620
	16	7	5.3	2.5	1.2	31.8	0.4	2.2	38.4	1.5	1.150	12.5	2,030
	25	7	6.6	2.5	1.2	34.6	0.4	2.3	41.4	1.5	0.727	12.5	2,470
	35	7	7.9	2.5	1.2	37.2	0.4	2.4	44.2	1.6	0.524	12.5	2,930
	50	19	9.1	2.5	1.4	40.4	0.4	2.5	47.6	1.7	0.387	12.5	3,510
	70	19	11.0	2.5	1.4	44.3	0.4	2.7	51.9	1.9	0.268	12.5	4,390
	95	19	12.9	2.5	1.6	48.8	0.4	2.8	56.6	2.0	0.193	12.5	5,470
	120	37	14.5	2.5	1.6	52.2	0.4	3.0	60.4	2.1	0.153	12.5	6,450
	150	37	16.2	2.5	1.6	55.7	0.4	3.1	64.1	2.2	0.124	12.5	7,490
	185	37	18.0	2.5	1.6	59.5	0.4	3.3	68.3	2.3	0.0991	12.5	8,850
	240	61	20.6	2.6	1.8	66.2	0.4	3.5	75.4	2.6	0.0754	12.5	11,080

6/10kV TFOI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner covering	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance			
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	kV/5min	kg/km	
1	16	7	5.3	3.4	1.0	17.6	0.3	1.6	22.5	1.0	1.150	21	750
	25	7	6.6	3.4	1.0	18.9	0.3	1.6	23.8	1.0	0.727	21	890
	35	7	7.9	3.4	1.0	20.1	0.3	1.7	25.2	1.1	0.524	21	1,040
	50	19	9.1	3.4	1.0	21.4	0.3	1.7	26.5	1.1	0.387	21	1,200
	70	19	11.0	3.4	1.0	23.2	0.3	1.8	28.5	1.2	0.268	21	1,480
	95	19	12.9	3.4	1.0	25.1	0.3	1.9	30.6	1.2	0.193	21	1,810
	120	37	14.5	3.4	1.0	26.7	0.3	1.9	32.2	1.3	0.153	21	2,100
	150	37	16.2	3.4	1.2	28.7	0.3	2.0	34.4	1.3	0.124	21	2,470
	185	37	18.0	3.4	1.2	30.5	0.4	2.1	36.9	1.4	0.0991	21	2,980
	240	61	20.6	3.4	1.2	33.2	0.4	2.2	39.8	1.5	0.0754	21	3,650
	300	61	23.1	3.4	1.2	35.6	0.4	2.3	42.4	1.6	0.0601	21	4,340
	400	61	26.1	3.4	1.4	39.4	0.4	2.5	46.6	1.7	0.0470	21	5,480
	500	61	29.2	3.4	1.4	42.1	0.4	2.6	49.5	1.8	0.0366	21	6,430
	630	91	33.2	3.4	1.4	46.3	0.4	2.7	53.9	1.9	0.0283	21	8,040
3	16	7	5.3	3.4	1.2	35.7	0.4	2.3	42.5	1.6	1.150	21	2,330
	25	7	6.6	3.4	1.4	38.9	0.4	2.4	45.9	1.7	0.727	21	2,840
	35	7	7.9	3.4	1.4	41.5	0.4	2.5	48.7	1.8	0.524	21	3,310
	50	19	9.1	3.4	1.4	44.3	0.4	2.7	51.9	1.9	0.387	21	3,890
	70	19	11.0	3.4	1.6	48.6	0.4	2.8	56.4	2.0	0.268	21	4,820
	95	19	12.9	3.4	1.6	52.6	0.4	3.0	60.8	2.1	0.193	21	5,900
	120	37	14.5	3.4	1.6	56.1	0.4	3.1	64.5	2.2	0.153	21	6,880
	150	37	16.2	3.4	1.6	59.5	0.4	3.3	68.3	2.3	0.124	21	7,960
	185	37	18.0	3.4	1.8	63.8	0.4	3.4	72.8	2.5	0.0991	21	9,390
	240	61	20.6	3.4	1.8	69.6	0.4	3.7	79.2	2.7	0.0754	21	11,570

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

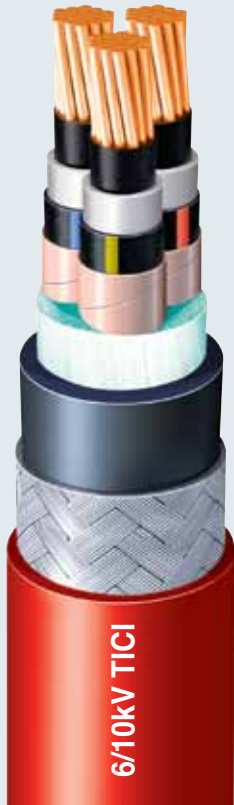
Technical data

Flame retardant

High Voltage Power Cable

8.7/15kV TFOI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner covering	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance			
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	mm	±mm	Ω/km	kV/5min	kg/km
1	25	7	6.6	4.5	1.0	21.1	0.3	1.7	26.2	1.1	0.727	30.5	1,020
	35	7	7.9	4.5	1.0	22.3	0.3	1.8	27.6	1.1	0.524	30.5	1,170
	50	19	9.1	4.5	1.0	23.6	0.3	1.8	28.9	1.2	0.387	30.5	1,340
	70	19	11.0	4.5	1.0	25.4	0.3	1.9	30.9	1.2	0.268	30.5	1,630
	95	19	12.9	4.5	1.2	27.7	0.3	2.0	33.4	1.3	0.193	30.5	2,000
	120	37	14.5	4.5	1.2	29.3	0.3	2.0	35.0	1.4	0.153	30.5	2,300
	150	37	16.2	4.5	1.2	30.9	0.4	2.1	37.3	1.4	0.124	30.5	2,730
	185	37	18.0	4.5	1.2	32.7	0.4	2.2	39.3	1.5	0.0991	30.5	3,180
	240	61	20.6	4.5	1.2	35.4	0.4	2.3	42.2	1.6	0.0754	30.5	3,860
	300	61	23.1	4.5	1.4	38.2	0.4	2.4	45.2	1.7	0.0601	30.5	4,600
	400	61	26.1	4.5	1.4	41.6	0.4	2.5	48.8	1.8	0.0470	30.5	5,690
	500	61	29.2	4.5	1.4	44.3	0.4	2.7	51.9	1.9	0.0366	30.5	6,680
630	91	33.2	4.5	1.6	48.9	0.4	2.8	56.7	2.0	0.0283	30.5	8,360	
3	25	7	6.6	4.5	1.4	43.6	0.4	2.6	51.0	1.8	0.727	30.5	3,280
	35	7	7.9	4.5	1.4	46.2	0.4	2.7	53.8	1.9	0.524	30.5	3,770
	50	19	9.1	4.5	1.6	49.4	0.4	2.9	57.4	2.0	0.387	30.5	4,430
	70	19	11.0	4.5	1.6	53.3	0.4	3.0	61.5	2.1	0.268	30.5	5,340
	95	19	12.9	4.5	1.6	57.4	0.4	3.2	66.0	2.3	0.193	30.5	6,460
	120	37	14.5	4.5	1.6	60.8	0.4	3.3	69.6	2.4	0.153	30.5	7,460
	150	37	16.2	4.5	1.8	64.7	0.4	3.5	73.9	2.5	0.124	30.5	8,640
	185	37	18.0	4.5	1.8	68.6	0.4	3.6	78.0	2.6	0.0991	30.5	10,040
240	61	20.6	4.5	1.8	74.4	0.4	3.9	84.4	2.8	0.0754	30.5	12,270	



Cable Designation

3.6/6kV TIOI, 6/10kV TIOI, 8.7/15kV TIOI
3.6/6kV TICI, 6/10kV TICI, 8.7/15kV TICI

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-354
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : GSA C22.2 No. 2556 or IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wire as per IEC 60228, Class 2
	Conductor screen		- Semi-conducting layer (tape / compound)
	Insulation	T	- XLPE as per IEC 60092-351
	Insulation screen		- Non-metallic part : Semi-conducting layer (tape / compound) - Metallic part : Copper tape with about 0.1mm thickness - A suitable separator tape(s) may be applied over the metallic part
	Cabling		- Three metallic wrapped conductors shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable
	Inner sheath	I	- SHF1 as per IEC 60092-359
	Armor	O (C)	- Braid of plain annealed copper wire(o) or galvanized steel wire(c) - Coverage density : Min. 90%
	Outer sheath	I	- SHF1 as per IEC 60092-359 - Outer sheath color : Red
	Core identification		- Colored tape shall be inserted under metallic screen 3C : Red, Yellow, Blue

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

Flame retardant High Voltage Power Cable

3.6/6kV TIOI, 3.6/6kV TICI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance			
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	kV/5min	kg/km	
1	10	7	4.2	2.5	1.3	15.5	0.3	1.0	19.2	0.9	1.830	12.5	560
	16	7	5.3	2.5	1.3	16.4	0.3	1.0	20.1	0.9	1.150	12.5	650
	25	7	6.6	2.5	1.4	17.9	0.3	1.1	21.8	1.0	0.727	12.5	800
	35	7	7.9	2.5	1.4	19.1	0.3	1.1	23.0	1.0	0.524	12.5	940
	50	19	9.1	2.5	1.5	20.6	0.3	1.2	24.7	1.0	0.387	12.5	1,120
	70	19	11.0	2.5	1.6	22.6	0.3	1.2	26.7	1.1	0.268	12.5	1,390
	95	19	12.9	2.5	1.6	24.5	0.3	1.3	28.8	1.2	0.193	12.5	1,720
	120	37	14.5	2.5	1.7	26.3	0.3	1.3	30.6	1.2	0.153	12.5	2,020
	150	37	16.2	2.5	1.8	28.1	0.3	1.3	32.4	1.3	0.124	12.5	2,350
	185	37	18.0	2.5	1.8	29.9	0.3	1.4	34.4	1.3	0.0991	12.5	2,780
	240	61	20.6	2.6	2.0	33.2	0.4	1.5	38.4	1.5	0.0754	12.5	3,580
	300	61	23.1	2.8	2.1	36.2	0.4	1.6	41.6	1.5	0.0601	12.5	4,310
	400	61	26.1	3.0	2.2	40.2	0.4	1.7	45.8	1.7	0.0470	12.5	5,440
	500	61	29.2	3.2	2.4	43.7	0.4	1.7	49.3	1.8	0.0366	12.5	6,450
630	91	33.2	3.2	2.5	48.1	0.4	1.9	54.1	1.9	0.0283	12.5	8,110	
3	10	7	4.2	2.5	1.9	31.3	0.4	1.4	36.3	1.4	1.830	12.5	1,710
	16	7	5.3	2.5	2.0	33.6	0.4	1.5	38.8	1.5	1.150	12.5	2,030
	25	7	6.6	2.5	2.1	36.6	0.4	1.6	42.0	1.6	0.727	12.5	2,500
	35	7	7.9	2.5	2.2	39.4	0.4	1.6	44.8	1.6	0.524	12.5	2,950
	50	19	9.1	2.5	2.3	42.4	0.4	1.7	48.0	1.7	0.387	12.5	3,510
	70	19	11.0	2.5	2.5	46.7	0.4	1.8	52.5	1.9	0.268	12.5	4,420
	95	19	12.9	2.5	2.6	51.0	0.4	1.9	57.0	2.0	0.193	12.5	5,470
	120	37	14.5	2.5	2.8	54.8	0.4	2.0	61.0	2.1	0.153	12.5	6,480
	150	37	16.2	2.5	2.9	58.5	0.4	2.1	64.9	2.2	0.124	12.5	7,540
	185	37	18.0	2.5	3.1	62.7	0.4	2.2	69.3	2.4	0.0991	12.5	8,940
240	61	20.6	2.6	3.3	69.4	0.4	2.4	76.4	2.6	0.0754	12.5	11,180	

6/10kV TIOI, 6/10kV TICI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance			
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	kV/5min	kg/km	
1	16	7	5.3	3.4	1.4	18.4	0.3	1.1	22.3	1.0	1.150	21	750
	25	7	6.6	3.4	1.5	19.9	0.3	1.1	23.8	1.0	0.727	21	890
	35	7	7.9	3.4	1.5	21.1	0.3	1.2	25.2	1.1	0.524	21	1,040
	50	19	9.1	3.4	1.6	22.6	0.3	1.2	26.7	1.1	0.387	21	1,220
	70	19	11.0	3.4	1.6	24.4	0.3	1.2	28.5	1.2	0.268	21	1,480
	95	19	12.9	3.4	1.7	26.5	0.3	1.3	30.8	1.2	0.193	21	1,830
	120	37	14.5	3.4	1.8	28.3	0.3	1.3	32.6	1.3	0.153	21	2,140
	150	37	16.2	3.4	1.8	29.9	0.3	1.4	34.4	1.3	0.124	21	2,470
	185	37	18.0	3.4	1.9	31.9	0.4	1.4	36.9	1.4	0.0991	21	2,990
	240	61	20.6	3.4	2.0	34.8	0.4	1.5	40.0	1.5	0.0754	21	3,680
	300	61	23.1	3.4	2.1	37.4	0.4	1.6	42.8	1.6	0.0601	21	4,390
	400	61	26.1	3.4	2.3	41.2	0.4	1.7	46.8	1.7	0.0470	21	5,510
	500	61	29.2	3.4	2.4	44.1	0.4	1.8	49.9	1.8	0.0366	21	6,480
	630	91	33.2	3.4	2.5	48.5	0.4	1.9	54.5	1.9	0.0283	21	8,130
3	16	7	5.3	3.4	2.1	37.7	0.4	1.6	43.1	1.6	1.150	21	2,350
	25	7	6.6	3.4	2.2	40.7	0.4	1.7	46.3	1.7	0.727	21	2,840
	35	7	7.9	3.4	2.3	43.5	0.4	1.7	49.1	1.8	0.524	21	3,310
	50	19	9.1	3.4	2.5	46.7	0.4	1.8	52.5	1.9	0.387	21	3,910
	70	19	11.0	3.4	2.6	50.8	0.4	1.9	56.8	2.0	0.268	21	4,820
	95	19	12.9	3.4	2.8	55.2	0.4	2.0	61.4	2.1	0.193	21	5,930
	120	37	14.5	3.4	2.9	58.9	0.4	2.1	65.3	2.3	0.153	21	6,940
	150	37	16.2	3.4	3.1	62.7	0.4	2.2	69.3	2.4	0.124	21	8,050
	185	37	18.0	3.4	3.2	66.8	0.4	2.3	73.6	2.5	0.0991	21	9,460
	240	61	20.6	3.4	3.4	73.0	0.4	2.5	80.2	2.7	0.0754	21	11,680

8.7/15kV TIOI, 8.7/15kV TICI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance			
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	kV/5min	kg/km	
1	25	7	6.6	4.5	1.6	22.3	0.3	1.2	26.4	1.1	0.727	30.5	1,030
	35	7	7.9	4.5	1.6	23.5	0.3	1.2	27.6	1.1	0.524	30.5	1,180
	50	19	9.1	4.5	1.7	25.0	0.3	1.3	29.3	1.2	0.387	30.5	1,370
	70	19	11.0	4.5	1.7	26.8	0.3	1.3	31.1	1.2	0.268	30.5	1,650
	95	19	12.9	4.5	1.8	28.9	0.3	1.4	33.4	1.3	0.193	30.5	2,010
	120	37	14.5	4.5	1.9	30.7	0.4	1.4	35.7	1.4	0.153	30.5	2,410
	150	37	16.2	4.5	1.9	32.3	0.4	1.5	37.5	1.4	0.124	30.5	2,760
	185	37	18.0	4.5	2.0	34.3	0.4	1.5	39.5	1.5	0.0991	30.5	3,200
	240	61	20.6	4.5	2.1	37.2	0.4	1.6	42.6	1.6	0.0754	30.5	3,910
	300	61	23.1	4.5	2.2	39.8	0.4	1.6	45.2	1.7	0.0601	30.5	4,610
	400	61	26.1	4.5	2.3	43.4	0.4	1.7	49.0	1.8	0.0470	30.5	5,730
	500	61	29.2	4.5	2.5	46.5	0.4	1.8	52.3	1.9	0.0366	30.5	6,740
630	91	33.2	4.5	2.6	50.9	0.4	1.9	56.9	2.0	0.0283	30.5	8,400	
3	25	7	6.6	4.5	2.4	45.8	0.4	1.8	51.6	1.8	0.727	30.5	3,300
	35	7	7.9	4.5	2.5	48.6	0.4	1.9	54.6	1.9	0.524	30.5	3,820
	50	19	9.1	4.5	2.6	51.6	0.4	1.9	57.6	2.0	0.387	30.5	4,400
	70	19	11.0	4.5	2.8	55.9	0.4	2.0	62.1	2.2	0.268	30.5	5,370
	95	19	12.9	4.5	3.0	60.4	0.4	2.2	67.0	2.3	0.193	30.5	6,550
	120	37	14.5	4.5	3.1	64.0	0.4	2.3	70.8	2.4	0.153	30.5	7,580
	150	37	16.2	4.5	3.2	67.7	0.4	2.3	74.5	2.5	0.124	30.5	8,680
	185	37	18.0	4.5	3.4	72.0	0.4	2.5	79.2	2.7	0.0991	30.5	10,180
240	61	20.6	4.5	3.6	78.2	0.4	2.6	85.6	2.9	0.0754	30.5	12,420	

HV Power Cable

LV Power & Control Cable

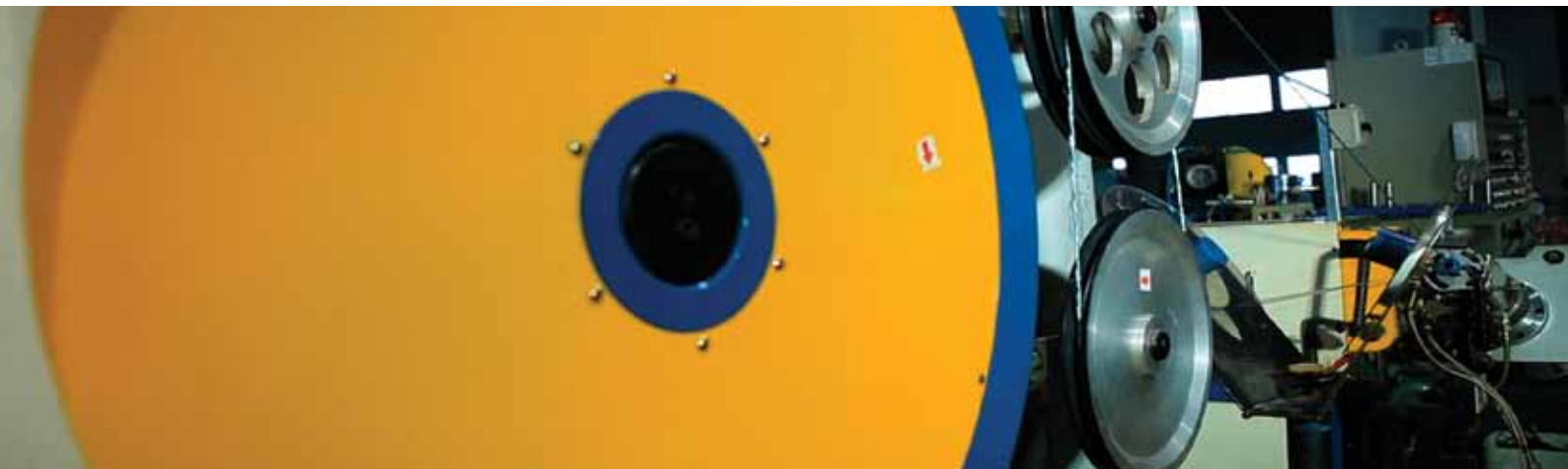
VFD Cable

Instrumentation & Communication Cable

Technical data



LV Power & Control Cable

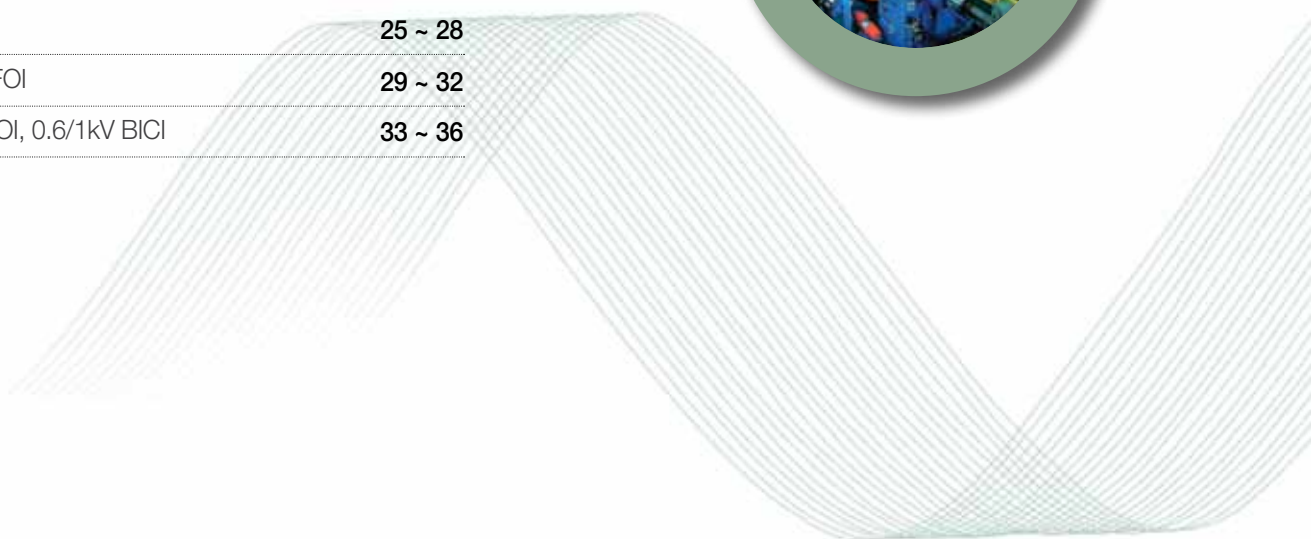


Flame Retardant

0.6/1kV TI	13 ~ 16
0.6/1kV TFOI	17 ~ 20
0.6/1kV TIOI, 0.6/1kV TICI	21 ~ 24

Fire Resistance

0.6/1kV BI	25 ~ 28
0.6/1kV BFOI	29 ~ 32
0.6/1kV BIOI, 0.6/1kV BICI	33 ~ 36



Flame retardant

LV Power & Control Cable

E-Route®
IEC 60092-350, 353, 354, 376



Cable Designation

0.6/1kV TI

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-353
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail																					
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2 - A suitable tape may be applied on the conductor																					
	Insulation	T	- XLPE as per IEC 60092-351																					
	Cabling		- Insulated conductors shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable																					
	Sheath	I	- SHF1 as per IEC 60092-359 - Sheath color : Black																					
Identification			<table border="1"> <thead> <tr> <th>No. of Cores</th> <th>Without Earth core</th> <th>With Earth core</th> </tr> </thead> <tbody> <tr> <td>1C</td> <td>Black</td> <td>-</td> </tr> <tr> <td>2C</td> <td>Red, Black</td> <td>-</td> </tr> <tr> <td>3C / 2C + E</td> <td>Red, Yellow, Blue</td> <td>Red, Yellow, G/Y</td> </tr> <tr> <td>4C / 3C + E</td> <td>Red, Yellow, Blue, Black</td> <td>Red, Yellow, Blue, G/Y</td> </tr> <tr> <td>5C / 4C + E</td> <td>Black No. on white insulation</td> <td>Red, Yellow, Blue, Black, G/Y</td> </tr> <tr> <td>5C and over</td> <td>Black number on white insulation</td> <td></td> </tr> </tbody> </table> <p>Note) 1. G/Y means green base color with yellow stripe. 2. Control cable (2C, 3C and 4C) shall be identified by the number printing.</p>	No. of Cores	Without Earth core	With Earth core	1C	Black	-	2C	Red, Black	-	3C / 2C + E	Red, Yellow, Blue	Red, Yellow, G/Y	4C / 3C + E	Red, Yellow, Blue, Black	Red, Yellow, Blue, G/Y	5C / 4C + E	Black No. on white insulation	Red, Yellow, Blue, Black, G/Y	5C and over	Black number on white insulation	
No. of Cores	Without Earth core	With Earth core																						
1C	Black	-																						
2C	Red, Black	-																						
3C / 2C + E	Red, Yellow, Blue	Red, Yellow, G/Y																						
4C / 3C + E	Red, Yellow, Blue, Black	Red, Yellow, Blue, G/Y																						
5C / 4C + E	Black No. on white insulation	Red, Yellow, Blue, Black, G/Y																						
5C and over	Black number on white insulation																							

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Flame retardant

LV Power & Control Cable

0.6/1kV TI

No. of Cores	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km
1	1.5	7	1.7	0.7	1.0	5.3	0.5	12.1	1,030	3,500	40
	2.5	7	2.2	0.7	1.0	5.7	0.5	7.41	850	3,500	60
	4	7	2.7	0.7	1.0	6.3	0.5	4.61	700	3,500	70
	6	7	3.3	0.7	1.0	6.8	0.5	3.08	600	3,500	100
	10	7	4.2	0.7	1.0	7.8	0.5	1.83	480	3,500	140
	16	7	5.3	0.7	1.1	9.0	0.6	1.15	390	3,500	210
	25	7	6.6	0.9	1.1	10.7	0.6	0.727	400	3,500	320
	35	7	7.9	0.9	1.2	12.1	0.7	0.524	350	3,500	420
	50	19	9.1	1.0	1.2	13.6	0.7	0.387	330	3,500	550
	70	19	11.0	1.1	1.3	15.8	0.8	0.268	300	3,500	780
	95	19	12.9	1.1	1.4	17.9	0.8	0.193	260	3,500	1,050
	120	37	14.5	1.2	1.5	19.9	0.9	0.153	250	3,500	1,310
	150	37	16.2	1.4	1.5	21.9	1.0	0.124	270	3,500	1,600
	185	37	18.0	1.6	1.6	24.3	1.0	0.0991	270	3,500	2,000
	240	61	20.6	1.7	1.8	27.6	1.1	0.0754	250	3,500	2,600
300	61	23.1	1.8	1.9	30.4	1.2	0.0601	240	3,500	3,230	
2	1.5	7	1.7	0.7	1.0	8.3	0.5	12.1	1,030	3,500	80
	2.5	7	2.2	0.7	1.1	9.3	0.6	7.41	850	3,500	110
	4	7	2.7	0.7	1.1	10.5	0.6	4.61	700	3,500	160
	6	7	3.3	0.7	1.2	11.7	0.7	3.08	600	3,500	210
	10	7	4.2	0.7	1.2	13.7	0.7	1.83	480	3,500	310
	16	7	5.3	0.7	1.3	15.9	0.8	1.15	390	3,500	450
	25	7	6.6	0.9	1.5	19.7	0.9	0.727	400	3,500	710
	35	7	7.9	0.9	1.6	22.3	1.0	0.524	350	3,500	940
	50	19	9.1	1.0	1.7	25.5	1.1	0.387	330	3,500	1,240
	70	19	11.0	1.1	1.8	29.7	1.2	0.268	300	3,500	1,740
	95	19	12.9	1.1	2.0	33.9	1.3	0.193	260	3,500	2,350
	120	37	14.5	1.2	2.1	37.7	1.4	0.153	250	3,500	2,920
150	37	16.2	1.4	2.3	42.1	1.6	0.124	270	3,500	3,610	
185	37	18.0	1.6	2.5	46.9	1.7	0.0991	270	3,500	4,500	
2C+E	1.5	7	1.7	0.7	1.1	9.0	0.6	12.1	1,030	3,500	110
2C+E	2.5	7	2.2	0.7	1.1	9.8	0.6	7.41	850	3,500	140
2C+E	4	7	2.7	0.7	1.1	11.1	0.6	4.61	700	3,500	200
2C+E	6	7	3.3	0.7	1.2	12.4	0.7	3.08	600	3,500	270
2C+E	10	7	4.2	0.7	1.3	14.8	0.7	1.83	480	3,500	420
2C+E	16	7	5.3	0.7	1.4	17.1	0.8	1.15	390	3,500	620
2C	25	7	6.6	0.9	1.5	20.3	0.9	0.727	400	3,500	870
Earth	16	7	5.3	0.7							
2C	35	7	7.9	0.9	1.6	23.3	1.0	0.524	350	3,500	1,200
Earth	25	7	6.6	0.9							
2C	50	19	9.1	1.0	1.7	26.2	1.1	0.387	330	3,500	1,490
Earth	25	7	6.6	0.9							
2C	70	19	11.0	1.1	1.9	30.6	1.2	0.268	300	3,500	2,090
Earth	35	7	7.9	0.9							
2C	95	19	12.9	1.1	2.0	34.7	1.3	0.193	260	3,500	2,800
Earth	50	19	9.1	1.0							
2C	120	37	14.5	1.2	2.2	39.1	1.5	0.153	250	3,500	3,600
Earth	70	19	11.0	1.1							
2C	150	37	16.2	1.4	2.3	43.5	1.6	0.124	270	3,500	4,510
Earth	95	19	12.9	1.1							
2C	185	37	18.0	1.6	2.5	47.8	1.7	0.0991	270	3,500	5,380
Earth	95	19	12.9	1.1							

0.6/1kV TI

No. of Cores	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km
3	1.5	7	1.7	0.7	1.1	9.0	0.6	12.1	1,030	3,500	110
	2.5	7	2.2	0.7	1.1	9.8	0.6	7.41	850	3,500	140
	4	7	2.7	0.7	1.1	11.1	0.6	4.61	700	3,500	200
	6	7	3.3	0.7	1.2	12.4	0.7	3.08	600	3,500	270
	10	7	4.2	0.7	1.3	14.8	0.7	1.83	480	3,500	420
	16	7	5.3	0.7	1.4	17.1	0.8	1.15	390	3,500	620
	25	7	6.6	0.9	1.5	21.0	0.9	0.727	400	3,500	970
	35	7	7.9	0.9	1.6	23.8	1.0	0.524	350	3,500	1,300
	50	19	9.1	1.0	1.7	27.2	1.1	0.387	330	3,500	1,710
	70	19	11.0	1.1	1.9	31.9	1.3	0.268	300	3,500	2,430
	95	19	12.9	1.1	2.1	36.4	1.4	0.193	260	3,500	3,290
	120	37	14.5	1.2	2.2	40.5	1.5	0.153	250	3,500	4,100
	150	37	16.2	1.4	2.4	45.2	1.7	0.124	270	3,500	5,060
	185	37	18.0	1.6	2.6	50.3	1.8	0.0991	270	3,500	6,310
240	61	20.6	1.7	2.8	57.0	2.0	0.0754	250	3,500	8,200	
3C+E	1.5	7	1.7	0.7	1.1	9.7	0.6	12.1	1,030	3,500	130
3C+E	2.5	7	2.2	0.7	1.1	10.7	0.6	7.41	850	3,500	180
3C+E	4	7	2.7	0.7	1.2	12.4	0.7	4.61	700	3,500	260
3C+E	6	7	3.3	0.7	1.2	13.6	0.7	3.08	600	3,500	340
3C+E	10	7	4.2	0.7	1.3	16.2	0.8	1.83	480	3,500	530
3C+E	16	7	5.3	0.7	1.4	18.8	0.9	1.15	390	3,500	790
3C	25	7	6.6	0.9	1.6	22.7	1.0	0.727	400	3,500	1,160
Earth	16	7	5.3	0.7							
3C	35	7	7.9	0.9	1.7	26.0	1.1	0.524	350	3,500	1,590
Earth	25	7	6.6	0.9							
3C	50	19	9.1	1.0	1.8	29.3	1.2	0.387	330	3,500	2,010
Earth	25	7	6.6	0.9							
3C	70	19	11.0	1.1	2.0	34.2	1.3	0.268	300	3,500	2,830
Earth	35	7	7.9	0.9							
3C	95	19	12.9	1.1	2.2	39.1	1.5	0.193	260	3,500	3,830
Earth	50	19	9.1	1.0							
3C	120	37	14.5	1.2	2.4	43.9	1.6	0.153	250	3,500	4,880
Earth	70	19	11.0	1.1							
3C	150	37	16.2	1.4	2.5	48.9	1.8	0.124	270	3,500	6,080
Earth	95	19	12.9	1.1							
3C	185	37	18.0	1.6	2.7	53.8	1.9	0.0991	270	3,500	7,340
Earth	95	19	12.9	1.1							
3C	240	61	20.6	1.7	3.0	61.0	2.1	0.0754	250	3,500	9,520
Earth	120	37	14.5	1.2							
4	1.5	7	1.7	0.7	1.1	9.7	0.6	12.1	1,030	3,500	130
	2.5	7	2.2	0.7	1.1	10.7	0.6	7.41	850	3,500	180
	4	7	2.7	0.7	1.2	12.4	0.7	4.61	700	3,500	260
	6	7	3.3	0.7	1.2	13.6	0.7	3.08	600	3,500	340
	10	7	4.2	0.7	1.3	16.2	0.8	1.83	480	3,500	530
	16	7	5.3	0.7	1.4	18.8	0.9	1.15	390	3,500	790
	25	7	6.6	0.9	1.6	23.3	1.0	0.727	400	3,500	1,260
	35	7	7.9	0.9	1.7	26.4	1.1	0.524	350	3,500	1,690
	50	19	9.1	1.0	1.9	30.4	1.2	0.387	330	3,500	2,250
	70	19	11.0	1.1	2.0	35.4	1.4	0.268	300	3,500	3,170
	95	19	12.9	1.1	2.2	40.4	1.5	0.193	260	3,500	4,290
	120	37	14.5	1.2	2.4	45.2	1.7	0.153	250	3,500	5,380
	150	37	16.2	1.4	2.6	50.4	1.8	0.124	270	3,500	6,630
	185	37	18.0	1.6	2.8	56.1	2.0	0.0991	270	3,500	8,270

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Flame retardant

LV Power & Control Cable

0.6/1kV TI

No. of Cores	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km
2	1.0	7	1.4	0.7	1.0	7.7	0.5	18.1	1,180	3,500	70
3	1.0	7	1.4	0.7	1.0	8.1	0.5	18.1	1,180	3,500	80
4	1.0	7	1.4	0.7	1.1	9.0	0.6	18.1	1,180	3,500	110
5	1.0	7	1.4	0.7	1.1	9.8	0.6	18.1	1,180	3,500	130
7	1.0	7	1.4	0.7	1.1	10.6	0.6	18.1	1,180	3,500	160
9	1.0	7	1.4	0.7	1.2	12.5	0.7	18.1	1,180	3,500	210
12	1.0	7	1.4	0.7	1.3	14.1	0.7	18.1	1,180	3,500	260
16	1.0	7	1.4	0.7	1.3	15.6	0.8	18.1	1,180	3,500	330
19	1.0	7	1.4	0.7	1.3	16.4	0.8	18.1	1,180	3,500	380
24	1.0	7	1.4	0.7	1.5	19.5	0.9	18.1	1,180	3,500	500
27	1.0	7	1.4	0.7	1.5	19.9	0.9	18.1	1,180	3,500	540
33	1.0	7	1.4	0.7	1.5	21.4	0.9	18.1	1,180	3,500	630
37	1.0	7	1.4	0.7	1.6	22.4	1.0	18.1	1,180	3,500	700
44	1.0	7	1.4	0.7	1.7	25.3	1.1	18.1	1,180	3,500	850
2	1.5	7	1.7	0.7	1.0	8.3	0.5	12.1	1,030	3,500	80
3	1.5	7	1.7	0.7	1.1	9.0	0.6	12.1	1,030	3,500	110
4	1.5	7	1.7	0.7	1.1	9.7	0.6	12.1	1,030	3,500	130
5	1.5	7	1.7	0.7	1.1	10.6	0.6	12.1	1,030	3,500	160
7	1.5	7	1.7	0.7	1.2	11.7	0.7	12.1	1,030	3,500	200
9	1.5	7	1.7	0.7	1.2	13.5	0.7	12.1	1,030	3,500	260
12	1.5	7	1.7	0.7	1.3	15.4	0.8	12.1	1,030	3,500	340
16	1.5	7	1.7	0.7	1.4	17.2	0.8	12.1	1,030	3,500	430
19	1.5	7	1.7	0.7	1.4	18.1	0.8	12.1	1,030	3,500	490
24	1.5	7	1.7	0.7	1.5	21.3	0.9	12.1	1,030	3,500	640
27	1.5	7	1.7	0.7	1.5	21.8	1.0	12.1	1,030	3,500	690
33	1.5	7	1.7	0.7	1.6	23.6	1.0	12.1	1,030	3,500	830
37	1.5	7	1.7	0.7	1.6	24.5	1.0	12.1	1,030	3,500	910
44	1.5	7	1.7	0.7	1.8	27.9	1.1	12.1	1,030	3,500	1,120
2	2.5	7	2.2	0.7	1.1	9.3	0.6	7.41	850	3,500	110
3	2.5	7	2.2	0.7	1.1	9.8	0.6	7.41	850	3,500	140
4	2.5	7	2.2	0.7	1.1	10.7	0.6	7.41	850	3,500	180
5	2.5	7	2.2	0.7	1.2	11.9	0.7	7.41	850	3,500	220
7	2.5	7	2.2	0.7	1.2	12.9	0.7	7.41	850	3,500	280
9	2.5	7	2.2	0.7	1.3	15.2	0.8	7.41	850	3,500	370
12	2.5	7	2.2	0.7	1.4	17.2	0.8	7.41	850	3,500	480
16	2.5	7	2.2	0.7	1.4	19.1	0.9	7.41	850	3,500	610
19	2.5	7	2.2	0.7	1.5	20.3	0.9	7.41	850	3,500	710
24	2.5	7	2.2	0.7	1.6	23.9	1.0	7.41	850	3,500	910
27	2.5	7	2.2	0.7	1.6	24.4	1.0	7.41	850	3,500	1,000
33	2.5	7	2.2	0.7	1.7	26.5	1.1	7.41	850	3,500	1,200
37	2.5	7	2.2	0.7	1.8	27.7	1.1	7.41	850	3,500	1,330
44	2.5	7	2.2	0.7	1.9	31.3	1.2	7.41	850	3,500	1,610



Cable Designation

0.6/1kV TFOI

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-353
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail																				
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2 - A suitable tape may be applied on the conductor																				
	Insulation	T	- XLPE as per IEC 60092-351																				
	Cabling		- Insulated conductors shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable																				
	Inner covering	F	- Non-hygroscopic material																				
	Armor	O	- Braid of plain annealed copper wire - Coverage density : Min. 90%																				
	Sheath	I	- SHF1 as per IEC 60092-359 - Sheath color : Black																				
	Identification		<table border="1"> <thead> <tr> <th>No. of Cores</th> <th>Without Earth core</th> <th>With Earth core</th> </tr> </thead> <tbody> <tr> <td>1C</td> <td>Black</td> <td>-</td> </tr> <tr> <td>2C</td> <td>Red, Black</td> <td>-</td> </tr> <tr> <td>3C / 2C + E</td> <td>Red, Yellow, Blue</td> <td>Red, Yellow, G/Y</td> </tr> <tr> <td>4C / 3C + E</td> <td>Red, Yellow, Blue, Black</td> <td>Red, Yellow, Blue, G/Y</td> </tr> <tr> <td>5C / 4C + E</td> <td>Black No. on white insulation</td> <td>Red, Yellow, Blue, Black, G/Y</td> </tr> <tr> <td>5C and over</td> <td>Black number on white insulation</td> <td></td> </tr> </tbody> </table>	No. of Cores	Without Earth core	With Earth core	1C	Black	-	2C	Red, Black	-	3C / 2C + E	Red, Yellow, Blue	Red, Yellow, G/Y	4C / 3C + E	Red, Yellow, Blue, Black	Red, Yellow, Blue, G/Y	5C / 4C + E	Black No. on white insulation	Red, Yellow, Blue, Black, G/Y	5C and over	Black number on white insulation
No. of Cores	Without Earth core	With Earth core																					
1C	Black	-																					
2C	Red, Black	-																					
3C / 2C + E	Red, Yellow, Blue	Red, Yellow, G/Y																					
4C / 3C + E	Red, Yellow, Blue, Black	Red, Yellow, Blue, G/Y																					
5C / 4C + E	Black No. on white insulation	Red, Yellow, Blue, Black, G/Y																					
5C and over	Black number on white insulation																						

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

Flame retardant

LV Power & Control Cable

0.6/1kV TFOI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner covering (lapped)	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	±mm	mm	Ω/km	MΩ-km	V/5min	kg/km
1	1.5	7	1.7	0.7	0.4	3.4	0.2	1.0	6.5	0.5	12.1	1,030	3,500	70
	2.5	7	2.2	0.7	0.4	3.8	0.2	1.0	6.9	0.5	7.41	850	3,500	80
	4	7	2.7	0.7	0.4	4.4	0.2	1.0	7.5	0.5	4.61	700	3,500	100
	6	7	3.3	0.7	0.4	4.9	0.2	1.0	8.0	0.5	3.08	600	3,500	130
	10	7	4.2	0.7	0.4	5.9	0.2	1.1	9.2	0.6	1.83	480	3,500	180
	16	7	5.3	0.7	0.4	6.9	0.2	1.1	10.2	0.6	1.15	390	3,500	250
	25	7	6.6	0.9	0.4	8.6	0.2	1.2	12.1	0.7	0.727	400	3,500	370
	35	7	7.9	0.9	0.4	9.8	0.2	1.2	13.3	0.7	0.524	350	3,500	480
	50	19	9.1	1.0	0.4	11.3	0.3	1.3	15.3	0.8	0.387	330	3,500	650
	70	19	11.0	1.1	0.4	13.3	0.3	1.4	17.5	0.8	0.268	300	3,500	890
	95	19	12.9	1.1	0.4	15.2	0.3	1.5	19.6	0.9	0.193	260	3,500	1,170
	120	37	14.5	1.2	0.4	17.0	0.3	1.5	21.4	0.9	0.153	250	3,500	1,440
	150	37	16.2	1.4	0.4	19.0	0.3	1.6	23.6	1.0	0.124	270	3,500	1,750
	185	37	18.0	1.6	0.4	21.2	0.3	1.7	26.0	1.1	0.0991	270	3,500	2,160
	240	61	20.6	1.7	0.4	24.1	0.3	1.8	29.1	1.2	0.0754	250	3,500	2,780
300	61	23.1	1.8	0.4	26.7	0.3	1.9	31.9	1.3	0.0601	240	3,500	3,420	
2	1.5	7	1.7	0.7	0.4	6.4	0.2	1.1	9.7	0.6	12.1	1,030	3,500	130
	2.5	7	2.2	0.7	0.4	7.2	0.2	1.1	10.5	0.6	7.41	850	3,500	160
	4	7	2.7	0.7	0.4	8.4	0.2	1.2	11.9	0.7	4.61	700	3,500	210
	6	7	3.3	0.7	0.4	9.4	0.2	1.2	12.9	0.7	3.08	600	3,500	270
	10	7	4.2	0.7	0.4	11.4	0.3	1.3	15.4	0.8	1.83	480	3,500	400
	16	7	5.3	0.7	0.4	13.4	0.3	1.4	17.6	0.8	1.15	390	3,500	560
	25	7	6.6	0.9	0.4	16.8	0.3	1.5	21.2	0.9	0.727	400	3,500	830
	35	7	7.9	0.9	0.4	19.2	0.3	1.6	23.8	1.0	0.524	350	3,500	1,090
	50	19	9.1	1.0	0.4	22.2	0.3	1.7	27.0	1.1	0.387	330	3,500	1,410
	70	19	11.0	1.1	0.4	26.2	0.3	1.9	31.4	1.2	0.268	300	3,500	1,940
	95	19	12.9	1.1	0.4	30.0	0.3	2.1	36.1	1.4	0.193	260	3,500	2,670
120	37	14.5	1.2	0.4	33.6	0.4	2.2	39.9	1.5	0.153	250	3,500	3,280	
150	37	16.2	1.4	0.4	37.6	0.4	2.4	44.3	1.6	0.124	270	3,500	4,010	
185	37	18.0	1.6	0.6	42.4	0.4	2.6	49.5	1.8	0.0991	270	3,500	4,960	
2C+E	1.5	7	1.7	0.7	0.4	6.9	0.2	1.1	10.2	0.6	12.1	1,030	3,500	150
2C+E	2.5	7	2.2	0.7	0.4	7.7	0.2	1.1	11.0	0.6	7.41	850	3,500	190
2C+E	4	7	2.7	0.7	0.4	9.0	0.2	1.2	12.5	0.7	4.61	700	3,500	260
2C+E	6	7	3.3	0.7	0.4	10.0	0.2	1.2	13.5	0.7	3.08	600	3,500	330
2C+E	10	7	4.2	0.7	0.4	12.3	0.3	1.3	16.3	0.8	1.83	480	3,500	520
2C+E	16	7	5.3	0.7	0.4	14.4	0.3	1.4	18.6	0.9	1.15	390	3,500	730
2C	25	7	6.6	0.9	0.4	17.4	0.3	1.5	21.8	1.0	0.727	400	3,500	1,000
Earth	16	7	5.3	0.7										
2C	35	7	7.9	0.9	0.4	20.2	0.3	1.7	25.0	1.1	0.524	350	3,500	1,360
Earth	25	7	6.6	0.9										
2C	50	19	9.1	1.0	0.4	22.9	0.3	1.8	27.9	1.1	0.387	330	3,500	1,670
Earth	25	7	6.6	0.9										
2C	70	19	11.0	1.1	0.4	26.9	0.3	1.9	32.1	1.3	0.268	300	3,500	2,290
Earth	35	7	7.9	0.9										
2C	95	19	12.9	1.1	0.4	30.8	0.4	2.1	36.9	1.4	0.193	260	3,500	3,140
Earth	50	19	9.1	1.0										
2C	120	37	14.5	1.2	0.4	34.8	0.4	2.3	41.3	1.5	0.153	250	3,500	3,970
Earth	70	19	11.0	1.1										
2C	150	37	16.2	1.4	0.4	39.0	0.4	2.4	45.7	1.7	0.124	270	3,500	4,940
Earth	95	19	12.9	1.1										
2C	185	37	18.0	1.6	0.6	43.3	0.4	2.6	50.4	1.8	0.0991	270	3,500	5,870
Earth	95	19	12.9	1.1										

0.6/1kV TFOI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner covering (lapped)	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km	
3	1.5	7	1.7	0.7	0.4	6.9	0.2	1.1	10.2	0.6	12.1	1,030	3,500	150
	2.5	7	2.2	0.7	0.4	7.7	0.2	1.1	11.0	0.6	7.41	850	3,500	190
	4	7	2.7	0.7	0.4	9.0	0.2	1.2	12.5	0.7	4.61	700	3,500	260
	6	7	3.3	0.7	0.4	10.0	0.2	1.2	13.5	0.7	3.08	600	3,500	330
	10	7	4.2	0.7	0.4	12.3	0.3	1.3	16.3	0.8	1.83	480	3,500	520
	16	7	5.3	0.7	0.4	14.4	0.3	1.4	18.6	0.9	1.15	390	3,500	730
	25	7	6.6	0.9	0.4	18.1	0.3	1.6	22.7	1.0	0.727	400	3,500	1,110
	35	7	7.9	0.9	0.4	20.7	0.3	1.7	25.5	1.1	0.524	350	3,500	1,460
	50	19	9.1	1.0	0.4	23.9	0.3	1.8	28.9	1.2	0.387	330	3,500	1,900
	70	19	11.0	1.1	0.4	28.2	0.3	2.0	33.6	1.3	0.268	300	3,500	2,650
	95	19	12.9	1.1	0.4	32.3	0.4	2.2	38.6	1.5	0.193	260	3,500	3,640
	120	37	14.5	1.2	0.4	36.2	0.4	2.3	42.7	1.6	0.153	250	3,500	4,490
	150	37	16.2	1.4	0.6	40.9	0.4	2.5	47.8	1.7	0.124	270	3,500	5,510
	185	37	18.0	1.6	0.6	45.6	0.4	2.7	52.9	1.9	0.0991	270	3,500	6,820
	240	61	20.6	1.7	0.6	51.9	0.4	2.9	59.6	2.1	0.0754	250	3,500	8,770
3C+E	1.5	7	1.7	0.7	0.4	7.6	0.2	1.1	10.9	0.6	12.1	1,030	3,500	180
3C+E	2.5	7	2.2	0.7	0.4	8.6	0.2	1.2	12.1	0.7	7.41	850	3,500	240
3C+E	4	7	2.7	0.7	0.4	9.9	0.2	1.2	13.4	0.7	4.61	700	3,500	310
3C+E	6	7	3.3	0.7	0.4	11.3	0.3	1.3	15.3	0.8	3.08	600	3,500	440
3C+E	10	7	4.2	0.7	0.4	13.7	0.3	1.4	17.9	0.8	1.83	480	3,500	650
3C+E	16	7	5.3	0.7	0.4	16.1	0.3	1.5	20.5	0.9	1.15	390	3,500	920
3C	25	7	6.6	0.9	0.4	19.6	0.3	1.6	24.2	1.0	0.727	400	3,500	1,300
Earth	16	7	5.3	0.7										
3C	35	7	7.9	0.9	0.4	22.7	0.3	1.8	27.7	1.1	0.524	350	3,500	1,770
Earth	25	7	6.6	0.9										
3C	50	19	9.1	1.0	0.4	25.8	0.3	1.9	31.0	1.2	0.387	330	3,500	2,210
Earth	25	7	6.6	0.9										
3C	70	19	11.0	1.1	0.4	30.3	0.4	2.1	36.4	1.4	0.268	300	3,500	3,160
Earth	35	7	7.9	0.9										
3C	95	19	12.9	1.1	0.4	34.8	0.4	2.3	41.3	1.5	0.193	260	3,500	4,200
Earth	50	19	9.1	1.0										
3C	120	37	14.5	1.2	0.4	39.2	0.4	2.4	45.9	1.7	0.153	250	3,500	5,280
Earth	70	19	11.0	1.1										
3C	150	37	16.2	1.4	0.6	44.4	0.4	2.6	51.5	1.8	0.124	270	3,500	6,580
Earth	95	19	12.9	1.1										
3C	185	37	18.0	1.6	0.6	48.9	0.4	2.8	56.4	2.0	0.0991	270	3,500	7,890
Earth	95	19	12.9	1.1										
3C	240	61	20.6	1.7	0.6	55.5	0.4	3.1	63.6	2.2	0.0754	250	3,500	10,130
Earth	120	37	14.5	1.2										
4	1.5	7	1.7	0.7	0.4	7.6	0.2	1.1	10.9	0.6	12.1	1,030	3,500	180
	2.5	7	2.2	0.7	0.4	8.6	0.2	1.2	12.1	0.7	7.41	850	3,500	240
	4	7	2.7	0.7	0.4	10.1	0.3	1.3	13.9	0.7	4.61	700	3,500	340
	6	7	3.3	0.7	0.4	11.3	0.3	1.3	15.3	0.8	3.08	600	3,500	440
	10	7	4.2	0.7	0.4	13.7	0.3	1.4	17.9	0.8	1.83	480	3,500	650
	16	7	5.3	0.7	0.4	16.1	0.3	1.5	20.5	0.9	1.15	390	3,500	920
	25	7	6.6	0.9	0.4	20.2	0.3	1.7	25.0	1.1	0.727	400	3,500	1,420
	35	7	7.9	0.9	0.4	23.1	0.3	1.8	28.1	1.1	0.524	350	3,500	1,870
	50	19	9.1	1.0	0.4	26.7	0.3	1.9	31.9	1.3	0.387	330	3,500	2,440
	70	19	11.0	1.1	0.4	31.5	0.4	2.1	37.6	1.4	0.268	300	3,500	3,510
	95	19	12.9	1.1	0.4	36.1	0.4	2.3	42.6	1.6	0.193	260	3,500	4,680
	120	37	14.5	1.2	0.6	40.9	0.4	2.5	47.8	1.7	0.153	250	3,500	5,840
	150	37	16.2	1.4	0.6	45.7	0.4	2.7	53.0	1.9	0.124	270	3,500	7,140
	185	37	18.0	1.6	0.6	51.0	0.4	2.9	58.7	2.1	0.0991	270	3,500	8,840

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Flame retardant

LV Power & Control Cable

0.6/1kV TFOI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner covering (lapped)	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km
2	1.0	7	1.4	0.7	0.4	5.8	0.2	1.1	9.1	0.6	18.1	1,180	3,500	110
3	1.0	7	1.4	0.7	0.4	6.2	0.2	1.1	9.5	0.6	18.1	1,180	3,500	130
4	1.0	7	1.4	0.7	0.4	6.9	0.2	1.1	10.2	0.6	18.1	1,180	3,500	150
5	1.0	7	1.4	0.7	0.4	7.7	0.2	1.1	11.0	0.6	18.1	1,180	3,500	170
7	1.0	7	1.4	0.7	0.4	8.5	0.2	1.2	12.0	0.7	18.1	1,180	3,500	210
9	1.0	7	1.4	0.7	0.4	10.2	0.3	1.3	14.2	0.7	18.1	1,180	3,500	290
12	1.0	7	1.4	0.7	0.4	11.6	0.3	1.3	15.6	0.8	18.1	1,180	3,500	350
16	1.0	7	1.4	0.7	0.4	13.1	0.3	1.4	17.3	0.8	18.1	1,180	3,500	440
19	1.0	7	1.4	0.7	0.4	13.9	0.3	1.4	18.1	0.8	18.1	1,180	3,500	490
24	1.0	7	1.4	0.7	0.4	16.6	0.3	1.5	21.0	0.9	18.1	1,180	3,500	620
27	1.0	7	1.4	0.7	0.4	17.0	0.3	1.5	21.4	0.9	18.1	1,180	3,500	660
33	1.0	7	1.4	0.7	0.4	18.5	0.3	1.6	23.1	1.0	18.1	1,180	3,500	780
37	1.0	7	1.4	0.7	0.4	19.3	0.3	1.6	23.9	1.0	18.1	1,180	3,500	840
44	1.0	7	1.4	0.7	0.4	22.0	0.3	1.7	26.8	1.1	18.1	1,180	3,501	1,010
2	1.5	7	1.7	0.7	0.4	6.4	0.2	1.1	9.7	0.6	12.1	1,030	3,500	110
3	1.5	7	1.7	0.7	0.4	6.9	0.2	1.1	10.2	0.6	12.1	1,030	3,500	130
4	1.5	7	1.7	0.7	0.4	7.6	0.2	1.1	10.9	0.6	12.1	1,030	3,500	180
5	1.5	7	1.7	0.7	0.4	8.5	0.2	1.2	12.0	0.7	12.1	1,030	3,500	220
7	1.5	7	1.7	0.7	0.4	9.4	0.2	1.2	12.9	0.7	12.1	1,030	3,500	260
9	1.5	7	1.7	0.7	0.4	11.2	0.3	1.3	15.2	0.8	12.1	1,030	3,500	350
12	1.5	7	1.7	0.7	0.4	12.9	0.3	1.4	17.1	0.8	12.1	1,030	3,500	440
16	1.5	7	1.7	0.7	0.4	14.5	0.3	1.4	18.7	0.9	12.1	1,030	3,500	540
19	1.5	7	1.7	0.7	0.4	15.4	0.3	1.5	19.8	0.9	12.1	1,030	3,500	620
24	1.5	7	1.7	0.7	0.4	18.4	0.3	1.6	23.0	1.0	12.1	1,030	3,500	790
27	1.5	7	1.7	0.7	0.4	18.9	0.3	1.6	23.5	1.0	12.1	1,030	3,500	840
33	1.5	7	1.7	0.7	0.4	20.5	0.3	1.7	25.3	1.1	12.1	1,030	3,500	990
37	1.5	7	1.7	0.7	0.4	21.4	0.3	1.7	26.2	1.1	12.1	1,030	3,500	1,080
44	1.5	7	1.7	0.7	0.4	24.4	0.3	1.8	29.4	1.2	12.1	1,030	3,501	1,300
2	2.5	7	2.2	0.7	0.4	7.2	0.2	1.1	10.5	0.6	7.41	850	3,500	160
3	2.5	7	2.2	0.7	0.4	7.7	0.2	1.1	11.0	0.6	7.41	850	3,500	190
4	2.5	7	2.2	0.7	0.4	8.6	0.2	1.2	12.1	0.7	7.41	850	3,500	210
5	2.5	7	2.2	0.7	0.4	9.6	0.2	1.2	13.1	0.7	7.41	850	3,500	280
7	2.5	7	2.2	0.7	0.4	10.6	0.3	1.3	14.6	0.7	7.41	850	3,500	370
9	2.5	7	2.2	0.7	0.4	12.7	0.3	1.4	16.9	0.8	7.41	850	3,500	470
12	2.5	7	2.2	0.7	0.4	14.5	0.3	1.4	18.7	0.9	7.41	850	3,500	590
16	2.5	7	2.2	0.7	0.4	16.4	0.3	1.5	20.8	0.9	7.41	850	3,500	740
19	2.5	7	2.2	0.7	0.4	17.4	0.3	1.5	21.8	1.0	7.41	850	3,500	840
24	2.5	7	2.2	0.7	0.4	20.8	0.3	1.7	25.6	1.1	7.41	850	3,500	1,080
27	2.5	7	2.2	0.7	0.4	21.3	0.3	1.7	26.1	1.1	7.41	850	3,500	1,170
33	2.5	7	2.2	0.7	0.4	23.2	0.3	1.8	28.2	1.1	7.41	850	3,500	1,380
37	2.5	7	2.2	0.7	0.4	24.2	0.3	1.8	29.2	1.2	7.41	850	3,500	1,510
44	2.5	7	2.2	0.7	0.4	27.6	0.3	2.0	33.0	1.3	7.41	850	3,501	1,830



Cable Designation

0.6/1kV TIOI, 0.6/1kV TICl

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-353
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail																					
	Conductor		- Stranded plain annealed copper wire as per IEC 60228, Class 2																					
	Insulation	T	- XLPE as per IEC 60092-351																					
	Cabling		- Insulated conductors shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable																					
	Inner sheath	I	- SHF1 as per IEC 60092-359																					
	Armor	O (C)	- Braid of plain annealed copper wire(o) or galvanized steel wire(c) - Coverage density : Min. 90%																					
	Outer sheath	I	- SHF1 as per IEC 60092-359 - Outer sheath color : Black																					
Identification			<table border="1"> <thead> <tr> <th>No. of Cores</th> <th>Without Earth core</th> <th>With Earth core</th> </tr> </thead> <tbody> <tr> <td>1C</td> <td>Black</td> <td>-</td> </tr> <tr> <td>2C</td> <td>Red , Black</td> <td>-</td> </tr> <tr> <td>3C / 2C + E</td> <td>Red , Yellow, Blue</td> <td>Red , Yellow, G/Y</td> </tr> <tr> <td>4C / 3C + E</td> <td>Red , Yellow, Blue, Black</td> <td>Red , Yellow, Blue, G/Y</td> </tr> <tr> <td>5C / 4C + E</td> <td>Black No. on white insulation</td> <td>Red , Yellow, Blue, Black, G/Y</td> </tr> <tr> <td>5C and over</td> <td>Black number on white insulation</td> <td></td> </tr> </tbody> </table>	No. of Cores	Without Earth core	With Earth core	1C	Black	-	2C	Red , Black	-	3C / 2C + E	Red , Yellow, Blue	Red , Yellow, G/Y	4C / 3C + E	Red , Yellow, Blue, Black	Red , Yellow, Blue, G/Y	5C / 4C + E	Black No. on white insulation	Red , Yellow, Blue, Black, G/Y	5C and over	Black number on white insulation	
	No. of Cores	Without Earth core	With Earth core																					
	1C	Black	-																					
	2C	Red , Black	-																					
	3C / 2C + E	Red , Yellow, Blue	Red , Yellow, G/Y																					
	4C / 3C + E	Red , Yellow, Blue, Black	Red , Yellow, Blue, G/Y																					
5C / 4C + E	Black No. on white insulation	Red , Yellow, Blue, Black, G/Y																						
5C and over	Black number on white insulation																							
			Note) 1. G/Y means green base color with yellow stripe. 2. Control cable (2C, 3C and 4C) shall be identified by the number printing.																					

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

Flame retardant

LV Power & Control Cable

0.6/1kV TIOI, 0.6/1kV TICl

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km	
1	1.5	7	1.7	0.7	0.9	5.0	0.3	0.8	8.5	0.6	12.1	1,030	3,500	120
	2.5	7	2.1	0.7	0.9	5.4	0.3	0.8	8.9	0.6	7.41	850	3,500	130
	4	7	2.7	0.7	1.0	6.2	0.3	0.8	9.7	0.6	4.61	700	3,500	160
	6	7	3.3	0.7	1.0	6.7	0.3	0.8	10.2	0.6	3.08	600	3,500	190
	10	7	4.2	0.7	1.0	7.7	0.3	0.8	11.2	0.6	1.83	480	3,500	250
	16	7	5.3	0.7	1.1	8.9	0.3	0.9	12.4	0.7	1.15	390	3,500	330
	25	7	6.6	0.9	1.1	10.6	0.3	0.9	14.1	0.7	0.727	400	3,500	450
	35	7	7.9	0.9	1.2	12.0	0.3	0.9	15.5	0.8	0.524	350	3,500	570
	50	19	9.1	1.0	1.2	13.5	0.3	1.0	17.0	0.8	0.387	330	3,500	720
	70	19	11.0	1.1	1.3	15.7	0.3	1.0	19.2	0.9	0.268	300	3,500	970
	95	19	12.9	1.1	1.4	17.8	0.3	1.1	21.5	0.9	0.193	260	3,500	1,270
	120	37	14.5	1.2	1.5	19.8	0.3	1.1	23.5	1.0	0.153	250	3,500	1,550
	150	37	16.2	1.4	1.5	21.8	0.3	1.2	25.7	1.1	0.124	270	3,500	1,870
	185	37	18.0	1.6	1.6	24.2	0.3	1.2	28.1	1.1	0.0991	270	3,500	2,290
	240	61	20.6	1.7	1.7	27.3	0.3	1.3	31.4	1.2	0.0754	250	3,500	2,930
300	61	23.1	1.8	1.9	30.3	0.4	1.4	34.9	1.3	0.0601	240	3,500	3,680	
2	1.5	7	1.7	0.7	1.0	8.2	0.3	0.8	11.7	0.7	12.1	1,030	3,500	200
	2.5	7	2.1	0.7	1.1	9.2	0.3	0.9	12.7	0.7	7.41	850	3,500	240
	4	7	2.7	0.7	1.1	10.4	0.3	0.9	13.9	0.7	4.61	700	3,500	300
	6	7	3.3	0.7	1.2	11.6	0.3	0.9	15.1	0.8	3.08	600	3,500	360
	10	7	4.2	0.7	1.2	13.6	0.3	1.0	17.1	0.8	1.83	480	3,500	490
	16	7	5.3	0.7	1.3	15.8	0.3	1.0	19.3	0.9	1.15	390	3,500	650
	25	7	6.6	0.9	1.5	19.6	0.3	1.1	23.3	1.0	0.727	400	3,500	960
	35	7	7.9	0.9	1.6	22.2	0.3	1.2	26.1	1.1	0.524	350	3,500	1,230
	50	19	9.1	1.0	1.7	25.4	0.3	1.3	29.5	1.2	0.387	330	3,500	1,580
	70	19	11.0	1.1	1.8	29.6	0.3	1.4	33.9	1.3	0.268	300	3,500	2,140
	95	19	12.9	1.1	2.0	33.8	0.4	1.5	38.7	1.5	0.193	260	3,500	2,900
	120	37	14.5	1.2	2.1	37.6	0.4	1.6	42.7	1.6	0.153	250	3,500	3,550
150	37	16.2	1.4	2.3	42.0	0.4	1.7	47.3	1.7	0.124	270	3,500	4,320	
185	37	18.0	1.6	2.5	46.8	0.4	1.8	52.3	1.9	0.0991	270	3,500	5,310	
2C+E	1.5	7	1.7	0.7	1.1	8.9	0.3	0.9	12.4	0.7	12.1	1,030	3,500	230
2C+E	2.5	7	2.1	0.7	1.1	9.7	0.3	0.9	13.2	0.7	7.41	850	3,500	280
2C+E	4	7	2.7	0.7	1.1	11.0	0.3	0.9	14.5	0.7	4.61	700	3,500	350
2C+E	6	7	3.3	0.7	1.2	12.2	0.3	0.9	15.7	0.8	3.08	600	3,500	430
2C+E	10	7	4.2	0.7	1.3	14.7	0.3	1.0	18.2	0.8	1.83	480	3,500	610
2C+E	16	7	5.3	0.7	1.4	17.0	0.3	1.1	20.7	0.9	1.15	390	3,500	850
2C	25	7	6.6	0.9	1.5	20.2	0.3	1.1	23.9	1.0	0.727	400	3,500	1,120
Earth	16	7	5.3	0.7										
2C	35	7	7.9	0.9	1.6	23.2	0.3	1.2	27.1	1.1	0.524	350	3,500	1,490
Earth	25	7	6.6	0.9										
2C	50	19	9.1	1.0	1.7	26.1	0.3	1.3	30.2	1.2	0.387	330	3,500	1,840
Earth	25	7	6.6	0.9										
2C	70	19	11.0	1.1	1.9	30.5	0.4	1.4	35.2	1.4	0.268	300	3,500	2,580
Earth	35	7	7.9	0.9										
2C	95	19	12.9	1.1	2.0	34.6	0.4	1.5	39.5	1.5	0.193	260	3,500	3,360
Earth	50	19	9.1	1.0										
2C	120	37	14.5	1.2	2.2	39.0	0.4	1.6	44.1	1.6	0.153	250	3,500	4,250
Earth	70	19	11.0	1.1										
2C	150	37	16.2	1.4	2.3	43.4	0.4	1.7	48.7	1.8	0.124	270	3,500	5,230
Earth	95	19	12.9	1.1										
2C	185	37	18.0	1.6	2.5	47.7	0.4	1.8	53.2	1.9	0.0991	270	3,500	6,200
Earth	95	19	12.9	1.1										

0.6/1kV TIOI, 0.6/1kV TICl

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km	
3	1.5	7	1.7	0.7	1.1	8.9	0.3	0.9	12.4	0.7	12.1	1,030	3,500	230
	2.5	7	2.2	0.7	1.1	9.7	0.3	0.9	13.2	0.7	7.41	850	3,500	280
	4	7	2.7	0.7	1.1	11.0	0.3	0.9	14.5	0.7	4.61	700	3,500	350
	6	7	3.3	0.7	1.2	12.3	0.3	0.9	15.8	0.8	3.08	600	3,500	430
	10	7	4.2	0.7	1.3	14.7	0.3	1.0	18.2	0.8	1.83	480	3,500	610
	16	7	5.3	0.7	1.4	17.0	0.3	1.1	20.7	0.9	1.15	390	3,500	850
	25	7	6.6	0.9	1.5	20.9	0.3	1.2	24.8	1.0	0.727	400	3,500	1,240
	35	7	7.9	0.9	1.6	23.7	0.3	1.2	27.6	1.1	0.524	350	3,500	1,600
	50	19	9.1	1.0	1.7	27.1	0.3	1.3	31.2	1.2	0.387	330	3,500	2,070
	70	19	11.0	1.1	1.9	31.8	0.4	1.4	36.5	1.4	0.268	300	3,500	2,930
	95	19	12.9	1.1	2.1	36.3	0.4	1.6	41.4	1.5	0.193	260	3,500	3,890
	120	37	14.5	1.2	2.2	40.4	0.4	1.7	45.7	1.7	0.153	250	3,500	4,780
	150	37	16.2	1.4	2.4	45.1	0.4	1.8	50.6	1.8	0.124	270	3,500	5,830
	185	37	18.0	1.6	2.6	50.2	0.4	1.9	55.9	2.0	0.0991	270	3,500	7,180
	240	61	20.6	1.7	2.8	56.9	0.4	2.1	63.0	2.2	0.0754	250	3,500	9,220
3C+E	1.5	7	1.7	0.7	1.1	9.6	0.3	0.9	13.1	0.7	12.1	1,030	3,500	260
3C+E	2.5	7	2.2	0.7	1.1	10.6	0.3	0.9	14.1	0.7	7.41	850	3,500	320
3C+E	4	7	2.7	0.7	1.2	12.1	0.3	0.9	15.6	0.8	4.61	700	3,500	410
3C+E	6	7	3.3	0.7	1.2	13.5	0.3	1.0	17.0	0.8	3.08	600	3,500	520
3C+E	10	7	4.2	0.7	1.3	16.1	0.3	1.0	19.6	0.9	1.83	480	3,500	740
3C+E	16	7	5.3	0.7	1.4	18.7	0.3	1.1	22.4	1.0	1.15	390	3,500	1,040
3C	25	7	6.6	0.9	1.6	22.6	0.3	1.2	26.5	1.1	0.727	400	3,500	1,460
Earth	16	7	5.3	0.7										
3C	35	7	7.9	0.9	1.7	25.9	0.3	1.3	30.0	1.2	0.524	350	3,500	1,950
Earth	25	7	6.6	0.9										
3C	50	19	9.1	1.0	1.8	29.2	0.3	1.4	33.5	1.3	0.387	330	3,500	2,430
Earth	25	7	6.6	0.9										
3C	70	19	11.0	1.1	2.0	34.1	0.4	1.5	39.0	1.5	0.268	300	3,500	3,410
Earth	35	7	7.9	0.9										
3C	95	19	12.9	1.1	2.2	39.0	0.4	1.6	44.1	1.6	0.193	260	3,500	4,510
Earth	50	19	9.1	1.0										
3C	120	37	14.5	1.2	2.4	43.8	0.4	1.7	49.1	1.8	0.153	250	3,500	5,670
Earth	70	19	11.0	1.1										
3C	150	37	16.2	1.4	2.5	48.8	0.4	1.9	54.5	1.9	0.124	270	3,500	7,010
Earth	95	19	12.9	1.1										
3C	185	37	18.0	1.6	2.7	53.7	0.4	2.0	59.6	2.1	0.0991	270	3,500	8,370
Earth	95	19	12.9	1.1										
3C	240	61	20.6	1.7	3.0	60.9	0.4	2.2	67.2	2.3	0.0754	250	3,500	10,740
Earth	120	37	14.5	1.2										
4	1.5	7	1.7	0.7	1.1	9.6	0.3	0.9	13.1	0.7	12.1	1,030	3,500	260
	2.5	7	2.2	0.7	1.1	10.6	0.3	0.9	14.1	0.7	7.41	850	3,500	320
	4	7	2.7	0.7	1.2	12.3	0.3	0.9	15.8	0.8	4.61	700	3,500	420
	6	7	3.3	0.7	1.2	13.5	0.3	1.0	17.0	0.8	3.08	600	3,500	520
	10	7	4.2	0.7	1.3	16.1	0.3	1.0	19.6	0.9	1.83	480	3,500	740
	16	7	5.3	0.7	1.4	18.7	0.3	1.1	22.4	1.0	1.15	390	3,500	1,040
	25	7	6.6	0.9	1.6	23.2	0.3	1.2	27.1	1.1	0.727	400	3,500	1,550
	35	7	7.9	0.9	1.7	26.3	0.3	1.3	30.4	1.2	0.524	350	3,500	2,030
	50	19	9.1	1.0	1.9	30.3	0.4	1.4	35.0	1.4	0.387	330	3,500	2,720
	70	19	11.0	1.1	2.0	35.3	0.4	1.5	40.2	1.5	0.268	300	3,500	3,730
	95	19	12.9	1.1	2.2	40.3	0.4	1.7	45.6	1.7	0.193	260	3,500	4,970
	120	37	14.5	1.2	2.4	45.1	0.4	1.8	50.6	1.8	0.153	250	3,500	6,150
	150	37	16.2	1.4	2.6	50.3	0.4	1.9	56.0	2.0	0.124	270	3,500	7,490
	185	37	18.0	1.6	2.8	56.0	0.4	2.0	61.9	2.2	0.0991	270	3,500	9,250

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Flame retardant

LV Power & Control Cable

0.6/1kV TIOI, 0.6/1kV TICl

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	±mm	mm	Ω/km	MΩ-km	V/5min	kg/km
2	1.0	7	1.4	0.7	1.0	7.6	0.3	0.8	11.1	0.6	18.1	1,180	3,500	180
3	1.0	7	1.4	0.7	1.0	8.0	0.3	0.8	11.5	0.6	18.1	1,180	3,500	200
4	1.0	7	1.4	0.7	1.1	8.9	0.3	0.9	12.4	0.7	18.1	1,180	3,500	230
5	1.0	7	1.4	0.7	1.1	9.7	0.3	0.9	13.2	0.7	18.1	1,180	3,500	260
7	1.0	7	1.4	0.7	1.1	10.5	0.3	0.9	14.0	0.7	18.1	1,180	3,500	300
9	1.0	7	1.4	0.7	1.2	12.4	0.3	0.9	15.9	0.8	18.1	1,180	3,500	370
12	1.0	7	1.4	0.7	1.2	13.8	0.3	1.0	17.3	0.8	18.1	1,180	3,500	440
16	1.0	7	1.4	0.7	1.3	15.5	0.3	1.0	19.0	0.9	18.1	1,180	3,500	530
19	1.0	7	1.4	0.7	1.3	16.3	0.3	1.0	19.8	0.9	18.1	1,180	3,500	590
24	1.0	7	1.4	0.7	1.4	19.2	0.3	1.1	22.9	1.0	18.1	1,180	3,500	740
27	1.0	7	1.4	0.7	1.5	19.8	0.3	1.1	23.5	1.0	18.1	1,180	3,500	800
33	1.0	7	1.4	0.7	1.5	21.3	0.3	1.2	25.2	1.1	18.1	1,180	3,500	920
37	1.0	7	1.4	0.7	1.6	22.3	0.3	1.2	26.2	1.1	18.1	1,180	3,500	1,010
44	1.0	7	1.4	0.7	1.7	25.2	0.3	1.3	29.3	1.2	18.1	1,180	3,501	1,210
2	1.5	7	1.7	0.7	1.0	8.2	0.3	0.8	11.7	0.7	12.1	1,030	3,500	200
3	1.5	7	1.7	0.7	1.1	8.9	0.3	0.9	12.4	0.7	12.1	1,030	3,500	230
4	1.5	7	1.7	0.7	1.1	9.6	0.3	0.9	13.1	0.7	12.1	1,030	3,500	260
5	1.5	7	1.7	0.7	1.1	10.5	0.3	0.9	14.0	0.7	12.1	1,030	3,500	300
7	1.5	7	1.7	0.7	1.2	11.6	0.3	0.9	15.1	0.8	12.1	1,030	3,500	360
9	1.5	7	1.7	0.7	1.2	13.4	0.3	1.0	16.9	0.8	12.1	1,030	3,500	430
12	1.5	7	1.7	0.7	1.3	15.3	0.3	1.0	18.8	0.9	12.1	1,030	3,500	530
16	1.5	7	1.7	0.7	1.4	17.1	0.3	1.1	20.8	0.9	12.1	1,030	3,500	660
19	1.5	7	1.7	0.7	1.4	18.0	0.3	1.1	21.7	1.0	12.1	1,030	3,500	730
24	1.5	7	1.7	0.7	1.5	21.2	0.3	1.2	25.1	1.1	12.1	1,030	3,500	930
27	1.5	7	1.7	0.7	1.5	21.7	0.3	1.2	25.6	1.1	12.1	1,030	3,500	990
33	1.5	7	1.7	0.7	1.6	23.5	0.3	1.2	27.4	1.1	12.1	1,030	3,500	1,150
37	1.5	7	1.7	0.7	1.6	24.4	0.3	1.2	28.3	1.1	12.1	1,030	3,500	1,240
44	1.5	7	1.7	0.7	1.8	27.8	0.3	1.3	31.9	1.3	12.1	1,030	3,501	1,510
2	2.5	7	2.2	0.7	1.1	9.2	0.3	0.9	12.7	0.7	7.41	850	3,500	240
3	2.5	7	2.2	0.7	1.1	9.7	0.3	0.9	13.2	0.7	7.41	850	3,500	280
4	2.5	7	2.2	0.7	1.1	10.6	0.3	0.9	14.1	0.7	7.41	850	3,500	320
5	2.5	7	2.2	0.7	1.2	11.8	0.3	0.9	15.3	0.8	7.41	850	3,500	380
7	2.5	7	2.2	0.7	1.2	12.8	0.3	1.0	16.3	0.8	7.41	850	3,500	450
9	2.5	7	2.2	0.7	1.3	15.1	0.3	1.0	18.6	0.9	7.41	850	3,500	560
12	2.5	7	2.2	0.7	1.4	17.1	0.3	1.1	20.8	0.9	7.41	850	3,500	710
16	2.5	7	2.2	0.7	1.4	19.0	0.3	1.1	22.7	1.0	7.41	850	3,500	860
19	2.5	7	2.2	0.7	1.5	20.2	0.3	1.1	23.9	1.0	7.41	850	3,500	980
24	2.5	7	2.2	0.7	1.6	23.8	0.3	1.2	27.7	1.1	7.41	850	3,500	1,240
27	2.5	7	2.2	0.7	1.6	24.3	0.3	1.2	28.2	1.1	7.41	850	3,500	1,330
33	2.5	7	2.2	0.7	1.7	26.4	0.3	1.3	30.5	1.2	7.41	850	3,500	1,570
37	2.5	7	2.2	0.7	1.8	27.6	0.3	1.3	31.7	1.3	7.41	850	3,500	1,720
44	2.5	7	2.2	0.7	1.9	31.2	0.4	1.4	35.9	1.4	7.41	850	3,501	2,140

Fire resistance

LV Power & Control Cable

E-Route®
IEC 60092-350, 353, 354, 376



Cable Designation

0.6/1kV BI

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-353
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Fire resistance : IEC 60331-21(90min)
IEC 60331-1,-2(120min)
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or
IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail																					
	Conductor	B	- Stranded plain annealed copper wires as per IEC 60228, Class 2 - A suitable tape may be applied on the conductor																					
	Fire resisting layer		- Mica/glass tape																					
	Insulation	- XLPE as per IEC 60092-351																						
	Cabling	- Insulated conductors shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable																						
Sheath	I	- SHF1 as per IEC 60092-359 - Sheath color : Black																						
Identification			<table border="1"> <thead> <tr> <th>No. of Cores</th> <th>Without Earth core</th> <th>With Earth core</th> </tr> </thead> <tbody> <tr> <td>1C</td> <td>Black</td> <td>-</td> </tr> <tr> <td>2C</td> <td>Red , Black</td> <td>-</td> </tr> <tr> <td>3C / 2C + E</td> <td>Red , Yellow, Blue</td> <td>Red , Yellow, G/Y</td> </tr> <tr> <td>4C / 3C + E</td> <td>Red , Yellow, Blue, Black</td> <td>Red , Yellow, Blue, G/Y</td> </tr> <tr> <td>5C / 4C + E</td> <td>Black No. on white insulation</td> <td>Red , Yellow, Blue, Black, G/Y</td> </tr> <tr> <td>5C and over</td> <td>Black number on white insulation</td> <td></td> </tr> </tbody> </table>	No. of Cores	Without Earth core	With Earth core	1C	Black	-	2C	Red , Black	-	3C / 2C + E	Red , Yellow, Blue	Red , Yellow, G/Y	4C / 3C + E	Red , Yellow, Blue, Black	Red , Yellow, Blue, G/Y	5C / 4C + E	Black No. on white insulation	Red , Yellow, Blue, Black, G/Y	5C and over	Black number on white insulation	
No. of Cores	Without Earth core	With Earth core																						
1C	Black	-																						
2C	Red , Black	-																						
3C / 2C + E	Red , Yellow, Blue	Red , Yellow, G/Y																						
4C / 3C + E	Red , Yellow, Blue, Black	Red , Yellow, Blue, G/Y																						
5C / 4C + E	Black No. on white insulation	Red , Yellow, Blue, Black, G/Y																						
5C and over	Black number on white insulation																							

Note) 1. G/Y means green base color with yellow stripe.
2. Control cable (2C, 3C and 4C) shall be identified by the number printing.

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Fire resistance

LV Power & Control Cable

0.6/1kV BI

No. of Cores	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km
1	1.5	7	1.7	0.7	1.0	5.8	0.5	12.1	1,030	3,500	50
	2.5	7	2.2	0.7	1.0	6.3	0.5	7.41	850	3,500	70
	4	7	2.7	0.7	1.0	6.8	0.5	4.61	700	3,500	90
	6	7	3.3	0.7	1.0	7.4	0.5	3.08	600	3,500	110
	10	7	4.2	0.7	1.0	8.4	0.6	1.83	480	3,500	160
	16	7	5.3	0.7	1.1	9.6	0.6	1.15	390	3,500	230
	25	7	6.6	0.9	1.2	11.5	0.6	0.727	400	3,500	350
	35	7	7.9	0.9	1.2	12.6	0.7	0.524	350	3,500	450
	50	19	9.1	1.0	1.3	14.4	0.7	0.387	330	3,500	590
	70	19	11.0	1.1	1.3	16.4	0.8	0.268	300	3,500	820
	95	19	12.9	1.1	1.4	18.5	0.9	0.193	260	3,500	1,100
	120	37	14.5	1.2	1.5	20.5	0.9	0.153	250	3,500	1,360
	150	37	16.2	1.4	1.6	22.7	1.0	0.124	270	3,500	1,670
	185	37	18.0	1.6	1.7	25.1	1.1	0.0991	270	3,500	2,070
240	61	20.6	1.7	1.8	28.2	1.1	0.0754	250	3,500	2,670	
300	61	23.1	1.8	1.9	31.0	1.2	0.0601	240	3,500	3,310	
2	1.5	7	1.7	0.7	1.1	9.5	0.6	12.1	1,030	3,500	110
	2.5	7	2.2	0.7	1.1	10.5	0.6	7.41	850	3,500	140
	4	7	2.7	0.7	1.2	11.7	0.7	4.61	700	3,500	190
	6	7	3.3	0.7	1.2	12.9	0.7	3.08	600	3,500	240
	10	7	4.2	0.7	1.3	15.1	0.8	1.83	480	3,500	360
	16	7	5.3	0.7	1.4	17.3	0.8	1.15	390	3,500	500
	25	7	6.6	0.9	1.5	20.9	0.9	0.727	400	3,500	770
	35	7	7.9	0.9	1.6	23.3	1.0	0.524	350	3,500	1,010
	50	19	9.1	1.0	1.7	26.7	1.1	0.387	330	3,500	1,320
	70	19	11.0	1.1	1.9	31.1	1.2	0.268	300	3,500	1,850
	95	19	12.9	1.1	2.0	35.1	1.4	0.193	260	3,500	2,460
120	37	14.5	1.2	2.2	39.1	1.5	0.153	250	3,500	3,060	
150	37	16.2	1.4	2.3	43.3	1.6	0.124	270	3,500	3,740	
185	37	18.0	1.6	2.5	48.1	1.7	0.0991	270	3,500	4,650	
2C+E	1.5	7	1.7	0.7	1.1	10.0	0.6	12.1	1,030	3,500	130
2C+E	2.5	7	2.2	0.7	1.1	11.1	0.6	7.41	850	3,500	180
2C+E	4	7	2.7	0.7	1.2	12.4	0.7	4.61	700	3,500	240
2C+E	6	7	3.3	0.7	1.2	13.7	0.7	3.08	600	3,500	320
2C+E	10	7	4.2	0.7	1.3	16.0	0.8	1.83	480	3,500	470
2C+E	16	7	5.3	0.7	1.4	18.4	0.9	1.15	390	3,500	680
2C	25	7	6.6	0.9	1.5	21.6	0.9	0.727	400	3,500	950
Earth	16	7	5.3	0.7							
2C	35	7	7.9	0.9	1.6	24.4	1.0	0.524	350	3,500	1,290
Earth	25	7	6.6	0.9							
2C	50	19	9.1	1.0	1.8	27.7	1.1	0.387	330	3,500	1,610
Earth	25	7	6.6	0.9							
2C	70	19	11.0	1.1	1.9	31.8	1.3	0.268	300	3,500	2,210
Earth	35	7	7.9	0.9							
2C	95	19	12.9	1.1	2.1	36.2	1.4	0.193	260	3,500	2,960
Earth	50	19	9.1	1.0							
2C	120	37	14.5	1.2	2.2	40.4	1.5	0.153	250	3,500	3,760
Earth	70	19	11.0	1.1							
2C	150	37	16.2	1.4	2.4	45.0	1.7	0.124	270	3,500	4,700
Earth	95	19	12.9	1.1							
2C	185	37	18.0	1.6	2.6	49.3	1.8	0.0991	270	3,500	5,600
Earth	95	19	12.9	1.1							

0.6/1kV BI

No. of Cores	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km
3	1.5	7	1.7	0.7	1.1	10.0	0.6	12.1	1,030	3,500	130
	2.5	7	2.2	0.7	1.1	11.1	0.6	7.41	850	3,500	180
	4	7	2.7	0.7	1.2	12.4	0.7	4.61	700	3,500	240
	6	7	3.3	0.7	1.2	13.7	0.7	3.08	600	3,500	320
	10	7	4.2	0.7	1.3	16.0	0.8	1.83	480	3,500	470
	16	7	5.3	0.7	1.4	18.4	0.9	1.15	390	3,500	680
	25	7	6.6	0.9	1.6	22.5	1.0	0.727	400	3,500	1,060
	35	7	7.9	0.9	1.7	25.0	1.1	0.524	350	3,500	1,400
	50	19	9.1	1.0	1.8	28.7	1.2	0.387	330	3,500	1,840
	70	19	11.0	1.1	2.0	33.4	1.3	0.268	300	3,500	2,570
	95	19	12.9	1.1	2.1	37.7	1.4	0.193	260	3,500	3,440
	120	37	14.5	1.2	2.3	42.0	1.6	0.153	250	3,500	4,290
	150	37	16.2	1.4	2.5	46.7	1.7	0.124	270	3,500	5,260
	185	37	18.0	1.6	2.6	51.6	1.8	0.0991	270	3,500	6,520
240	61	20.6	1.7	2.9	58.5	2.1	0.0754	250	3,500	8,460	
3C+E	1.5	7	1.7	0.7	1.1	10.9	0.6	12.1	1,030	3,500	160
3C+E	2.5	7	2.2	0.7	1.2	12.4	0.7	7.41	850	3,500	230
3C+E	4	7	2.7	0.7	1.2	13.6	0.7	4.61	700	3,500	300
3C+E	6	7	3.3	0.7	1.3	15.2	0.8	3.08	600	3,500	410
3C+E	10	7	4.2	0.7	1.4	17.8	0.8	1.83	480	3,500	610
3C+E	16	7	5.3	0.7	1.5	20.4	0.9	1.15	390	3,500	880
3C	25	7	6.6	0.9	1.6	24.2	1.0	0.727	400	3,500	1,260
Earth	16	7	5.3	0.7							
3C	35	7	7.9	0.9	1.7	27.2	1.1	0.524	350	3,500	1,700
Earth	25	7	6.6	0.9							
3C	50	19	9.1	1.0	1.9	30.9	1.2	0.387	330	3,500	2,160
Earth	25	7	6.6	0.9							
3C	70	19	11.0	1.1	2.1	35.8	1.4	0.268	300	3,500	3,000
Earth	35	7	7.9	0.9							
3C	95	19	12.9	1.1	2.2	40.5	1.5	0.193	260	3,500	4,010
Earth	50	19	9.1	1.0							
3C	120	37	14.5	1.2	2.4	45.3	1.7	0.153	250	3,500	5,080
Earth	70	19	11.0	1.1							
3C	150	37	16.2	1.4	2.6	50.5	1.8	0.124	270	3,500	6,330
Earth	95	19	12.9	1.1							
3C	185	37	18.0	1.6	2.8	55.5	2.0	0.0991	270	3,500	7,620
Earth	95	19	12.9	1.1							
3C	240	61	20.6	1.7	3.1	62.7	2.2	0.0754	250	3,500	9,830
Earth	120	37	14.5	1.2							
4	1.5	7	1.7	0.7	1.1	10.9	0.6	12.1	1,030	3,500	160
	2.5	7	2.2	0.7	1.2	12.4	0.7	7.41	850	3,500	230
	4	7	2.7	0.7	1.2	13.6	0.7	4.61	700	3,500	300
	6	7	3.3	0.7	1.3	15.2	0.8	3.08	600	3,500	410
	10	7	4.2	0.7	1.4	17.8	0.8	1.83	480	3,500	610
	16	7	5.3	0.7	1.5	20.4	0.9	1.15	390	3,500	880
	25	7	6.6	0.9	1.7	24.9	1.0	0.727	400	3,500	1,380
	35	7	7.9	0.9	1.8	27.8	1.1	0.524	350	3,500	1,820
	50	19	9.1	1.0	1.9	31.9	1.3	0.387	330	3,500	2,390
	70	19	11.0	1.1	2.1	37.1	1.4	0.268	300	3,500	3,350
	95	19	12.9	1.1	2.3	42.1	1.6	0.193	260	3,500	4,510
	120	37	14.5	1.2	2.5	46.8	1.7	0.153	250	3,500	5,620
	150	37	16.2	1.4	2.7	52.0	1.9	0.124	270	3,500	6,890
	185	37	18.0	1.6	2.9	57.8	2.0	0.0991	270	3,500	8,570

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Fire resistance

LV Power & Control Cable

0.6/1kV BI

No. of Cores	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km
2	1.0	7	1.4	0.7	1.1	9.1	0.6	18.1	1,180	3,500	100
3	1.0	7	1.4	0.7	1.1	9.6	0.6	18.1	1,180	3,500	120
4	1.0	7	1.4	0.7	1.1	10.5	0.6	18.1	1,180	3,500	140
5	1.0	7	1.4	0.7	1.2	11.6	0.6	18.1	1,180	3,500	170
7	1.0	7	1.4	0.7	1.2	12.6	0.7	18.1	1,180	3,500	220
9	1.0	7	1.4	0.7	1.3	14.8	0.7	18.1	1,180	3,500	280
12	1.0	7	1.4	0.7	1.4	16.8	0.8	18.1	1,180	3,500	360
16	1.0	7	1.4	0.7	1.4	18.6	0.9	18.1	1,180	3,500	460
19	1.0	7	1.4	0.7	1.5	19.8	0.9	18.1	1,180	3,500	530
24	1.0	7	1.4	0.7	1.6	23.3	1.0	18.1	1,180	3,500	690
27	1.0	7	1.4	0.7	1.6	23.8	1.0	18.1	1,180	3,500	750
33	1.0	7	1.4	0.7	1.7	25.8	1.1	18.1	1,180	3,500	890
37	1.0	7	1.4	0.7	1.7	26.8	1.1	18.1	1,180	3,500	980
44	1.0	7	1.4	0.7	1.9	30.5	1.2	18.1	1,180	3,500	1,200
2	1.5	7	1.7	0.7	1.1	9.5	0.6	12.1	1,030	3,500	110
3	1.5	7	1.7	0.7	1.1	10.0	0.6	12.1	1,030	3,500	130
4	1.5	7	1.7	0.7	1.1	10.9	0.6	12.1	1,030	3,500	160
5	1.5	7	1.7	0.7	1.2	12.2	0.7	12.1	1,030	3,500	200
7	1.5	7	1.7	0.7	1.2	13.2	0.7	12.1	1,030	3,500	260
9	1.5	7	1.7	0.7	1.3	15.5	0.8	12.1	1,030	3,500	340
12	1.5	7	1.7	0.7	1.4	17.6	0.8	12.1	1,030	3,500	440
16	1.5	7	1.7	0.7	1.5	19.8	0.9	12.1	1,030	3,500	560
19	1.5	7	1.7	0.7	1.5	20.8	0.9	12.1	1,030	3,500	640
24	1.5	7	1.7	0.7	1.6	24.5	1.0	12.1	1,030	3,500	830
27	1.5	7	1.7	0.7	1.7	25.2	1.1	12.1	1,030	3,500	910
33	1.5	7	1.7	0.7	1.7	27.2	1.1	12.1	1,030	3,500	1,090
37	1.5	7	1.7	0.7	1.8	28.4	1.2	12.1	1,030	3,500	1,200
44	1.5	7	1.7	0.7	1.9	32.1	1.3	12.1	1,030	3,500	1,460
2	2.5	7	2.2	0.7	1.1	10.5	0.6	7.41	850	3,500	140
3	2.5	7	2.2	0.7	1.1	11.1	0.6	7.41	850	3,500	180
4	2.5	7	2.2	0.7	1.2	12.4	0.7	7.41	850	3,500	230
5	2.5	7	2.2	0.7	1.2	13.5	0.7	7.41	850	3,500	270
7	2.5	7	2.2	0.7	1.3	14.9	0.7	7.41	850	3,500	360
9	2.5	7	2.2	0.7	1.4	17.6	0.8	7.41	850	3,500	470
12	2.5	7	2.2	0.7	1.5	19.9	0.9	7.41	850	3,500	610
16	2.5	7	2.2	0.7	1.6	22.3	1.0	7.41	850	3,500	780
19	2.5	7	2.2	0.7	1.6	23.5	1.0	7.41	850	3,500	900
24	2.5	7	2.2	0.7	1.8	27.9	1.1	7.41	850	3,500	1,170
27	2.5	7	2.2	0.7	1.8	28.5	1.2	7.41	850	3,500	1,280
33	2.5	7	2.2	0.7	1.9	30.9	1.2	7.41	850	3,500	1,540
37	2.5	7	2.2	0.7	1.9	32.1	1.3	7.41	850	3,500	1,690
44	2.5	7	2.2	0.7	2.1	36.5	1.4	7.41	850	3,500	2,070



Cable Designation

0.6/1kV BFOI

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-353
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Fire resistance : IEC 60331-21(90min)
IEC 60331-1,-2(120min)
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or
IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail																					
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2 - A suitable tape may be applied on the conductor																					
	Fire resisting layer	B	- Mica/glass tape																					
	Insulation		- XLPE as per IEC 60092-351																					
	Cabling		- Insulated conductors shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable																					
	Inner covering	F	- Non-hygroscopic material																					
	Armor	O	- Braid of plain annealed copper wire - Coverage density : Min. 90%																					
Sheath		I	- SHF1 as per IEC 60092-359 - Sheath color : Black																					
	Identification		<table border="1"> <thead> <tr> <th>No. of Cores</th> <th>Without Earth core</th> <th>With Earth core</th> </tr> </thead> <tbody> <tr> <td>1C</td> <td>Black</td> <td>-</td> </tr> <tr> <td>2C</td> <td>Red, Black</td> <td>-</td> </tr> <tr> <td>3C / 2C + E</td> <td>Red, Yellow, Blue</td> <td>Red, Yellow, G/Y</td> </tr> <tr> <td>4C / 3C + E</td> <td>Red, Yellow, Blue, Black</td> <td>Red, Yellow, Blue, G/Y</td> </tr> <tr> <td>5C / 4C + E</td> <td>Black No. on white insulation</td> <td>Red, Yellow, Blue, Black, G/Y</td> </tr> <tr> <td>5C and over</td> <td>Black number on white insulation</td> <td></td> </tr> </tbody> </table>	No. of Cores	Without Earth core	With Earth core	1C	Black	-	2C	Red, Black	-	3C / 2C + E	Red, Yellow, Blue	Red, Yellow, G/Y	4C / 3C + E	Red, Yellow, Blue, Black	Red, Yellow, Blue, G/Y	5C / 4C + E	Black No. on white insulation	Red, Yellow, Blue, Black, G/Y	5C and over	Black number on white insulation	
		No. of Cores	Without Earth core	With Earth core																				
		1C	Black	-																				
		2C	Red, Black	-																				
		3C / 2C + E	Red, Yellow, Blue	Red, Yellow, G/Y																				
		4C / 3C + E	Red, Yellow, Blue, Black	Red, Yellow, Blue, G/Y																				
5C / 4C + E	Black No. on white insulation	Red, Yellow, Blue, Black, G/Y																						
5C and over	Black number on white insulation																							
		Note) 1. G/Y means green base color with yellow stripe.																						
		2. Control cable (2C, 3C and 4C) shall be identified by the number printing.																						

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

Fire resistance

LV Power & Control Cable

0.6/1kV BFOI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner covering (lapped)	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km
1	1.5	7	1.7	0.7	0.4	3.9	0.2	1.0	7.0	0.5	12.1	1,030	3,500	80
	2.5	7	2.2	0.7	0.4	4.4	0.2	1.0	7.5	0.5	7.41	850	3,500	100
	4	7	2.7	0.7	0.4	4.9	0.2	1.0	8.0	0.5	4.61	700	3,500	120
	6	7	3.3	0.7	0.4	5.5	0.2	1.1	8.8	0.6	3.08	600	3,500	150
	10	7	4.2	0.7	0.4	6.5	0.2	1.1	9.8	0.6	1.83	480	3,500	200
	16	7	5.3	0.7	0.4	7.5	0.2	1.1	10.8	0.6	1.15	390	3,500	270
	25	7	6.6	0.9	0.4	9.2	0.2	1.2	12.7	0.7	0.727	400	3,500	400
	35	7	7.9	0.9	0.4	10.3	0.3	1.3	14.3	0.7	0.524	350	3,500	540
	50	19	9.1	1.0	0.4	11.9	0.3	1.3	15.9	0.8	0.387	330	3,500	680
	70	19	11.0	1.1	0.4	13.9	0.3	1.4	18.1	0.8	0.268	300	3,500	930
	95	19	12.9	1.1	0.4	15.8	0.3	1.5	20.2	0.9	0.193	260	3,500	1,220
	120	37	14.5	1.2	0.4	17.6	0.3	1.6	22.2	1.0	0.153	250	3,500	1,500
	150	37	16.2	1.4	0.4	19.6	0.3	1.6	24.2	1.0	0.124	270	3,500	1,810
	185	37	18.0	1.6	0.4	21.8	0.3	1.7	26.6	1.1	0.0991	270	3,500	2,230
240	61	20.6	1.7	0.4	24.7	0.3	1.8	29.7	1.2	0.0754	250	3,500	2,850	
300	61	23.1	1.8	0.4	27.3	0.3	1.9	32.5	1.3	0.0601	240	3,500	3,510	
2	1.5	7	1.7	0.7	0.4	7.4	0.2	1.1	10.7	0.6	12.1	1,030	3,500	160
	2.5	7	2.2	0.7	0.4	8.4	0.2	1.2	11.9	0.7	7.41	850	3,500	200
	4	7	2.7	0.7	0.4	9.4	0.2	1.2	12.9	0.7	4.61	700	3,500	240
	6	7	3.3	0.7	0.4	10.6	0.3	1.3	14.6	0.7	3.08	600	3,500	330
	10	7	4.2	0.7	0.4	12.6	0.3	1.4	16.8	0.8	1.83	480	3,500	460
	16	7	5.3	0.7	0.4	14.6	0.3	1.4	18.8	0.9	1.15	390	3,500	620
	25	7	6.6	0.9	0.4	18.0	0.3	1.6	22.6	1.0	0.727	400	3,500	910
	35	7	7.9	0.9	0.4	20.2	0.3	1.7	25.0	1.1	0.524	350	3,500	1,170
	50	19	9.1	1.0	0.4	23.4	0.3	1.8	28.4	1.2	0.387	330	3,500	1,510
	70	19	11.0	1.1	0.4	27.4	0.3	1.9	32.6	1.3	0.268	300	3,500	2,050
	95	19	12.9	1.1	0.4	31.2	0.4	2.1	37.3	1.4	0.193	260	3,500	2,790
120	37	14.5	1.2	0.4	34.8	0.4	2.3	41.3	1.5	0.153	250	3,500	3,440	
150	37	16.2	1.4	0.4	38.8	0.4	2.4	45.5	1.7	0.124	270	3,500	4,160	
185	37	18.0	1.6	0.6	43.6	0.4	2.6	50.7	1.8	0.0991	270	3,500	5,130	
2C+E	1.5	7	1.7	0.7	0.4	7.9	0.2	1.2	11.4	0.6	12.1	1,030	3,500	190
2C+E	2.5	7	2.2	0.7	0.4	9.0	0.2	1.2	12.5	0.7	7.41	850	3,500	240
2C+E	4	7	2.7	0.7	0.4	10.1	0.3	1.3	14.1	0.7	4.61	700	3,500	330
2C+E	6	7	3.3	0.7	0.4	11.4	0.3	1.3	15.4	0.8	3.08	600	3,500	410
2C+E	10	7	4.2	0.7	0.4	13.5	0.3	1.4	17.7	0.8	1.83	480	3,500	580
2C+E	16	7	5.3	0.7	0.4	15.7	0.3	1.5	20.1	0.9	1.15	390	3,500	810
2C	25	7	6.6	0.9	0.4	18.7	0.3	1.6	23.3	1.0	0.727	400	3,500	1,100
Earth	16	7	5.3	0.7										
2C	35	7	7.9	0.9	0.4	21.3	0.3	1.7	26.1	1.1	0.524	350	3,500	1,450
Earth	25	7	6.6	0.9										
2C	50	19	9.1	1.0	0.4	24.2	0.3	1.8	29.2	1.2	0.387	330	3,500	1,790
Earth	25	7	6.6	0.9										
2C	70	19	11.0	1.1	0.4	28.1	0.3	2.0	33.5	1.3	0.268	300	3,500	2,430
Earth	35	7	7.9	0.9										
2C	95	19	12.9	1.1	0.4	32.1	0.4	2.2	38.4	1.5	0.193	260	3,500	3,300
Earth	50	19	9.1	1.0										
2C	120	37	14.5	1.2	0.4	36.1	0.4	2.3	42.6	1.6	0.153	250	3,500	4,140
Earth	70	19	11.0	1.1										
2C	150	37	16.2	1.4	0.4	40.3	0.4	2.5	47.2	1.7	0.124	270	3,500	5,140
Earth	95	19	12.9	1.1										
2C	185	37	18.0	1.6	0.6	44.6	0.4	2.7	51.9	1.9	0.0991	270	3,500	6,090
Earth	95	19	12.9	1.1										

0.6/1kV BFOI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner covering (lapped)	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ·km	V/5min	kg/km	
3	1.5	7	1.7	0.7	0.4	7.9	0.2	1.2	11.4	0.6	12.1	1,030	3,500	190
	2.5	7	2.2	0.7	0.4	9.0	0.2	1.2	12.5	0.7	7.41	850	3,500	240
	4	7	2.7	0.7	0.4	10.1	0.3	1.3	14.1	0.7	4.61	700	3,500	330
	6	7	3.3	0.7	0.4	11.4	0.3	1.3	15.4	0.8	3.08	600	3,500	410
	10	7	4.2	0.7	0.4	13.5	0.3	1.4	17.7	0.8	1.83	480	3,500	580
	16	7	5.3	0.7	0.4	15.7	0.3	1.5	20.1	0.9	1.15	390	3,500	810
	25	7	6.6	0.9	0.4	19.4	0.3	1.6	24.0	1.0	0.727	400	3,500	1,210
	35	7	7.9	0.9	0.4	21.7	0.3	1.7	26.5	1.1	0.524	350	3,500	1,560
	50	19	9.1	1.0	0.4	25.2	0.3	1.9	30.4	1.2	0.387	330	3,500	2,030
	70	19	11.0	1.1	0.4	29.5	0.3	2.0	34.9	1.3	0.268	300	3,500	2,790
	95	19	12.9	1.1	0.4	33.6	0.4	2.2	39.9	1.5	0.193	260	3,500	3,800
	120	37	14.5	1.2	0.4	37.5	0.4	2.4	44.2	1.6	0.153	250	3,500	4,690
	150	37	16.2	1.4	0.6	42.2	0.4	2.6	49.3	1.8	0.124	270	3,500	5,730
	185	37	18.0	1.6	0.6	46.9	0.4	2.7	54.2	1.9	0.0991	270	3,500	7,040
	240	61	20.6	1.7	0.6	53.2	0.4	3.0	61.1	2.1	0.0754	250	3,500	9,050
3C+E	1.5	7	1.7	0.7	0.4	8.8	0.2	1.2	12.3	0.7	12.1	1,030	3,500	220
3C+E	2.5	7	2.2	0.7	0.4	10.1	0.3	1.3	14.1	0.7	7.41	850	3,500	310
3C+E	4	7	2.7	0.7	0.4	11.3	0.3	1.3	15.3	0.8	4.61	700	3,500	400
3C+E	6	7	3.3	0.7	0.4	12.7	0.3	1.4	16.9	0.8	3.08	600	3,500	510
3C+E	10	7	4.2	0.7	0.4	15.1	0.3	1.5	19.5	0.9	1.83	480	3,500	730
3C+E	16	7	5.3	0.7	0.4	17.5	0.3	1.5	21.9	1.0	1.15	390	3,500	1,010
3C	25	7	6.6	0.9	0.4	21.1	0.3	1.7	25.9	1.1	0.727	400	3,500	1,430
Earth	16	7	5.3	0.7										
3C	35	7	7.9	0.9	0.4	23.9	0.3	1.8	28.9	1.2	0.524	350	3,500	1,890
Earth	25	7	6.6	0.9										
3C	50	19	9.1	1.0	0.4	27.2	0.3	1.9	32.4	1.3	0.387	330	3,500	2,360
Earth	25	7	6.6	0.9										
3C	70	19	11.0	1.1	0.4	31.7	0.4	2.1	37.8	1.4	0.268	300	3,500	3,330
Earth	35	7	7.9	0.9										
3C	95	19	12.9	1.1	0.4	36.2	0.4	2.3	42.7	1.6	0.193	260	3,500	4,400
Earth	50	19	9.1	1.0										
3C	120	37	14.5	1.2	0.6	41.0	0.4	2.5	47.9	1.7	0.153	250	3,500	5,540
Earth	70	19	11.0	1.1										
3C	150	37	16.2	1.4	0.6	45.8	0.4	2.7	53.1	1.9	0.124	270	3,500	6,840
Earth	95	19	12.9	1.1										
3C	185	37	18.0	1.6	0.6	50.4	0.4	2.9	58.1	2.0	0.0991	270	3,500	8,180
Earth	95	19	12.9	1.1										
3C	240	61	20.6	1.7	0.6	57.0	0.4	3.1	65.1	2.3	0.0754	250	3,500	10,430
Earth	120	37	14.5	1.2										
4	1.5	7	1.7	0.7	0.4	8.8	0.2	1.2	12.3	0.7	12.1	1,030	3,500	220
	2.5	7	2.2	0.7	0.4	10.1	0.3	1.3	14.1	0.7	7.41	850	3,500	310
	4	7	2.7	0.7	0.4	11.3	0.3	1.3	15.3	0.8	4.61	700	3,500	400
	6	7	3.3	0.7	0.4	12.7	0.3	1.4	16.9	0.8	3.08	600	3,500	510
	10	7	4.2	0.7	0.4	15.1	0.3	1.5	19.5	0.9	1.83	480	3,500	730
	16	7	5.3	0.7	0.4	17.5	0.3	1.5	21.9	1.0	1.15	390	3,500	1,010
	25	7	6.6	0.9	0.4	21.6	0.3	1.7	26.4	1.1	0.727	400	3,500	1,540
	35	7	7.9	0.9	0.4	24.3	0.3	1.8	29.3	1.2	0.524	350	3,500	1,990
	50	19	9.1	1.0	0.4	28.2	0.3	2.0	33.6	1.3	0.387	330	3,500	2,610
	70	19	11.0	1.1	0.4	33.0	0.4	2.2	39.3	1.5	0.268	300	3,500	3,710
	95	19	12.9	1.1	0.4	37.6	0.4	2.4	44.3	1.6	0.193	260	3,500	4,910
	120	37	14.5	1.2	0.6	42.3	0.4	2.6	49.4	1.8	0.153	250	3,500	6,070
	150	37	16.2	1.4	0.6	47.1	0.4	2.8	54.6	1.9	0.124	270	3,500	7,410
	185	37	18.0	1.6	0.6	52.5	0.4	3.0	60.4	2.1	0.0991	270	3,500	9,150

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Fire resistance

LV Power & Control Cable

0.6/1kV BFOI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner covering (lapped)	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km
2	1.0	7	1.4	0.7	0.4	7.0	0.2	1.1	10.3	0.6	18.1	1,180	3,500	140
3	1.0	7	1.4	0.7	0.4	7.5	0.2	1.1	10.8	0.6	18.1	1,180	3,500	160
4	1.0	7	1.4	0.7	0.4	8.4	0.2	1.2	11.9	0.7	18.1	1,180	3,500	200
5	1.0	7	1.4	0.7	0.4	9.3	0.2	1.2	12.8	0.7	18.1	1,180	3,500	230
7	1.0	7	1.4	0.7	0.4	10.3	0.3	1.3	14.3	0.7	18.1	1,180	3,500	300
9	1.0	7	1.4	0.7	0.4	12.3	0.3	1.3	16.3	0.8	18.1	1,180	3,500	380
12	1.0	7	1.4	0.7	0.4	14.1	0.3	1.4	18.3	0.8	18.1	1,180	3,500	470
16	1.0	7	1.4	0.7	0.4	15.9	0.3	1.5	20.3	0.9	18.1	1,180	3,500	590
19	1.0	7	1.4	0.7	0.4	16.9	0.3	1.5	21.3	0.9	18.1	1,180	3,500	660
24	1.0	7	1.4	0.7	0.4	20.2	0.3	1.7	25.0	1.1	18.1	1,180	3,500	850
27	1.0	7	1.4	0.7	0.4	20.7	0.3	1.7	25.5	1.1	18.1	1,180	3,500	910
33	1.0	7	1.4	0.7	0.4	22.5	0.3	1.7	27.3	1.1	18.1	1,180	3,500	1,060
37	1.0	7	1.4	0.7	0.4	23.5	0.3	1.8	28.5	1.2	18.1	1,180	3,500	1,160
44	1.0	7	1.4	0.7	0.4	26.8	0.3	1.9	32.0	1.3	18.1	1,180	3,501	1,400
2	1.5	7	1.7	0.7	0.4	7.4	0.2	1.1	10.7	0.6	12.1	1,030	3,500	160
3	1.5	7	1.7	0.7	0.4	7.9	0.2	1.2	11.4	0.6	12.1	1,030	3,500	190
4	1.5	7	1.7	0.7	0.4	8.8	0.2	1.2	12.3	0.7	12.1	1,030	3,500	220
5	1.5	7	1.7	0.7	0.4	9.9	0.2	1.2	13.4	0.7	12.1	1,030	3,500	260
7	1.5	7	1.7	0.7	0.4	10.9	0.3	1.3	14.9	0.7	12.1	1,030	3,500	350
9	1.5	7	1.7	0.7	0.4	13.0	0.3	1.4	17.2	0.8	12.1	1,030	3,500	440
12	1.5	7	1.7	0.7	0.4	14.9	0.3	1.4	19.1	0.9	12.1	1,030	3,500	550
16	1.5	7	1.7	0.7	0.4	16.9	0.3	1.5	21.3	0.9	12.1	1,030	3,500	690
19	1.5	7	1.7	0.7	0.4	17.9	0.3	1.6	22.5	1.0	12.1	1,030	3,500	790
24	1.5	7	1.7	0.7	0.4	21.4	0.3	1.7	26.2	1.1	12.1	1,030	3,500	1,000
27	1.5	7	1.7	0.7	0.4	21.9	0.3	1.7	26.7	1.1	12.1	1,030	3,500	1,080
33	1.5	7	1.7	0.7	0.4	23.9	0.3	1.8	28.9	1.2	12.1	1,030	3,500	1,270
37	1.5	7	1.7	0.7	0.4	24.9	0.3	1.8	29.9	1.2	12.1	1,030	3,500	1,390
44	1.5	7	1.7	0.7	0.4	28.4	0.3	2.0	33.8	1.3	12.1	1,030	3,501	1,680
2	2.5	7	2.2	0.7	0.4	8.4	0.2	1.2	11.9	0.7	7.41	850	3,500	200
3	2.5	7	2.2	0.7	0.4	9.0	0.2	1.2	12.5	0.7	7.41	850	3,500	210
4	2.5	7	2.2	0.7	0.4	10.1	0.3	1.3	14.1	0.7	7.41	850	3,500	310
5	2.5	7	2.2	0.7	0.4	11.2	0.3	1.3	15.2	0.8	7.41	850	3,500	370
7	2.5	7	2.2	0.7	0.4	12.4	0.3	1.3	16.4	0.8	7.41	850	3,500	450
9	2.5	7	2.2	0.7	0.4	14.9	0.3	1.4	19.1	0.9	7.41	850	3,500	580
12	2.5	7	2.2	0.7	0.4	17.0	0.3	1.5	21.4	0.9	7.41	850	3,500	730
16	2.5	7	2.2	0.7	0.4	19.2	0.3	1.6	23.8	1.0	7.41	850	3,500	930
19	2.5	7	2.2	0.7	0.4	20.4	0.3	1.7	25.2	1.1	7.41	850	3,500	1,060
24	2.5	7	2.2	0.7	0.4	24.4	0.3	1.8	29.4	1.2	7.41	850	3,500	1,350
27	2.5	7	2.2	0.7	0.4	25.0	0.3	1.8	30.0	1.2	7.41	850	3,500	1,460
33	2.5	7	2.2	0.7	0.4	27.2	0.3	1.9	32.4	1.3	7.41	850	3,500	1,740
37	2.5	7	2.2	0.7	0.4	28.4	0.3	2.0	33.8	1.3	7.41	850	3,500	1,920
44	2.5	7	2.2	0.7	0.4	32.4	0.4	2.2	38.7	1.5	7.41	850	3,501	2,420



Cable Designation

0.6/1kV BIOI, 0.6/1kV BICI

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-353
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Fire resistance : IEC 60331-21(90min)
IEC 60331-1,-2(120min)
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or
IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail																					
	Conductor		- Stranded plain annealed copper wire as per IEC 60228, Class 2																					
	Fire resisting layer	B	- Mica/glass tape																					
	Insulation		- XLPE as per IEC 60092-351																					
	Cabling		- Insulated conductors shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable																					
	Inner sheath	I	- SHF1 as per IEC 60092-359																					
	Armor	O	- Braid of plain annealed copper wire(o) or galvanized steel wire(c)																					
	Outer sheath	(C)	- Coverage density : Min. 90%																					
		I	- SHF1 as per IEC 60092-359 - Outer sheath color : Black																					
	Identification		<table border="1"> <thead> <tr> <th>No. of Cores</th> <th>Without Earth core</th> <th>With Earth core</th> </tr> </thead> <tbody> <tr> <td>1C</td> <td>Black</td> <td>-</td> </tr> <tr> <td>2C</td> <td>Red , Black</td> <td>-</td> </tr> <tr> <td>3C / 2C + E</td> <td>Red , Yellow, Blue</td> <td>Red , Yellow, G/Y</td> </tr> <tr> <td>4C / 3C + E</td> <td>Red , Yellow, Blue, Black</td> <td>Red , Yellow, Blue, G/Y</td> </tr> <tr> <td>5C / 4C + E</td> <td>Black No. on white insulation</td> <td>Red , Yellow, Blue, Black, G/Y</td> </tr> <tr> <td>5C and over</td> <td>Black number on white insulation</td> <td></td> </tr> </tbody> </table>	No. of Cores	Without Earth core	With Earth core	1C	Black	-	2C	Red , Black	-	3C / 2C + E	Red , Yellow, Blue	Red , Yellow, G/Y	4C / 3C + E	Red , Yellow, Blue, Black	Red , Yellow, Blue, G/Y	5C / 4C + E	Black No. on white insulation	Red , Yellow, Blue, Black, G/Y	5C and over	Black number on white insulation	
		No. of Cores	Without Earth core	With Earth core																				
		1C	Black	-																				
		2C	Red , Black	-																				
		3C / 2C + E	Red , Yellow, Blue	Red , Yellow, G/Y																				
		4C / 3C + E	Red , Yellow, Blue, Black	Red , Yellow, Blue, G/Y																				
5C / 4C + E	Black No. on white insulation	Red , Yellow, Blue, Black, G/Y																						
5C and over	Black number on white insulation																							
			Note) 1. G/Y means green base color with yellow stripe.																					
			2. Control cable (2C, 3C and 4C) shall be identified by the number printing.																					

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

Fire resistance

LV Power & Control Cable

0.6/1kV BIOI, 0.6/1kV BICI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km	
1	1.5	7	1.7	0.7	0.9	5.5	0.3	0.8	9.0	0.6	12.1	1,030	3,500	130
	2.5	7	2.2	0.7	1.0	6.2	0.3	0.8	9.7	0.6	7.41	850	3,500	160
	4	7	2.7	0.7	1.0	6.7	0.3	0.8	10.2	0.6	4.61	700	3,500	180
	6	7	3.3	0.7	1.0	7.3	0.3	0.8	10.8	0.6	3.08	600	3,500	210
	10	7	4.2	0.7	1.0	8.3	0.3	0.8	11.8	0.7	1.83	480	3,500	270
	16	7	5.3	0.7	1.1	9.5	0.3	0.9	13.0	0.7	1.15	390	3,500	350
	25	7	6.6	0.9	1.2	11.4	0.3	0.9	14.9	0.7	0.727	400	3,500	490
	35	7	7.9	0.9	1.2	12.5	0.3	0.9	16.0	0.8	0.524	350	3,500	600
	50	19	9.1	1.0	1.3	14.3	0.3	1.0	17.8	0.8	0.387	330	3,500	760
	70	19	11.0	1.1	1.3	16.3	0.3	1.0	19.8	0.9	0.268	300	3,500	1,010
	95	19	12.9	1.1	1.4	18.4	0.3	1.1	22.1	1.0	0.193	260	3,500	1,320
	120	37	14.5	1.2	1.5	20.4	0.3	1.1	24.1	1.0	0.153	250	3,500	1,610
	150	37	16.2	1.4	1.6	22.6	0.3	1.2	26.5	1.1	0.124	270	3,500	1,940
	185	37	18.0	1.6	1.7	25.0	0.3	1.3	29.1	1.2	0.0991	270	3,500	2,380
	240	61	20.6	1.7	1.8	28.1	0.3	1.3	32.2	1.3	0.0754	250	3,500	3,020
300	61	23.1	1.8	1.9	30.9	0.4	1.4	35.5	1.4	0.0601	240	3,500	3,760	
2	1.5	7	1.7	0.7	1.1	9.4	0.3	0.9	12.9	0.7	12.1	1,030	3,500	240
	2.5	7	2.2	0.7	1.1	10.4	0.3	0.9	13.9	0.7	7.41	850	3,500	280
	4	7	2.7	0.7	1.2	11.6	0.3	0.9	15.1	0.8	4.61	700	3,500	340
	6	7	3.3	0.7	1.2	12.8	0.3	1.0	16.3	0.8	3.08	600	3,500	410
	10	7	4.2	0.7	1.3	15.0	0.3	1.0	18.5	0.9	1.83	480	3,500	550
	16	7	5.3	0.7	1.4	17.2	0.3	1.1	20.9	0.9	1.15	390	3,500	730
	25	7	6.6	0.9	1.5	20.8	0.3	1.2	24.7	1.0	0.727	400	3,500	1,040
	35	7	7.9	0.9	1.6	23.2	0.3	1.2	27.1	1.1	0.524	350	3,500	1,300
	50	19	9.1	1.0	1.7	26.6	0.3	1.3	30.7	1.2	0.387	330	3,500	1,670
	70	19	11.0	1.1	1.9	31.0	0.4	1.4	35.7	1.4	0.268	300	3,500	2,340
	95	19	12.9	1.1	2.0	35.0	0.4	1.5	39.9	1.5	0.193	260	3,500	3,030
	120	37	14.5	1.2	2.2	39.0	0.4	1.6	44.1	1.6	0.153	250	3,500	3,710
150	37	16.2	1.4	2.3	43.2	0.4	1.7	48.5	1.8	0.124	270	3,500	4,470	
185	37	18.0	1.6	2.5	48.0	0.4	1.8	53.5	1.9	0.0991	270	3,500	5,470	
2C+E	1.5	7	1.7	0.7	1.1	9.9	0.3	0.9	13.4	0.7	12.1	1,030	3,500	270
2C+E	2.5	7	2.2	0.7	1.1	11.0	0.3	0.9	14.5	0.7	7.41	850	3,500	320
2C+E	4	7	2.7	0.7	1.2	12.3	0.3	0.9	15.8	0.8	4.61	700	3,500	400
2C+E	6	7	3.3	0.7	1.2	13.6	0.3	1.0	17.1	0.8	3.08	600	3,500	490
2C+E	10	7	4.2	0.7	1.3	15.9	0.3	1.0	19.4	0.9	1.83	480	3,500	680
2C+E	16	7	5.3	0.7	1.4	18.3	0.3	1.1	22.0	1.0	1.15	390	3,500	920
2C	25	7	6.6	0.9	1.5	21.5	0.3	1.2	25.4	1.1	0.727	400	3,500	1,220
Earth	16	7	5.3	0.7										
2C	35	7	7.9	0.9	1.6	24.3	0.3	1.2	28.2	1.1	0.524	350	3,500	1,590
Earth	25	7	6.6	0.9										
2C	50	19	9.1	1.0	1.8	27.6	0.3	1.3	31.7	1.3	0.387	330	3,500	1,960
Earth	25	7	6.6	0.9										
2C	70	19	11.0	1.1	1.9	31.7	0.4	1.4	36.4	1.4	0.268	300	3,500	2,700
Earth	35	7	7.9	0.9										
2C	95	19	12.9	1.1	2.1	36.1	0.4	1.5	41.0	1.5	0.193	260	3,500	3,530
Earth	50	19	9.1	1.0										
2C	120	37	14.5	1.2	2.2	40.3	0.4	1.7	45.6	1.7	0.153	250	3,500	4,430
Earth	70	19	11.0	1.1										
2C	150	37	16.2	1.4	2.4	44.9	0.4	1.8	50.4	1.8	0.124	270	3,500	5,470
Earth	95	19	12.9	1.1										
2C	185	37	18.0	1.6	2.6	49.2	0.4	1.9	54.9	1.9	0.0991	270	3,500	6,450
Earth	95	19	12.9	1.1										

0.6/1kV B1OI, 0.6/1kV B1CI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km	
3	1.5	7	1.7	0.7	1.1	9.9	0.3	0.9	13.4	0.7	12.1	1,030	3,500	270
	2.5	7	2.2	0.7	1.1	11.0	0.3	0.9	14.5	0.7	7.41	850	3,500	320
	4	7	2.7	0.7	1.2	12.3	0.3	0.9	15.8	0.8	4.61	700	3,500	400
	6	7	3.3	0.7	1.2	13.6	0.3	1.0	17.1	0.8	3.08	600	3,500	490
	10	7	4.2	0.7	1.3	15.9	0.3	1.0	19.4	0.9	1.83	480	3,500	680
	16	7	5.3	0.7	1.4	18.3	0.3	1.1	22.0	1.0	1.15	390	3,500	920
	25	7	6.6	0.9	1.6	22.4	0.3	1.2	26.3	1.1	0.727	400	3,500	1,340
	35	7	7.9	0.9	1.7	24.9	0.3	1.3	29.0	1.2	0.524	350	3,500	1,720
	50	19	9.1	1.0	1.8	28.6	0.3	1.3	32.7	1.3	0.387	330	3,500	2,200
	70	19	11.0	1.1	2.0	33.3	0.4	1.5	38.2	1.4	0.268	300	3,500	3,100
	95	19	12.9	1.1	2.1	37.6	0.4	1.6	42.7	1.6	0.193	260	3,500	4,050
	120	37	14.5	1.2	2.3	41.9	0.4	1.7	47.2	1.7	0.153	250	3,500	4,980
	150	37	16.2	1.4	2.5	46.6	0.4	1.8	52.1	1.9	0.124	270	3,500	6,050
	185	37	18.0	1.6	2.6	51.5	0.4	1.9	57.2	2.0	0.0991	270	3,500	7,390
	240	61	20.6	1.7	2.9	58.4	0.4	2.1	64.5	2.2	0.0754	250	3,500	9,500
3C+E	1.5	7	1.7	0.7	1.1	10.8	0.3	0.9	14.3	0.7	12.1	1,030	3,500	310
3C+E	2.5	7	2.2	0.7	1.2	12.3	0.3	0.9	15.8	0.8	7.41	850	3,500	390
3C+E	4	7	2.7	0.7	1.2	13.5	0.3	1.0	17.0	0.8	4.61	700	3,500	480
3C+E	6	7	3.3	0.7	1.3	15.1	0.3	1.0	18.6	0.9	3.08	600	3,500	600
3C+E	10	7	4.2	0.7	1.4	17.7	0.3	1.1	21.4	0.9	1.83	480	3,500	850
3C+E	16	7	5.3	0.7	1.5	20.3	0.3	1.1	24.0	1.0	1.15	390	3,500	1,150
3C	25	7	6.6	0.9	1.6	24.1	0.3	1.2	28.0	1.1	0.727	400	3,500	1,390
Earth	16	7	5.3	0.7										
3C	35	7	7.9	0.9	1.7	27.1	0.3	1.3	31.2	1.2	0.524	350	3,500	1,770
Earth	25	7	6.6	0.9										
3C	50	19	9.1	1.0	1.9	30.8	0.4	1.4	35.5	1.4	0.387	330	3,500	2,360
Earth	25	7	6.6	0.9										
3C	70	19	11.0	1.1	2.1	35.7	0.4	1.5	40.6	1.5	0.268	300	3,500	3,190
Earth	35	7	7.9	0.9										
3C	95	19	12.9	1.1	2.2	40.4	0.4	1.7	45.7	1.7	0.193	260	3,500	4,180
Earth	50	19	9.1	1.0										
3C	120	37	14.5	1.2	2.4	45.2	0.4	1.8	50.7	1.8	0.153	250	3,500	5,140
Earth	70	19	11.0	1.1										
3C	150	37	16.2	1.4	2.6	50.4	0.4	1.9	56.1	2.0	0.124	270	3,500	6,230
Earth	95	19	12.9	1.1										
3C	185	37	18.0	1.6	2.8	55.4	0.4	2.0	61.3	2.1	0.0991	270	3,500	7,620
Earth	95	19	12.9	1.1										
3C	240	61	20.6	1.7	3.0	62.4	0.4	2.2	68.7	2.4	0.0754	250	3,500	9,730
Earth	120	37	14.5	1.2										
4	1.5	7	1.7	0.7	1.1	10.8	0.3	0.9	14.3	0.7	12.1	1,030	3,500	310
	2.5	7	2.2	0.7	1.2	12.3	0.3	0.9	15.8	0.8	7.41	850	3,500	390
	4	7	2.7	0.7	1.2	13.5	0.3	1.0	17.0	0.8	4.61	700	3,500	480
	6	7	3.3	0.7	1.3	15.1	0.3	1.0	18.6	0.9	3.08	600	3,500	600
	10	7	4.2	0.7	1.4	17.7	0.3	1.1	21.4	0.9	1.83	480	3,500	850
	16	7	5.3	0.7	1.5	20.3	0.3	1.1	24.0	1.0	1.15	390	3,500	1,150
	25	7	6.6	0.9	1.6	24.6	0.3	1.2	28.5	1.2	0.727	400	3,500	1,670
	35	7	7.9	0.9	1.8	27.7	0.3	1.3	31.8	1.3	0.524	350	3,500	2,170
	50	19	9.1	1.0	1.9	31.8	0.4	1.4	36.5	1.4	0.387	330	3,500	2,880
	70	19	11.0	1.1	2.1	37.0	0.4	1.6	42.1	1.6	0.268	300	3,500	3,950
	95	19	12.9	1.1	2.3	42.0	0.4	1.7	47.3	1.7	0.193	260	3,500	5,200
	120	37	14.5	1.2	2.5	46.7	0.4	1.8	52.2	1.9	0.153	250	3,500	6,400
	150	37	16.2	1.4	2.7	51.9	0.4	1.9	57.6	2.0	0.124	270	3,500	7,770
	185	37	18.0	1.6	2.9	57.7	0.4	2.1	63.8	2.2	0.0991	270	3,500	9,580

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

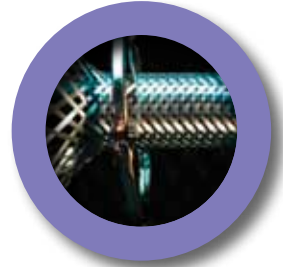
Technical data

Fire resistance

LV Power & Control Cable

0.6/1kV BIOI, 0.6/1kV BICI

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	mm ²	ea.	mm	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ-km	V/5min	kg/km
2	1.0	7	1.4	0.7	1.1	9.0	0.3	0.9	12.5	0.7	18.1	1,180	3,500	220
3	1.0	7	1.4	0.7	1.1	9.5	0.3	0.9	13.0	0.7	18.1	1,180	3,500	240
4	1.0	7	1.4	0.7	1.1	10.4	0.3	0.9	13.9	0.7	18.1	1,180	3,500	280
5	1.0	7	1.4	0.7	1.2	11.5	0.3	0.9	15.0	0.8	18.1	1,180	3,500	330
7	1.0	7	1.4	0.7	1.2	12.5	0.3	0.9	16.0	0.8	18.1	1,180	3,500	380
9	1.0	7	1.4	0.7	1.3	14.7	0.3	1.0	18.2	0.8	18.1	1,180	3,500	470
12	1.0	7	1.4	0.7	1.3	16.5	0.3	1.0	20.0	0.9	18.1	1,180	3,500	570
16	1.0	7	1.4	0.7	1.4	18.5	0.3	1.1	22.2	1.0	18.1	1,180	3,500	700
19	1.0	7	1.4	0.7	1.5	19.7	0.3	1.1	23.4	1.0	18.1	1,180	3,500	790
24	1.0	7	1.4	0.7	1.6	23.2	0.3	1.2	27.1	1.1	18.1	1,180	3,500	1,010
27	1.0	7	1.4	0.7	1.6	23.7	0.3	1.2	27.6	1.1	18.1	1,180	3,500	1,070
33	1.0	7	1.4	0.7	1.7	25.7	0.3	1.3	29.8	1.2	18.1	1,180	3,500	1,250
37	1.0	7	1.4	0.7	1.7	26.7	0.3	1.3	30.8	1.2	18.1	1,180	3,500	1,350
44	1.0	7	1.4	0.7	1.9	30.4	0.4	1.4	35.1	1.4	18.1	1,180	3,501	1,720
2	1.5	7	1.7	0.7	1.1	9.6	0.3	0.9	13.1	0.7	12.1	1,030	3,500	240
3	1.5	7	1.7	0.7	1.1	10.2	0.3	0.9	13.7	0.7	12.1	1,030	3,500	280
4	1.5	7	1.7	0.7	1.1	11.1	0.3	0.9	14.6	0.7	12.1	1,030	3,500	320
5	1.5	7	1.7	0.7	1.2	12.3	0.3	0.9	15.8	0.8	12.1	1,030	3,500	370
7	1.5	7	1.7	0.7	1.2	13.4	0.3	1.0	16.9	0.8	12.1	1,030	3,500	440
9	1.5	7	1.7	0.7	1.3	15.8	0.3	1.0	19.3	0.9	12.1	1,030	3,500	550
12	1.5	7	1.7	0.7	1.4	18.0	0.3	1.1	21.7	1.0	12.1	1,030	3,500	690
16	1.5	7	1.7	0.7	1.5	20.1	0.3	1.1	23.8	1.0	12.1	1,030	3,500	840
19	1.5	7	1.7	0.7	1.5	21.2	0.3	1.2	25.1	1.1	12.1	1,030	3,500	950
24	1.5	7	1.7	0.7	1.7	25.2	0.3	1.3	29.3	1.2	12.1	1,030	3,500	1,220
27	1.5	7	1.7	0.7	1.7	25.8	0.3	1.3	29.9	1.2	12.1	1,030	3,500	1,300
33	1.5	7	1.7	0.7	1.8	27.9	0.3	1.3	32.0	1.3	12.1	1,030	3,500	1,510
37	1.5	7	1.7	0.7	1.8	29.0	0.3	1.4	33.3	1.3	12.1	1,030	3,500	1,650
44	1.5	7	1.7	0.7	2.0	33.0	0.4	1.5	37.9	1.4	12.1	1,030	3,501	2,080
2	2.5	7	2.2	0.7	1.1	10.4	0.3	0.9	13.9	0.7	7.41	850	3,500	280
3	2.5	7	2.2	0.7	1.1	11.0	0.3	0.9	14.5	0.7	7.41	850	3,500	320
4	2.5	7	2.2	0.7	1.2	12.3	0.3	0.9	15.8	0.8	7.41	850	3,500	390
5	2.5	7	2.2	0.7	1.2	13.4	0.3	1.0	16.9	0.8	7.41	850	3,500	450
7	2.5	7	2.2	0.7	1.3	14.8	0.3	1.0	18.3	0.8	7.41	850	3,500	550
9	2.5	7	2.2	0.7	1.4	17.5	0.3	1.1	21.2	0.9	7.41	850	3,500	700
12	2.5	7	2.2	0.7	1.5	19.8	0.3	1.1	23.5	1.0	7.41	850	3,500	870
16	2.5	7	2.2	0.7	1.6	22.2	0.3	1.2	26.1	1.1	7.41	850	3,500	1,090
19	2.5	7	2.2	0.7	1.6	23.4	0.3	1.2	27.3	1.1	7.41	850	3,500	1,220
24	2.5	7	2.2	0.7	1.8	27.8	0.3	1.3	31.9	1.3	7.41	850	3,500	1,560
27	2.5	7	2.2	0.7	1.8	28.4	0.3	1.3	32.5	1.3	7.41	850	3,500	1,680
33	2.5	7	2.2	0.7	1.9	30.8	0.4	1.4	35.5	1.4	7.41	850	3,500	2,060
37	2.5	7	2.2	0.7	1.9	32.0	0.4	1.4	36.7	1.4	7.41	850	3,500	2,230
44	2.5	7	2.2	0.7	2.1	36.4	0.4	1.6	41.5	1.5	7.41	850	3,501	2,710



VFD Cable



Flame Retardant

0.6/1kV (1.8/3kV) FX-TFOI (VFD)

38 ~ 39



Flame retardant
VFD Cable



Cable Designation

0.6/1kV(1.8/3kV) FX-TFOI (VFD)

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-353
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail					
	Conductor	FX	- Stranded plain annealed copper wires as per IEC 60228, Class 5 - A suitable tape may be applied on the conductor					
	Insulation	T	- XLPE as per IEC 60092-351					
	Cabling		- Insulated conductors shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable					
	Inner covering	F	- Non-hygroscopic material					
	Armor(Screen)	(VFD) O	- CU/PS Tape providing 100% Coverage - Braid of plain annealed copper wire - Coverage density : Min. 90%					
	Sheath	I	- SHF1 as per IEC 60092-359 - Sheath color : Black					
	Identification		<table border="1"> <thead> <tr> <th>No. of Cores</th> <th>Color of core</th> </tr> </thead> <tbody> <tr> <td>1C</td> <td>Black</td> </tr> <tr> <td>3C + 3E</td> <td>3C : Red, Yellow, Blue 3E : G/Y (Green base color with Yellow stripe)</td> </tr> </tbody> </table>	No. of Cores	Color of core	1C	Black	3C + 3E
No. of Cores	Color of core							
1C	Black							
3C + 3E	3C : Red, Yellow, Blue 3E : G/Y (Green base color with Yellow stripe)							

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

0.6/1kV (1.8/3kV) FX-TFOI(VFD)

Class 5 conductor

No. of Cores	Conductor			Thickness of Insulation	Thickness of inner covering (lapped)	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight
	Nominal Area	Max. dia. of wires in conductor	Max. Dia.						Nominal	Tolerance				
No.	mm ²	mm	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km	
1	10	0.41	5.1	2.0	0.4	8.6	0.2	1.2	12.2	0.7	1.91	1,150	6,500	250
	16	0.41	6.3	2.0	0.4	10.0	0.3	1.3	14.1	0.7	1.21	920	6,500	340
	25	0.41	7.8	2.0	0.4	11.6	0.3	1.3	15.7	0.8	0.780	750	6,500	470
	35	0.41	9.2	2.0	0.4	12.8	0.3	1.4	17.1	0.8	0.554	660	6,500	590
	50	0.41	11.0	2.0	0.4	14.2	0.3	1.4	18.5	0.9	0.386	580	6,500	730
	70	0.51	13.1	2.0	0.4	16.1	0.3	1.5	20.6	0.9	0.272	500	6,500	960
	95	0.51	15.1	2.0	0.4	17.8	0.3	1.6	22.5	1.0	0.206	450	6,500	1,200
	120	0.51	17.0	2.0	0.4	19.7	0.3	1.6	24.4	1.0	0.161	400	6,500	1,470
	150	0.51	19.0	2.0	0.4	21.3	0.3	1.7	26.2	1.1	0.129	360	6,500	1,750
	185	0.51	21.0	2.0	0.4	22.8	0.3	1.8	27.9	1.1	0.1060	340	6,500	2,080
	240	0.51	24.0	2.0	0.4	25.9	0.3	1.9	31.2	1.2	0.0801	290	6,500	2,740
	300	0.51	27.0	2.0	0.4	28.4	0.3	2.0	33.9	1.3	0.0641	260	6,500	3,390
3C	16	0.41	6.3	2.0	0.4	21.1	0.3	1.7	25.9	1.1	1.21	830	6,500	1,150
+3E	6	0.31	3.9	0.7							3.30			
3C	25	0.41	7.8	2.0	0.4	24.5	0.3	1.8	29.5	1.2	0.780	680	6,500	1,530
+3E	6	0.31	3.9	0.7							3.30			
3C	35	0.41	9.2	2.0	0.4	27.1	0.3	1.9	32.3	1.3	0.554	600	6,500	1,890
+3E	6	0.31	3.9	0.7							3.30			
3C	50	0.41	11.0	2.0	0.4	30.1	0.4	2.1	36.2	1.4	0.386	530	6,500	2,560
+3E	10	0.41	5.1	0.7							1.91			
3C	70	0.51	13.1	2.0	0.4	34.2	0.4	2.2	40.5	1.5	0.272	450	6,500	3,440
+3E	16	0.41	6.3	0.7							1.21			
3C	95	0.51	15.1	2.0	0.4	37.9	0.4	2.4	44.6	1.6	0.206	400	6,500	4,220
+3E	16	0.41	6.3	0.7							1.21			
3C	120	0.51	17.0	2.0	0.6	42.4	0.4	2.6	49.5	1.8	0.161	360	6,500	5,430
+3E	25	0.41	7.8	0.9							0.780			
3C	150	0.51	19.0	2.0	0.6	45.8	0.4	2.7	53.1	1.9	0.129	330	6,500	6,290
+3E	25	0.41	7.8	0.9							0.780			
3C	185	0.51	21.0	2.0	0.6	49.1	0.4	2.8	56.6	2.0	0.1060	300	6,500	7,580
+3E	35	0.41	9.2	0.9							0.54			
3C	240	0.51	24.0	2.0	0.6	55.8	0.4	3.1	63.9	2.2	0.0801	260	6,500	10,080
+3E	50	0.41	11.0	1.0							0.386			

HV Power Cable
 LV Power & Control Cable
 VFD Cable
 Instrumentation & Communication Cable
 Technical data



Instrumentation & Communication Cable



Flame Retardant

250V TI, 250V TI(c)	41 ~ 43
250V TI(i), 250V TI(i&c)	44 ~ 46
250V TFOI, 250V TFOI(c)	47 ~ 49
250V TFOI(i), 250V TFOI(i&c)	50 ~ 52
250V TIOI, 250V TICl, 250V TIOI(c), 250V TICl(c)	53 ~ 55
250V TIOI(i), 250V TICl(i), 250V TIOI(i&c), 250V TICl(i&c)	56 ~ 58

Fire Resistance

250V BI, 250V BI(c)	59 ~ 61
250V BI(i), 250V BI(i&c)	62 ~ 64
250V BFOI, 250V BFOI(c)	65 ~ 67
250V BFOI(i), 250V BFOI(i&c)	68 ~ 70
250V BIOI, 250V BICl, 250V BIOI(c), 250V BICl(c)	71 ~ 73
250V BIOI(i), 250V BICl(i), 250V BIOI(i&c), 250V BICl(i&c)	74 ~ 76

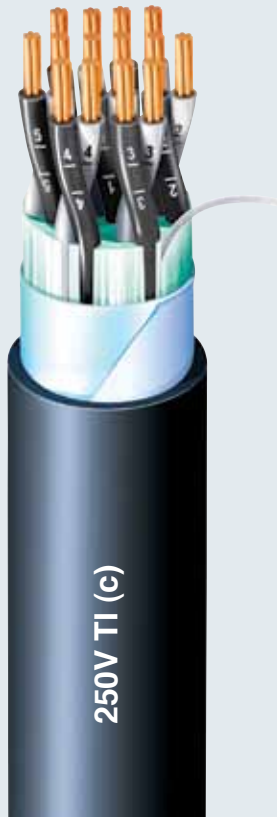


Flame retardant

Instrumentation Cable

E-Route®

IEC 60092-350, 353, 354, 376



Cable Designation

250V TI, 250V TI(c)

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or
IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2
	Insulation	T	- XLPE as per IEC 60092-351
	Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad
	Cabling		- Twisted pairs/triads shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable
	Collective screen	(c)	- Screened by AL/PS tape with tinned copper drain wire - A suitable tape may be applied on the collective screen - In case of 250V TI cable, collective screen is omitted
	Sheath	I	- SHF1 as per IEC 60092-359 - Sheath color : Black
	Core identification		- Colored insulation plus Arabic number printing on the insulation • Pair : White, Black • Triad : White, Red, Black

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

Flame retardant

Instrumentation Cable

250V TI, 250V TI(c)

No. of Pairs	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km
1P	0.75	7	1.2	0.5	1.0	6.9	0.5	26.0	1,030	1,500	60
2P	0.75	7	1.2	0.5	1.1	10.2	0.6	26.0	1,030	1,500	100
3P	0.75	7	1.2	0.5	1.1	10.8	0.6	26.0	1,030	1,500	130
4P	0.75	7	1.2	0.5	1.2	11.7	0.7	26.0	1,030	1,500	160
7P	0.75	7	1.2	0.5	1.3	15.0	0.8	26.0	1,030	1,500	250
8P	0.75	7	1.2	0.5	1.3	15.9	0.8	26.0	1,030	1,500	280
10P	0.75	7	1.2	0.5	1.4	17.8	0.8	26.0	1,030	1,500	330
12P	0.75	7	1.2	0.5	1.4	18.5	0.9	26.0	1,030	1,500	370
14P	0.75	7	1.2	0.5	1.4	19.1	0.9	26.0	1,030	1,500	420
16P	0.75	7	1.2	0.5	1.5	20.7	0.9	26.0	1,030	1,500	480
19P	0.75	7	1.2	0.5	1.5	21.5	0.9	26.0	1,030	1,500	540
24P	0.75	7	1.2	0.5	1.6	24.4	1.0	26.0	1,030	1,500	680
30P	0.75	7	1.2	0.5	1.7	27.2	1.1	26.0	1,030	1,500	830
32P	0.75	7	1.2	0.5	1.8	27.9	1.1	26.0	1,030	1,500	890
37P	0.75	7	1.2	0.5	1.8	29.2	1.2	26.0	1,030	1,500	1,000
1P	1.0	7	1.4	0.5	1.0	7.3	0.5	19.2	920	1,500	70
2P	1.0	7	1.4	0.5	1.1	10.9	0.6	19.2	920	1,500	120
3P	1.0	7	1.4	0.5	1.2	11.8	0.7	19.2	920	1,500	160
4P	1.0	7	1.4	0.5	1.2	12.5	0.7	19.2	920	1,500	190
7P	1.0	7	1.4	0.5	1.3	16.1	0.8	19.2	920	1,500	300
8P	1.0	7	1.4	0.5	1.4	17.2	0.8	19.2	920	1,500	340
10P	1.0	7	1.4	0.5	1.4	19.1	0.9	19.2	920	1,500	400
12P	1.0	7	1.4	0.5	1.5	20.1	0.9	19.2	920	1,500	470
14P	1.0	7	1.4	0.5	1.5	20.8	0.9	19.2	920	1,500	520
16P	1.0	7	1.4	0.5	1.6	22.4	1.0	19.2	920	1,500	590
19P	1.0	7	1.4	0.5	1.6	23.4	1.0	19.2	920	1,500	680
24P	1.0	7	1.4	0.5	1.7	26.5	1.1	19.2	920	1,500	850
30P	1.0	7	1.4	0.5	1.8	29.5	1.2	19.2	920	1,500	1,040
32P	1.0	7	1.4	0.5	1.8	30.0	1.2	19.2	920	1,500	1,100
37P	1.0	7	1.4	0.5	1.9	31.7	1.3	19.2	920	1,500	1,250
1P	1.5	7	1.7	0.6	1.0	8.3	0.5	12.8	910	1,500	90
2P	1.5	7	1.7	0.6	1.2	12.8	0.7	12.8	910	1,500	170
3P	1.5	7	1.7	0.6	1.2	13.6	0.7	12.8	910	1,500	210
4P	1.5	7	1.7	0.6	1.3	14.7	0.7	12.8	910	1,500	260
7P	1.5	7	1.7	0.6	1.4	19.0	0.9	12.8	910	1,500	410
8P	1.5	7	1.7	0.6	1.5	20.3	0.9	12.8	910	1,500	470
10P	1.5	7	1.7	0.6	1.6	22.8	1.0	12.8	910	1,500	570
12P	1.5	7	1.7	0.6	1.6	23.7	1.0	12.8	910	1,500	650
14P	1.5	7	1.7	0.6	1.6	24.6	1.0	12.8	910	1,500	730
16P	1.5	7	1.7	0.6	1.7	26.5	1.1	12.8	910	1,500	830
19P	1.5	7	1.7	0.6	1.8	27.9	1.1	12.8	910	1,500	960
24P	1.5	7	1.7	0.6	1.9	31.6	1.2	12.8	910	1,500	1,200
30P	1.5	7	1.7	0.6	2.0	35.2	1.4	12.8	910	1,500	1,480
32P	1.5	7	1.7	0.6	2.1	36.0	1.4	12.8	910	1,500	1,580
37P	1.5	7	1.7	0.6	2.1	37.8	1.4	12.8	910	1,500	1,780

250V TI, 250V TI(c)

No. of Triads	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km
1T	0.75	7	1.2	0.5	1.0	7.2	0.5	26.0	1,030	1,500	70
2T	0.75	7	1.2	0.5	1.1	11.0	0.6	26.0	1,030	1,500	130
3T	0.75	7	1.2	0.5	1.2	11.8	0.7	26.0	1,030	1,500	170
4T	0.75	7	1.2	0.5	1.2	12.9	0.7	26.0	1,030	1,500	210
7T	0.75	7	1.2	0.5	1.4	17.0	0.8	26.0	1,030	1,500	340
8T	0.75	7	1.2	0.5	1.4	18.3	0.8	26.0	1,030	1,500	390
10T	0.75	7	1.2	0.5	1.5	20.7	0.9	26.0	1,030	1,500	470
12T	0.75	7	1.2	0.5	1.5	21.8	1.0	26.0	1,030	1,500	530
14T	0.75	7	1.2	0.5	1.6	22.9	1.0	26.0	1,030	1,500	610
16T	0.75	7	1.2	0.5	1.6	24.2	1.0	26.0	1,030	1,500	680
19T	0.75	7	1.2	0.5	1.7	26.1	1.1	26.0	1,030	1,500	800
24T	0.75	7	1.2	0.5	1.8	29.0	1.2	26.0	1,030	1,500	990
30T	0.75	7	1.2	0.5	1.9	32.0	1.3	26.0	1,030	1,500	1,220
32T	0.75	7	1.2	0.5	2.0	33.3	1.3	26.0	1,030	1,500	1,300
37T	0.75	7	1.2	0.5	2.0	34.8	1.3	26.0	1,030	1,500	1,470
1T	1.0	7	1.4	0.5	1.0	7.7	0.5	19.2	920	1,500	80
2T	1.0	7	1.4	0.5	1.2	12.1	0.7	19.2	920	1,500	160
3T	1.0	7	1.4	0.5	1.2	12.8	0.7	19.2	920	1,500	200
4T	1.0	7	1.4	0.5	1.3	14.2	0.7	19.2	920	1,500	260
7T	1.0	7	1.4	0.5	1.4	18.5	0.9	19.2	920	1,500	420
8T	1.0	7	1.4	0.5	1.5	20.1	0.9	19.2	920	1,500	490
10T	1.0	7	1.4	0.5	1.6	22.8	1.0	19.2	920	1,500	580
12T	1.0	7	1.4	0.5	1.6	24.0	1.0	19.2	920	1,500	670
14T	1.0	7	1.4	0.5	1.7	25.1	1.1	19.2	920	1,500	770
16T	1.0	7	1.4	0.5	1.7	26.6	1.1	19.2	920	1,500	860
19T	1.0	7	1.4	0.5	1.8	28.7	1.2	19.2	920	1,500	1,010
24T	1.0	7	1.4	0.5	1.9	31.8	1.3	19.2	920	1,500	1,240
30T	1.0	7	1.4	0.5	2.0	35.1	1.4	19.2	920	1,500	1,530
32T	1.0	7	1.4	0.5	2.1	36.6	1.4	19.2	920	1,500	1,640
37T	1.0	7	1.4	0.5	2.2	38.4	1.5	19.2	920	1,500	1,860
1T	1.5	7	1.7	0.6	1.1	8.9	0.6	12.8	910	1,500	110
2T	1.5	7	1.7	0.6	1.2	13.8	0.7	12.8	910	1,500	210
3T	1.5	7	1.7	0.6	1.3	14.9	0.7	12.8	910	1,500	280
4T	1.5	7	1.7	0.6	1.3	16.3	0.8	12.8	910	1,500	350
7T	1.5	7	1.7	0.6	1.5	21.6	0.9	12.8	910	1,500	590
8T	1.5	7	1.7	0.6	1.6	23.6	1.0	12.8	910	1,500	670
10T	1.5	7	1.7	0.6	1.7	26.6	1.1	12.8	910	1,500	810
12T	1.5	7	1.7	0.6	1.8	28.3	1.1	12.8	910	1,500	950
14T	1.5	7	1.7	0.6	1.8	29.4	1.2	12.8	910	1,500	1,070
16T	1.5	7	1.7	0.6	1.9	31.3	1.2	12.8	910	1,500	1,210
19T	1.5	7	1.7	0.6	2.0	33.8	1.3	12.8	910	1,500	1,430
24T	1.5	7	1.7	0.6	2.1	37.5	1.4	12.8	910	1,500	1,770
30T	1.5	7	1.7	0.6	2.3	41.6	1.5	12.8	910	1,500	2,190
32T	1.5	7	1.7	0.6	2.3	43.1	1.6	12.8	910	1,500	2,320
37T	1.5	7	1.7	0.6	2.4	45.3	1.7	12.8	910	1,500	2,650

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Flame retardant

Instrumentation Cable



Cable Designation

250V TI (i), 250V TI (i&c)

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2
	Insulation	T	- XLPE as per IEC 60092-351
	Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad
	Individual screen	(i)	- Screened by AL/PS tape with tinned copper drain wire - Each pair/triad is wrapped with polyester tape to prevent electrical contact with adjacent pairs/triads
	Cabling		- Screened pairs/triads shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable
	Collective screen	(c)	- Screened by AL/PS tape with tinned copper drain wire - A suitable tape may be applied on the collective screen - In case of 250V TI(i) cable, collective screen is omitted
	Sheath		I - SHF1 as per IEC 60092-359 - Sheath color : Black
	Core identification		- Colored insulation plus Arabic number printing on the insulation • Pair : White, Black • Triad : White, Red, Black

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

250V TI(i), 250V TI(i&c)

No. of Pairs	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km
1P	0.75	7	1.2	0.5	1.0	6.9	0.5	26.0	1,030	1,500	60
2P	0.75	7	1.2	0.5	1.1	10.9	0.6	26.0	1,030	1,500	120
3P	0.75	7	1.2	0.5	1.2	11.7	0.7	26.0	1,030	1,500	160
4P	0.75	7	1.2	0.5	1.2	12.8	0.7	26.0	1,030	1,500	200
7P	0.75	7	1.2	0.5	1.3	15.8	0.8	26.0	1,030	1,500	310
8P	0.75	7	1.2	0.5	1.4	17.2	0.8	26.0	1,030	1,500	350
10P	0.75	7	1.2	0.5	1.5	19.7	0.9	26.0	1,030	1,500	430
12P	0.75	7	1.2	0.5	1.5	20.4	0.9	26.0	1,030	1,500	490
14P	0.75	7	1.2	0.5	1.5	21.4	0.9	26.0	1,030	1,500	550
16P	0.75	7	1.2	0.5	1.6	23.0	1.0	26.0	1,030	1,500	630
29P	0.75	7	1.2	0.5	1.6	23.4	1.0	26.0	1,030	1,500	710
24P	0.75	7	1.2	0.5	1.7	27.2	1.1	26.0	1,030	1,500	890
30P	0.75	7	1.2	0.5	1.8	29.0	1.2	26.0	1,030	1,500	1,080
32P	0.75	7	1.2	0.5	1.8	29.5	1.2	26.0	1,030	1,500	1,140
37P	0.75	7	1.2	0.5	1.9	31.1	1.2	26.0	1,030	1,500	1,300
1P	1.0	7	1.4	0.5	1.0	7.3	0.5	19.2	920	1,500	70
2P	1.0	7	1.4	0.5	1.2	11.8	0.7	19.2	920	1,500	150
3P	1.0	7	1.4	0.5	1.2	12.5	0.7	19.2	920	1,500	190
4P	1.0	7	1.4	0.5	1.2	13.6	0.7	19.2	920	1,500	230
7P	1.0	7	1.4	0.5	1.4	17.1	0.8	19.2	920	1,500	380
8P	1.0	7	1.4	0.5	1.4	18.3	0.8	19.2	920	1,500	430
10P	1.0	7	1.4	0.5	1.5	21.1	0.9	19.2	920	1,500	520
12P	1.0	7	1.4	0.5	1.5	21.9	1.0	19.2	920	1,500	590
14P	1.0	7	1.4	0.5	1.6	23.1	1.0	19.2	920	1,500	680
16P	1.0	7	1.4	0.5	1.6	24.6	1.0	19.2	920	1,500	760
19P	1.0	7	1.4	0.5	1.7	25.3	1.1	19.2	920	1,500	880
24P	1.0	7	1.4	0.5	1.8	29.3	1.2	19.2	920	1,500	1,110
30P	1.0	7	1.4	0.5	1.9	31.3	1.2	19.2	920	1,500	1,340
32P	1.0	7	1.4	0.5	1.9	31.8	1.3	19.2	920	1,500	1,420
37P	1.0	7	1.4	0.5	2.0	33.6	1.3	19.2	920	1,500	1,620
1P	1.5	7	1.7	0.6	1.0	8.3	0.5	12.8	910	1,500	90
2P	1.5	7	1.7	0.6	1.2	13.6	0.7	12.8	910	1,500	190
3P	1.5	7	1.7	0.6	1.3	14.6	0.7	12.8	910	1,500	250
4P	1.5	7	1.7	0.6	1.3	15.9	0.8	12.8	910	1,500	310
7P	1.5	7	1.7	0.6	1.5	20.0	0.9	12.8	910	1,500	500
8P	1.5	7	1.7	0.6	1.5	21.5	0.9	12.8	910	1,500	570
10P	1.5	7	1.7	0.6	1.7	24.9	1.0	12.8	910	1,500	700
12P	1.5	7	1.7	0.6	1.7	25.9	1.1	12.8	910	1,500	800
14P	1.5	7	1.7	0.6	1.7	27.1	1.1	12.8	910	1,500	900
16P	1.5	7	1.7	0.6	1.8	29.1	1.2	12.8	910	1,500	1,030
19P	1.5	7	1.7	0.6	1.8	29.7	1.2	12.8	910	1,500	1,170
24P	1.5	7	1.7	0.6	2.0	34.7	1.3	12.8	910	1,500	1,490
30P	1.5	7	1.7	0.6	2.1	37.0	1.4	12.8	910	1,500	1,810
32P	1.5	7	1.7	0.6	2.1	37.6	1.4	12.8	910	1,500	1,910
37P	1.5	7	1.7	0.6	2.2	39.7	1.5	12.8	910	1,500	2,180

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Flame retardant

Instrumentation Cable

250V TI(i), 250V TI(i&c)

No. of Triads	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km	
1T	0.75	7	1.2	0.5	1.0	7.5	0.5	26.0	1,030	1,500	80
2T	0.75	7	1.2	0.5	1.2	11.7	0.7	26.0	1,030	1,500	150
3T	0.75	7	1.2	0.5	1.2	12.4	0.7	26.0	1,030	1,500	200
4T	0.75	7	1.2	0.5	1.2	13.6	0.7	26.0	1,030	1,500	240
7T	0.75	7	1.2	0.5	1.4	17.9	0.8	26.0	1,030	1,500	410
8T	0.75	7	1.2	0.5	1.7	26.6	1.1	26.0	1,030	1,500	600
10T	0.75	7	1.2	0.5	1.5	21.6	0.9	26.0	1,030	1,500	550
12T	0.75	7	1.2	0.5	1.6	23.0	1.0	26.0	1,030	1,500	640
14T	0.75	7	1.2	0.5	1.6	23.9	1.0	26.0	1,030	1,500	730
16T	0.75	7	1.2	0.5	1.7	25.7	1.1	26.0	1,030	1,500	830
19T	0.75	7	1.2	0.5	1.8	27.8	1.1	26.0	1,030	1,500	970
24T	0.75	7	1.2	0.5	1.9	30.8	1.2	26.0	1,030	1,500	1,200
30T	0.75	7	1.2	0.5	2.0	34.0	1.3	26.0	1,030	1,500	1,480
32T	0.75	7	1.2	0.5	2.0	35.1	1.4	26.0	1,030	1,500	1,560
37T	0.75	7	1.2	0.5	2.1	37.0	1.4	26.0	1,030	1,500	1,790
1T	1.0	7	1.4	0.5	1.0	8.0	0.5	19.2	920	1,500	90
2T	1.0	7	1.4	0.5	1.2	12.6	0.7	19.2	920	1,500	190
3T	1.0	7	1.4	0.5	1.2	13.4	0.7	19.2	920	1,500	240
4T	1.0	7	1.4	0.5	1.3	14.8	0.7	19.2	920	1,500	300
7T	1.0	7	1.4	0.5	1.5	19.6	0.9	19.2	920	1,500	510
8T	1.0	7	1.4	0.5	1.8	29.1	1.2	19.2	920	1,500	730
10T	1.0	7	1.4	0.5	1.6	23.6	1.0	19.2	920	1,500	680
12T	1.0	7	1.4	0.5	1.7	25.1	1.1	19.2	920	1,500	800
14T	1.0	7	1.4	0.5	1.7	26.1	1.1	19.2	920	1,500	910
16T	1.0	7	1.4	0.5	1.8	28.1	1.1	19.2	920	1,500	1,030
19T	1.0	7	1.4	0.5	1.9	30.3	1.2	19.2	920	1,500	1,210
24T	1.0	7	1.4	0.5	2.0	33.6	1.3	19.2	920	1,500	1,500
30T	1.0	7	1.4	0.5	2.1	37.1	1.4	19.2	920	1,500	1,850
32T	1.0	7	1.4	0.5	2.2	38.6	1.5	19.2	920	1,500	1,980
37T	1.0	7	1.4	0.5	2.2	40.4	1.5	19.2	920	1,500	2,240
1T	1.5	7	1.7	0.6	1.1	9.2	0.6	12.8	910	1,500	120
2T	1.5	7	1.7	0.6	1.3	14.6	0.7	12.8	910	1,500	250
3T	1.5	7	1.7	0.6	1.3	15.5	0.8	12.8	910	1,500	320
4T	1.5	7	1.7	0.6	1.4	17.2	0.8	12.8	910	1,500	400
7T	1.5	7	1.7	0.6	1.6	22.7	1.0	12.8	910	1,500	680
8T	1.5	7	1.7	0.6	2.0	34.1	1.3	12.8	910	1,500	990
10T	1.5	7	1.7	0.6	1.8	27.6	1.1	12.8	910	1,500	930
12T	1.5	7	1.7	0.6	1.8	29.1	1.2	12.8	910	1,500	1,080
14T	1.5	7	1.7	0.6	1.9	30.5	1.2	12.8	910	1,500	1,230
16T	1.5	7	1.7	0.6	1.9	32.7	1.3	12.8	910	1,500	1,390
19T	1.5	7	1.7	0.6	2.0	35.3	1.4	12.8	910	1,500	1,640
24T	1.5	7	1.7	0.6	2.2	39.3	1.5	12.8	910	1,500	2,050
30T	1.5	7	1.7	0.6	2.3	43.4	1.6	12.8	910	1,500	2,520
32T	1.5	7	1.7	0.6	2.4	45.1	1.7	12.8	910	1,500	2,690
37T	1.5	7	1.7	0.6	2.5	47.4	1.7	12.8	910	1,500	3,070



Cable Designation

250V TFOI, 250V TFOI(c)

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2
	Insulation	T	- XLPE as per IEC 60092-351
	Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad
	Cabling		- Twisted pairs/triads shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable
	Collective screen	(c)	- Screened by AL/PS tape with tinned copper drain wire - A suitable tape may be applied on the collective screen - In case of 250V TFOI cable, collective screen is omitted
	Inner covering	F	- Non-hygroscopic material
	Armor	O	- Braid of plain annealed copper wire - Coverage density : Min. 90%
	Sheath	I	- SHF1 as per IEC 60092-359 - Sheath color : Black
	Core identification		- Colored insulation plus Arabic number printing on the insulation • Pair : White, Black • Triad : White, Red, Black

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Flame retardant

Instrumentation Cable

250V TFOI, 250V TFOI(c)

No. of Pairs	Conductor			Thickness of Insulation	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.					Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km
1P	0.75	7	1.2	0.5	4.8	0.2	1.0	7.9	0.5	26.0	1,030	1,500	80
2P	0.75	7	1.2	0.5	7.9	0.2	1.2	11.4	0.6	26.0	1,030	1,500	140
3P	0.75	7	1.2	0.5	8.5	0.2	1.2	12.0	0.7	26.0	1,030	1,500	160
4P	0.75	7	1.2	0.5	9.2	0.2	1.2	12.7	0.7	26.0	1,030	1,500	190
7P	0.75	7	1.2	0.5	11.8	0.3	1.3	15.8	0.8	26.0	1,030	1,500	290
8P	0.75	7	1.2	0.5	12.7	0.3	1.4	16.9	0.8	26.0	1,030	1,500	330
10P	0.75	7	1.2	0.5	14.7	0.3	1.4	18.9	0.9	26.0	1,030	1,500	390
12P	0.75	7	1.2	0.5	15.4	0.3	1.5	19.8	0.9	26.0	1,030	1,500	450
14P	0.75	7	1.2	0.5	16.0	0.3	1.5	20.4	0.9	26.0	1,030	1,500	490
16P	0.75	7	1.2	0.5	17.3	0.3	1.5	21.7	1.0	26.0	1,030	1,500	550
19P	0.75	7	1.2	0.5	18.2	0.3	1.6	22.8	1.0	26.0	1,030	1,500	630
24P	0.75	7	1.2	0.5	20.9	0.3	1.7	25.7	1.1	26.0	1,030	1,500	770
30P	0.75	7	1.2	0.5	23.5	0.3	1.8	28.5	1.2	26.0	1,030	1,500	940
32P	0.75	7	1.2	0.5	23.9	0.3	1.8	28.9	1.2	26.0	1,030	1,500	980
37P	0.75	7	1.2	0.5	25.3	0.3	1.9	30.5	1.2	26.0	1,030	1,500	1,110
1P	1.0	7	1.4	0.5	5.2	0.2	1.0	8.3	0.5	19.2	920	1,500	90
2P	1.0	7	1.4	0.5	8.6	0.2	1.2	12.1	0.7	19.2	920	1,500	160
3P	1.0	7	1.4	0.5	9.3	0.2	1.2	12.8	0.7	19.2	920	1,500	190
4P	1.0	7	1.4	0.5	10.0	0.2	1.2	13.5	0.7	19.2	920	1,500	220
7P	1.0	7	1.4	0.5	12.9	0.3	1.4	17.1	0.8	19.2	920	1,500	360
8P	1.0	7	1.4	0.5	13.8	0.3	1.4	18.0	0.8	19.2	920	1,500	390
10P	1.0	7	1.4	0.5	16.0	0.3	1.5	20.4	0.9	19.2	920	1,500	480
12P	1.0	7	1.4	0.5	16.7	0.3	1.5	21.1	0.9	19.2	920	1,500	530
14P	1.0	7	1.4	0.5	17.4	0.3	1.5	21.8	1.0	19.2	920	1,500	590
16P	1.0	7	1.4	0.5	18.9	0.3	1.6	23.5	1.0	19.2	920	1,500	670
19P	1.0	7	1.4	0.5	19.8	0.3	1.6	24.4	1.0	19.2	920	1,500	760
24P	1.0	7	1.4	0.5	22.7	0.3	1.8	27.7	1.1	19.2	920	1,500	950
30P	1.0	7	1.4	0.5	25.6	0.3	1.9	30.8	1.2	19.2	920	1,500	1,160
32P	1.0	7	1.4	0.5	26.1	0.3	1.9	31.3	1.2	19.2	920	1,500	1,210
37P	1.0	7	1.4	0.5	27.5	0.3	1.9	32.7	1.3	19.2	920	1,500	1,360
1P	1.5	7	1.7	0.6	6.2	0.2	1.1	9.5	0.6	12.8	910	1,500	110
2P	1.5	7	1.7	0.6	10.3	0.3	1.3	14.3	0.7	12.8	910	1,500	220
3P	1.5	7	1.7	0.6	11.1	0.3	1.3	15.1	0.8	12.8	910	1,500	260
4P	1.5	7	1.7	0.6	12.0	0.3	1.3	16.0	0.8	12.8	910	1,500	310
7P	1.5	7	1.7	0.6	15.5	0.3	1.5	19.9	0.9	12.8	910	1,500	480
8P	1.5	7	1.7	0.6	16.6	0.3	1.5	21.0	0.9	12.8	910	1,500	530
10P	1.5	7	1.7	0.6	19.3	0.3	1.6	23.9	1.0	12.8	910	1,500	650
12P	1.5	7	1.7	0.6	20.1	0.3	1.7	24.9	1.0	12.8	910	1,500	740
14P	1.5	7	1.7	0.6	21.0	0.3	1.7	25.8	1.1	12.8	910	1,500	820
16P	1.5	7	1.7	0.6	22.7	0.3	1.8	27.7	1.1	12.8	910	1,500	930
19P	1.5	7	1.7	0.6	23.9	0.3	1.8	28.9	1.2	12.8	910	1,500	1,060
24P	1.5	7	1.7	0.6	27.4	0.3	1.9	32.6	1.3	12.8	910	1,500	1,310
30P	1.5	7	1.7	0.6	30.9	0.4	2.1	36.5	1.4	12.8	910	1,500	1,620
32P	1.5	7	1.7	0.6	31.4	0.4	2.1	37.5	1.4	12.8	910	1,500	1,750
37P	1.5	7	1.7	0.6	33.2	0.4	2.2	39.5	1.5	12.8	910	1,500	1,980

250V TFOI, 250V TFOI(c)

No. of Triads	Conductor			Thickness of Insulation	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.					Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km
1T	0.75	7	1.2	0.5	5.1	0.2	1.0	8.2	0.5	26.0	1,030	1,500	90
2T	0.75	7	1.2	0.5	8.7	0.2	1.2	12.2	0.7	26.0	1,030	1,500	170
3T	0.75	7	1.2	0.5	9.3	0.2	1.2	12.8	0.7	26.0	1,030	1,500	200
4T	0.75	7	1.2	0.5	10.4	0.3	1.3	14.4	0.7	26.0	1,030	1,500	260
7T	0.75	7	1.2	0.5	13.9	0.3	1.4	18.1	0.8	26.0	1,030	1,500	400
8T	0.75	7	1.2	0.5	15.2	0.3	1.5	19.6	0.9	26.0	1,030	1,500	460
10T	0.75	7	1.2	0.5	17.4	0.3	1.5	21.8	1.0	26.0	1,030	1,500	540
12T	0.75	7	1.2	0.5	18.5	0.3	1.6	23.1	1.0	26.0	1,030	1,500	620
14T	0.75	7	1.2	0.5	19.4	0.3	1.6	24.0	1.0	26.0	1,030	1,500	690
16T	0.75	7	1.2	0.5	20.7	0.3	1.7	25.5	1.1	26.0	1,030	1,500	780
19T	0.75	7	1.2	0.5	22.4	0.3	1.7	27.2	1.1	26.0	1,030	1,500	890
24T	0.75	7	1.2	0.5	25.0	0.3	1.8	30.0	1.2	26.0	1,030	1,500	1,090
30T	0.75	7	1.2	0.5	27.9	0.3	2.0	33.3	1.3	26.0	1,030	1,500	1,340
32T	0.75	7	1.2	0.5	29.0	0.3	2.0	34.4	1.3	26.0	1,030	1,500	1,420
37T	0.75	7	1.2	0.5	30.5	0.4	2.1	36.1	1.4	26.0	1,030	1,500	1,610
1T	1.0	7	1.4	0.5	5.6	0.2	1.1	8.9	0.6	19.2	920	1,500	110
2T	1.0	7	1.4	0.5	9.6	0.2	1.2	13.1	0.7	19.2	920	1,500	200
3T	1.0	7	1.4	0.5	10.3	0.3	1.3	14.3	0.7	19.2	920	1,500	260
4T	1.0	7	1.4	0.5	11.5	0.3	1.3	15.5	0.8	19.2	920	1,500	310
7T	1.0	7	1.4	0.5	15.4	0.3	1.5	19.8	0.9	19.2	920	1,500	490
8T	1.0	7	1.4	0.5	16.8	0.3	1.5	21.2	0.9	19.2	920	1,500	550
10T	1.0	7	1.4	0.5	19.2	0.3	1.6	23.8	1.0	19.2	920	1,500	660
12T	1.0	7	1.4	0.5	20.4	0.3	1.7	25.2	1.1	19.2	920	1,500	760
14T	1.0	7	1.4	0.5	21.4	0.3	1.7	26.2	1.1	19.2	920	1,500	850
16T	1.0	7	1.4	0.5	22.8	0.3	1.8	27.8	1.1	19.2	920	1,500	960
19T	1.0	7	1.4	0.5	24.8	0.3	1.8	29.8	1.2	19.2	920	1,500	1,110
24T	1.0	7	1.4	0.5	27.7	0.3	2.0	33.1	1.3	19.2	920	1,500	1,370
30T	1.0	7	1.4	0.5	30.8	0.4	2.1	36.9	1.4	19.2	920	1,500	1,720
32T	1.0	7	1.4	0.5	32.0	0.4	2.1	38.1	1.4	19.2	920	1,500	1,810
37T	1.0	7	1.4	0.5	33.7	0.4	2.2	40.0	1.5	19.2	920	1,500	2,050
1T	1.5	7	1.7	0.6	6.6	0.2	1.1	9.9	0.6	12.8	910	1,500	140
2T	1.5	7	1.7	0.6	11.3	0.3	1.3	15.3	0.8	12.8	910	1,500	270
3T	1.5	7	1.7	0.6	12.2	0.3	1.3	16.2	0.8	12.8	910	1,500	330
4T	1.5	7	1.7	0.6	13.6	0.3	1.4	17.8	0.8	12.8	910	1,500	420
7T	1.5	7	1.7	0.6	18.2	0.3	1.6	22.8	1.0	12.8	910	1,500	670
8T	1.5	7	1.7	0.6	20.0	0.3	1.6	24.6	1.0	12.8	910	1,500	750
10T	1.5	7	1.7	0.6	22.8	0.3	1.8	27.8	1.1	12.8	910	1,500	910
12T	1.5	7	1.7	0.6	24.3	0.3	1.8	29.3	1.2	12.8	910	1,500	1,040
14T	1.5	7	1.7	0.6	25.4	0.3	1.9	30.6	1.2	12.8	910	1,500	1,180
16T	1.5	7	1.7	0.6	27.2	0.3	1.9	32.4	1.3	12.8	910	1,500	1,320
19T	1.5	7	1.7	0.6	29.5	0.3	2.0	34.9	1.3	12.8	910	1,500	1,540
24T	1.5	7	1.7	0.6	32.9	0.4	2.2	38.7	1.5	12.8	910	1,500	1,910
30T	1.5	7	1.7	0.6	36.7	0.4	2.3	43.2	1.6	12.8	910	1,500	2,390
32T	1.5	7	1.7	0.6	38.1	0.4	2.4	44.8	1.6	12.8	910	1,500	2,550
37T	1.5	7	1.7	0.6	40.1	0.4	2.5	47.0	1.7	12.8	910	1,500	2,890

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Flame retardant

Instrumentation Cable



Cable Designation

250V TFOI(i), 250V TFOI(i&c)

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2
	Insulation	T	- XLPE as per IEC 60092-351
	Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad
	Individual screen	(i)	- Screened by AL/PS tape with tinned copper drain wire - Each pair/triad is wrapped with polyester tape to prevent electrical contact with adjacent pairs/triads
	Cabling		- Screened pairs/triads shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable
	Collective screen	(c)	- Screened by AL/PS tape with tinned copper drain wire - A suitable tape may be applied on the collective screen - In case of 250V TFOI(i) cable, collective screen is omitted
	Inner covering	F	- Non-hygroscopic material
	Armor	O	- Braid of plain annealed copper wire - Coverage density : Min. 90%
	Sheath	I	- SHF1 as per IEC 60092-359 - Sheath color : Black
	Core identification		

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

250V TFOI(i), 250V TFOI(i&c)

No. of Pairs	Conductor			Thickness of Insulation	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.					Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km
1P	0.75	7	1.2	0.5	4.9	0.2	1.0	8.0	0.5	26.0	1,030	1,500	80
2P	0.75	7	1.2	0.5	8.6	0.2	1.2	12.1	0.7	26.0	1,030	1,500	160
3P	0.75	7	1.2	0.5	9.2	0.2	1.2	12.7	0.7	26.0	1,030	1,500	190
4P	0.75	7	1.2	0.5	10.3	0.3	1.3	14.3	0.7	26.0	1,030	1,500	250
7P	0.75	7	1.2	0.5	12.6	0.3	1.4	16.8	0.8	26.0	1,030	1,500	360
8P	0.75	7	1.2	0.5	14.0	0.3	1.4	18.2	0.8	26.0	1,030	1,500	410
10P	0.75	7	1.2	0.5	16.1	0.3	1.5	20.5	0.9	26.0	1,030	1,500	490
12P	0.75	7	1.2	0.5	16.9	0.3	1.5	21.3	0.9	26.0	1,030	1,500	550
14P	0.75	7	1.2	0.5	17.8	0.3	1.6	22.4	1.0	26.0	1,030	1,500	630
16P	0.75	7	1.2	0.5	19.2	0.3	1.6	23.8	1.0	26.0	1,030	1,500	700
19P	0.75	7	1.2	0.5	19.9	0.3	1.6	24.5	1.0	26.0	1,030	1,500	790
24P	0.75	7	1.2	0.5	23.4	0.3	1.8	28.4	1.2	26.0	1,030	1,500	1,000
30P	0.75	7	1.2	0.5	25.1	0.3	1.9	30.3	1.2	26.0	1,030	1,500	1,190
32P	0.75	7	1.2	0.5	25.5	0.3	1.9	30.7	1.2	26.0	1,030	1,500	1,250
37P	0.75	7	1.2	0.5	27.0	0.3	1.9	32.2	1.3	26.0	1,030	1,500	1,410
1P	1.0	7	1.4	0.5	5.3	0.2	1.0	8.4	0.6	19.2	920	1,500	90
2P	1.0	7	1.4	0.5	9.3	0.2	1.2	12.8	0.7	19.2	920	1,500	190
3P	1.0	7	1.4	0.5	10.0	0.2	1.2	13.5	0.7	19.2	920	1,500	230
4P	1.0	7	1.4	0.5	11.1	0.3	1.3	15.1	0.8	19.2	920	1,500	290
7P	1.0	7	1.4	0.5	13.7	0.3	1.4	17.9	0.8	19.2	920	1,500	430
8P	1.0	7	1.4	0.5	15.2	0.3	1.5	19.6	0.9	19.2	920	1,500	500
10P	1.0	7	1.4	0.5	17.5	0.3	1.5	21.9	1.0	19.2	920	1,500	590
12P	1.0	7	1.4	0.5	18.3	0.3	1.6	22.9	1.0	19.2	920	1,500	670
14P	1.0	7	1.4	0.5	19.3	0.3	1.6	23.9	1.0	19.2	920	1,500	760
16P	1.0	7	1.4	0.5	20.8	0.3	1.7	25.6	1.1	19.2	920	1,500	860
19P	1.0	7	1.4	0.5	21.6	0.3	1.7	26.4	1.1	19.2	920	1,500	970
24P	1.0	7	1.4	0.5	25.4	0.3	1.9	30.6	1.2	19.2	920	1,500	1,220
30P	1.0	7	1.4	0.5	27.2	0.3	1.9	32.4	1.3	19.2	920	1,500	1,450
32P	1.0	7	1.4	0.5	27.7	0.3	2.0	33.1	1.3	19.2	920	1,500	1,540
37P	1.0	7	1.4	0.5	29.2	0.3	2.0	34.6	1.3	19.2	920	1,500	1,740
1P	1.5	7	1.7	0.6	6.3	0.2	1.1	9.6	0.6	12.8	910	1,500	120
2P	1.5	7	1.7	0.6	11.1	0.3	1.3	15.1	0.8	12.8	910	1,500	250
3P	1.5	7	1.7	0.6	11.9	0.3	1.3	15.9	0.8	12.8	910	1,500	300
4P	1.5	7	1.7	0.6	13.2	0.3	1.4	17.4	0.8	12.8	910	1,500	370
7P	1.5	7	1.7	0.6	16.3	0.3	1.5	20.7	0.9	12.8	910	1,500	560
8P	1.5	7	1.7	0.6	18.1	0.3	1.6	22.7	1.0	12.8	910	1,500	650
10P	1.5	7	1.7	0.6	20.8	0.3	1.7	25.6	1.1	12.8	910	1,500	780
12P	1.5	7	1.7	0.6	21.8	0.3	1.7	26.6	1.1	12.8	910	1,500	880
14P	1.5	7	1.7	0.6	23.0	0.3	1.8	28.0	1.1	12.8	910	1,500	1,000
16P	1.5	7	1.7	0.6	24.8	0.3	1.8	29.8	1.2	12.8	910	1,500	1,120
19P	1.5	7	1.7	0.6	25.7	0.3	1.9	30.9	1.2	12.8	910	1,500	1,290
24P	1.5	7	1.7	0.6	30.3	0.4	2.1	35.9	1.4	12.8	910	1,500	1,630
30P	1.5	7	1.7	0.6	32.4	0.4	2.2	38.7	1.5	12.8	910	1,500	2,010
32P	1.5	7	1.7	0.6	33.0	0.4	2.2	39.3	1.5	12.8	910	1,500	2,110
37P	1.5	7	1.7	0.6	34.9	0.4	2.3	41.4	1.5	12.8	910	1,500	2,390

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Flame retardant

Instrumentation Cable

250V TFOI(i), 250V TFOI(i&c)

No. of Triads	Conductor			Thickness of Insulation	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.					Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km
1T	0.75	7	1.2	0.5	5.2	0.2	1.0	8.3	0.5	26.0	1,030	1,500	100
2T	0.75	7	1.2	0.5	9.2	0.2	1.2	12.7	0.7	26.0	1,030	1,500	190
3T	0.75	7	1.2	0.5	9.9	0.2	1.2	13.4	0.7	26.0	1,030	1,500	230
4T	0.75	7	1.2	0.5	11.1	0.3	1.3	15.1	0.8	26.0	1,030	1,500	300
7T	0.75	7	1.2	0.5	14.8	0.3	1.4	19.0	0.9	26.0	1,030	1,500	470
8T	0.75	7	1.2	0.5	16.2	0.3	1.5	20.6	0.9	26.0	1,030	1,500	530
10T	0.75	7	1.2	0.5	18.5	0.3	1.6	23.1	1.0	26.0	1,030	1,500	640
12T	0.75	7	1.2	0.5	19.7	0.3	1.6	24.3	1.0	26.0	1,030	1,500	730
14T	0.75	7	1.2	0.5	20.6	0.3	1.7	25.4	1.1	26.0	1,030	1,500	820
16T	0.75	7	1.2	0.5	22.0	0.3	1.7	26.8	1.1	26.0	1,030	1,500	920
19T	0.75	7	1.2	0.5	23.8	0.3	1.8	28.8	1.2	26.0	1,030	1,500	1,070
24T	0.75	7	1.2	0.5	26.6	0.3	1.9	31.8	1.3	26.0	1,030	1,500	1,310
30T	0.75	7	1.2	0.5	29.6	0.3	2.0	35.0	1.4	26.0	1,030	1,500	1,590
32T	0.75	7	1.2	0.5	30.8	0.4	2.1	36.9	1.4	26.0	1,030	1,500	1,750
37T	0.75	7	1.2	0.5	32.4	0.4	2.2	38.7	1.5	26.0	1,030	1,500	1,980
1T	1.0	7	1.4	0.5	5.7	0.2	1.1	9.0	0.6	19.2	920	1,500	120
2T	1.0	7	1.4	0.5	10.1	0.3	1.3	14.1	0.7	19.2	920	1,500	240
3T	1.0	7	1.4	0.5	10.9	0.3	1.3	14.9	0.7	19.2	920	1,500	290
4T	1.0	7	1.4	0.5	12.1	0.3	1.3	16.1	0.8	19.2	920	1,500	360
7T	1.0	7	1.4	0.5	16.2	0.3	1.5	20.6	0.9	19.2	920	1,500	570
8T	1.0	7	1.4	0.5	17.8	0.3	1.6	22.4	1.0	19.2	920	1,500	660
10T	1.0	7	1.4	0.5	20.3	0.3	1.7	25.1	1.1	19.2	920	1,500	780
12T	1.0	7	1.4	0.5	21.6	0.3	1.7	26.4	1.1	19.2	920	1,500	890
14T	1.0	7	1.4	0.5	22.6	0.3	1.8	27.6	1.1	19.2	920	1,500	1,010
16T	1.0	7	1.4	0.5	24.1	0.3	1.8	29.1	1.2	19.2	920	1,500	1,130
19T	1.0	7	1.4	0.5	26.2	0.3	1.9	31.4	1.2	19.2	920	1,500	1,320
24T	1.0	7	1.4	0.5	29.2	0.3	2.0	34.6	1.3	19.2	920	1,500	1,620
30T	1.0	7	1.4	0.5	32.6	0.4	2.2	38.9	1.5	19.2	920	1,500	2,050
32T	1.0	7	1.4	0.5	33.8	0.4	2.2	40.1	1.5	19.2	920	1,500	2,170
37T	1.0	7	1.4	0.5	35.6	0.4	2.3	42.1	1.6	19.2	920	1,500	2,450
1T	1.5	7	1.7	0.6	6.7	0.2	1.1	10.0	0.6	12.8	910	1,500	150
2T	1.5	7	1.7	0.6	11.9	0.3	1.3	15.9	0.8	12.8	910	1,500	300
3T	1.5	7	1.7	0.6	12.8	0.3	1.4	17.0	0.8	12.8	910	1,500	380
4T	1.5	7	1.7	0.6	14.3	0.3	1.4	18.5	0.9	12.8	910	1,500	470
7T	1.5	7	1.7	0.6	19.1	0.3	1.6	23.7	1.0	12.8	910	1,500	750
8T	1.5	7	1.7	0.6	20.9	0.3	1.7	25.7	1.1	12.8	910	1,500	860
10T	1.5	7	1.7	0.6	23.9	0.3	1.8	28.9	1.2	12.8	910	1,500	1,030
12T	1.5	7	1.7	0.6	25.4	0.3	1.9	30.6	1.2	12.8	910	1,500	1,200
14T	1.5	7	1.7	0.6	26.6	0.3	1.9	31.8	1.3	12.8	910	1,500	1,340
16T	1.5	7	1.7	0.6	28.5	0.3	2.0	33.9	1.3	12.8	910	1,500	1,520
19T	1.5	7	1.7	0.6	30.9	0.4	2.1	36.5	1.4	12.8	910	1,500	1,770
24T	1.5	7	1.7	0.6	34.5	0.4	2.2	40.8	1.5	12.8	910	1,500	2,240
30T	1.5	7	1.7	0.6	38.4	0.4	2.4	45.1	1.7	12.8	910	1,500	2,740
32T	1.5	7	1.7	0.6	39.9	0.4	2.5	46.8	1.7	12.8	910	1,500	2,930
37T	1.5	7	1.7	0.6	42.0	0.4	2.5	48.9	1.8	12.8	910	1,500	3,300



Cable Designation

250V TIOI, 250V TICI, 250V TIOI(c), 250V TICI(c)

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2
	Insulation	T	- XLPE as per IEC 60092-351
	Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad
	Cabling		- Twisted pairs/triads shall be cabled
			- Flame retardant & non-hygroscopic fillers may be used
			- Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable
	Collective screen	(c)	- Screened by AL/PS tape with tinned copper drain wire - A suitable tape may be applied on the collective screen - In case of 250V TIOI cable, collective screen is omitted
	Inner sheath	I	- SHF1 as per IEC 60092-359
	Armor	O (C)	- Braid of plain copper wire(O) or galvanized steel wire(C) - Coverage density : Min. 90%
	Outer sheath	I	- SHF1 as per IEC 60092-359 - Outer sheath color : Black
Core identification		- Colored insulation plus Arabic number printing on the insulation • Pair : White, Black • Triad : White, Red, Black	

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

Flame retardant

Instrumentation Cable

250V TIOI, 250V TICI, 250V TIOI(c), 250V TICI(c)

No. of Pairs	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km	
1P	0.75	7	1.2	0.5	1.0	6.9	0.3	0.8	10.4	0.6	26.0	1,030	1,500	160
2P	0.75	7	1.2	0.5	1.1	10.1	0.3	0.9	13.6	0.7	26.0	1,030	1,500	240
3P	0.75	7	1.2	0.5	1.1	10.7	0.3	0.9	14.2	0.7	26.0	1,030	1,500	270
4P	0.75	7	1.2	0.5	1.2	11.6	0.3	0.9	15.1	0.8	26.0	1,030	1,500	310
7P	0.75	7	1.2	0.5	1.3	14.4	0.3	1.0	17.9	0.8	26.0	1,030	1,500	430
8P	0.75	7	1.2	0.5	1.3	15.3	0.3	1.0	18.8	0.9	26.0	1,030	1,500	470
10P	0.75	7	1.2	0.5	1.4	17.5	0.3	1.1	21.2	0.9	26.0	1,030	1,500	560
12P	0.75	7	1.2	0.5	1.4	18.2	0.3	1.1	21.9	1.0	26.0	1,030	1,500	610
14P	0.75	7	1.2	0.5	1.4	18.8	0.3	1.1	22.5	1.0	26.0	1,030	1,500	660
16P	0.75	7	1.2	0.5	1.5	20.3	0.3	1.1	24.0	1.0	26.0	1,030	1,500	740
19P	0.75	7	1.2	0.5	1.5	21.2	0.3	1.2	25.1	1.1	26.0	1,030	1,500	830
24P	0.75	7	1.2	0.5	1.6	24.1	0.3	1.2	28.0	1.1	26.0	1,030	1,500	1,000
30P	0.75	7	1.2	0.5	1.7	26.9	0.3	1.3	31.0	1.2	26.0	1,030	1,500	1,210
32P	0.75	7	1.2	0.5	1.7	27.3	0.3	1.3	31.4	1.2	26.0	1,030	1,500	1,260
37P	0.75	7	1.2	0.5	1.8	28.9	0.3	1.4	33.2	1.3	26.0	1,030	1,500	1,420
1P	1.0	7	1.4	0.5	1.0	7.3	0.3	0.8	10.8	0.6	19.2	920	1,500	170
2P	1.0	7	1.4	0.5	1.1	10.8	0.3	0.9	14.3	0.7	19.2	920	1,500	270
3P	1.0	7	1.4	0.5	1.2	11.7	0.3	0.9	15.2	0.8	19.2	920	1,500	310
4P	1.0	7	1.4	0.5	1.2	12.4	0.3	0.9	15.9	0.8	19.2	920	1,500	350
7P	1.0	7	1.4	0.5	1.3	15.5	0.3	1.0	19.0	0.9	19.2	920	1,500	490
8P	1.0	7	1.4	0.5	1.3	16.4	0.3	1.0	19.9	0.9	19.2	920	1,500	540
10P	1.0	7	1.4	0.5	1.4	18.8	0.3	1.1	22.5	1.0	19.2	920	1,500	650
12P	1.0	7	1.4	0.5	1.5	19.7	0.3	1.1	23.4	1.0	19.2	920	1,500	720
14P	1.0	7	1.4	0.5	1.5	20.4	0.3	1.1	24.1	1.0	19.2	920	1,500	790
16P	1.0	7	1.4	0.5	1.5	21.9	0.3	1.2	25.8	1.1	19.2	920	1,500	880
19P	1.0	7	1.4	0.5	1.6	23.0	0.3	1.2	26.9	1.1	19.2	920	1,500	990
24P	1.0	7	1.4	0.5	1.7	26.1	0.3	1.3	30.2	1.2	19.2	920	1,500	1,210
30P	1.0	7	1.4	0.5	1.8	29.2	0.3	1.4	33.5	1.3	19.2	920	1,500	1,460
32P	1.0	7	1.4	0.5	1.8	29.7	0.3	1.4	34.0	1.3	19.2	920	1,500	1,520
37P	1.0	7	1.4	0.5	1.9	31.3	0.4	1.4	36.0	1.4	19.2	920	1,500	1,770
1P	1.5	7	1.7	0.6	1.0	8.3	0.3	0.8	11.8	0.7	12.8	910	1,500	200
2P	1.5	7	1.7	0.6	1.2	12.7	0.3	1.0	16.2	0.8	12.8	910	1,500	330
3P	1.5	7	1.7	0.6	1.2	13.5	0.3	1.0	17.0	0.8	12.8	910	1,500	380
4P	1.5	7	1.7	0.6	1.3	14.6	0.3	1.0	18.1	0.8	12.8	910	1,500	450
7P	1.5	7	1.7	0.6	1.4	18.3	0.3	1.1	22.0	1.0	12.8	910	1,500	650
8P	1.5	7	1.7	0.6	1.5	19.6	0.3	1.1	23.3	1.0	12.8	910	1,500	720
10P	1.5	7	1.7	0.6	1.6	22.5	0.3	1.2	26.4	1.1	12.8	910	1,500	870
12P	1.5	7	1.7	0.6	1.6	23.3	0.3	1.2	27.2	1.1	12.8	910	1,500	960
14P	1.5	7	1.7	0.6	1.6	24.2	0.3	1.2	28.1	1.1	12.8	910	1,500	1,050
16P	1.5	7	1.7	0.6	1.7	26.1	0.3	1.3	30.2	1.2	12.8	910	1,500	1,190
19P	1.5	7	1.7	0.6	1.7	27.3	0.3	1.3	31.4	1.2	12.8	910	1,500	1,330
24P	1.5	7	1.7	0.6	1.9	31.2	0.4	1.4	35.9	1.4	12.8	910	1,500	1,730
30P	1.5	7	1.7	0.6	2.0	34.9	0.4	1.5	39.8	1.5	12.8	910	1,500	2,080
32P	1.5	7	1.7	0.6	2.0	35.4	0.4	1.5	40.3	1.5	12.8	910	1,500	2,170
37P	1.5	7	1.7	0.6	2.1	37.4	0.4	1.6	42.5	1.6	12.8	910	1,500	2,440

250V TIOI, 250V TICI, 250V TIOI(c), 250V TICI(c)

No. of Triads	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	sqmm	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km	
1T	0.75	7	1.2	0.5	1.0	7.2	0.3	0.8	10.7	0.6	26.0	1,030	1,500	180
2T	0.75	7	1.2	0.5	1.1	10.9	0.3	0.9	14.4	0.7	26.0	1,030	1,500	280
3T	0.75	7	1.2	0.5	1.2	11.7	0.3	0.9	15.2	0.8	26.0	1,030	1,500	320
4T	0.75	7	1.2	0.5	1.2	12.8	0.3	1.0	16.3	0.8	26.0	1,030	1,500	380
7T	0.75	7	1.2	0.5	1.3	16.5	0.3	1.0	20.0	0.9	26.0	1,030	1,500	550
8T	0.75	7	1.2	0.5	1.4	18.0	0.3	1.1	21.7	1.0	26.0	1,030	1,500	630
10T	0.75	7	1.2	0.5	1.5	20.4	0.3	1.1	24.1	1.0	26.0	1,030	1,500	730
12T	0.75	7	1.2	0.5	1.5	21.5	0.3	1.2	25.4	1.1	26.0	1,030	1,500	830
14T	0.75	7	1.2	0.5	1.6	22.6	0.3	1.2	26.5	1.1	26.0	1,030	1,500	920
16T	0.75	7	1.2	0.5	1.6	23.9	0.3	1.2	27.8	1.1	26.0	1,030	1,500	1,010
19T	0.75	7	1.2	0.5	1.7	25.8	0.3	1.3	29.9	1.2	26.0	1,030	1,500	1,160
24T	0.75	7	1.2	0.5	1.8	28.6	0.3	1.3	32.7	1.3	26.0	1,030	1,500	1,390
30T	0.75	7	1.2	0.5	1.9	31.7	0.4	1.4	36.4	1.4	26.0	1,030	1,500	1,750
32T	0.75	7	1.2	0.5	2.0	33.0	0.4	1.5	37.9	1.4	26.0	1,030	1,500	1,870
37T	0.75	7	1.2	0.5	2.0	34.5	0.4	1.5	39.4	1.5	26.0	1,030	1,500	2,060
1T	1.0	7	1.4	0.5	1.0	7.7	0.3	0.8	11.2	0.6	19.2	920	1,500	200
2T	1.0	7	1.4	0.5	1.2	12.0	0.3	0.9	15.5	0.8	19.2	920	1,500	320
3T	1.0	7	1.4	0.5	1.2	12.7	0.3	1.0	16.2	0.8	19.2	920	1,500	370
4T	1.0	7	1.4	0.5	1.3	14.1	0.3	1.0	17.6	0.8	19.2	920	1,500	440
7T	1.0	7	1.4	0.5	1.4	18.2	0.3	1.1	21.9	1.0	19.2	920	1,500	660
8T	1.0	7	1.4	0.5	1.5	19.8	0.3	1.1	23.5	1.0	19.2	920	1,500	740
10T	1.0	7	1.4	0.5	1.6	22.4	0.3	1.2	26.3	1.1	19.2	920	1,500	890
12T	1.0	7	1.4	0.5	1.6	23.6	0.3	1.2	27.5	1.1	19.2	920	1,500	990
14T	1.0	7	1.4	0.5	1.6	24.6	0.3	1.2	28.5	1.2	19.2	920	1,500	1,090
16T	1.0	7	1.4	0.5	1.7	26.2	0.3	1.3	30.3	1.2	19.2	920	1,500	1,220
19T	1.0	7	1.4	0.5	1.8	28.4	0.3	1.3	32.5	1.3	19.2	920	1,500	1,400
24T	1.0	7	1.4	0.5	1.9	31.5	0.4	1.4	36.2	1.4	19.2	920	1,500	1,770
30T	1.0	7	1.4	0.5	2.0	34.8	0.4	1.5	39.7	1.5	19.2	920	1,500	2,130
32T	1.0	7	1.4	0.5	2.1	36.2	0.4	1.5	41.1	1.5	19.2	920	1,500	2,260
37T	1.0	7	1.4	0.5	2.1	37.9	0.4	1.6	43.0	1.6	19.2	920	1,500	2,520
1T	1.5	7	1.7	0.6	1.1	8.9	0.3	0.9	12.4	0.7	12.8	910	1,500	240
2T	1.5	7	1.7	0.6	1.2	13.7	0.3	1.0	17.2	0.8	12.8	910	1,500	390
3T	1.5	7	1.7	0.6	1.3	14.8	0.3	1.0	18.3	0.8	12.8	910	1,500	470
4T	1.5	7	1.7	0.6	1.3	16.2	0.3	1.0	19.7	0.9	12.8	910	1,500	560
7T	1.5	7	1.7	0.6	1.5	21.2	0.3	1.2	25.1	1.1	12.8	910	1,500	870
8T	1.5	7	1.7	0.6	1.6	23.2	0.3	1.2	27.1	1.1	12.8	910	1,500	990
10T	1.5	7	1.7	0.6	1.7	26.2	0.3	1.3	30.3	1.2	12.8	910	1,500	1,170
12T	1.5	7	1.7	0.6	1.8	27.9	0.3	1.3	32.0	1.3	12.8	910	1,500	1,330
14T	1.5	7	1.7	0.6	1.8	29.0	0.3	1.4	33.3	1.3	12.8	910	1,500	1,490
16T	1.5	7	1.7	0.6	1.9	31.0	0.4	1.4	35.7	1.4	12.8	910	1,500	1,740
19T	1.5	7	1.7	0.6	2.0	33.5	0.4	1.5	38.4	1.5	12.8	910	1,500	2,000
24T	1.5	7	1.7	0.6	2.1	37.1	0.4	1.6	42.2	1.6	12.8	910	1,500	2,420
30T	1.5	7	1.7	0.6	2.3	41.3	0.4	1.7	46.6	1.7	12.8	910	1,500	2,930
32T	1.5	7	1.7	0.6	2.3	42.7	0.4	1.7	48.0	1.7	12.8	910	1,500	3,090
37T	1.5	7	1.7	0.6	2.4	44.9	0.4	1.8	50.4	1.8	12.8	910	1,500	3,480

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Flame retardant

Instrumentation Cable



Cable Designation

250V TIOI(i), 250V TICl(i), 250V TIOI(i&c), 250V TICl(i&c)

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2
	Insulation	T	- XLPE as per IEC 60092-351
	Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad
	Individual screen	(i)	- Screened by AL/PS tape with tinned copper drain wire - Each pair/triad is wrapped with polyester tape to prevent electrical contact with adjacent pairs/triads
	Cabling		- Screened pairs/triads shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable
	Collective screen	(c)	- Screened by AL/PS tape with tinned copper drain wire - A suitable tape may be applied on the collective screen - In case of 250V TIOI(i) cable, collective screen is omitted
	Inner sheath	I	- SHF1 as per IEC 60092-359
	Armor	O (C)	- Braid of plain copper wire(O) or galvanized steel wire(C) - Coverage density : Min. 90%
	Outer sheath	I	- SHF1 as per IEC 60092-359 - Outer sheath color : Black
	Core identification		- Colored insulation plus Arabic number printing on the insulation • Pair : White, Black • Triad : White, Red, Black

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

250V TIOI(i), 250V TICl(i), 250V TIOI(i&c), 250 TICl(i&c)

No. of Pairs	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km	
1P	0.75	7	1.2	0.5	1.0	6.9	0.3	0.8	10.4	0.6	26.0	1,030	1,500	160
2P	0.75	7	1.2	0.5	1.1	10.8	0.3	0.9	14.3	0.7	26.0	1,030	1,500	270
3P	0.75	7	1.2	0.5	1.2	11.6	0.3	0.9	15.1	0.8	26.0	1,030	1,500	310
4P	0.75	7	1.2	0.5	1.2	12.7	0.3	1.0	16.2	0.8	26.0	1,030	1,500	360
7P	0.75	7	1.2	0.5	1.3	15.2	0.3	1.0	18.7	0.9	26.0	1,030	1,500	500
8P	0.75	7	1.2	0.5	1.4	16.8	0.3	1.1	20.5	0.9	26.0	1,030	1,500	570
10P	0.75	7	1.2	0.5	1.4	18.9	0.3	1.1	22.6	1.0	26.0	1,030	1,500	660
12P	0.75	7	1.2	0.5	1.5	19.9	0.3	1.1	23.6	1.0	26.0	1,030	1,500	740
14P	0.75	7	1.2	0.5	1.5	20.8	0.3	1.2	24.7	1.0	26.0	1,030	1,500	830
16P	0.75	7	1.2	0.5	1.6	22.4	0.3	1.2	26.3	1.1	26.0	1,030	1,500	930
19P	0.75	7	1.2	0.5	1.6	23.1	0.3	1.2	27.0	1.1	26.0	1,030	1,500	1,020
24P	0.75	7	1.2	0.5	1.7	26.8	0.3	1.3	30.9	1.2	26.0	1,030	1,500	1,260
30P	0.75	7	1.2	0.5	1.8	28.7	0.3	1.4	33.0	1.3	26.0	1,030	1,500	1,490
32P	0.75	7	1.2	0.5	1.8	29.1	0.3	1.4	33.4	1.3	26.0	1,030	1,500	1,550
37P	0.75	7	1.2	0.5	1.9	30.8	0.4	1.4	35.5	1.4	26.0	1,030	1,500	1,810
1P	1.0	7	1.4	0.5	1.0	7.3	0.3	0.8	10.8	0.6	19.2	920	1,500	170
2P	1.0	7	1.4	0.5	1.2	11.7	0.3	0.9	15.2	0.8	19.2	920	1,500	310
3P	1.0	7	1.4	0.5	1.2	12.4	0.3	0.9	15.9	0.8	19.2	920	1,500	350
4P	1.0	7	1.4	0.5	1.2	13.5	0.3	1.0	17.0	0.8	19.2	920	1,500	410
7P	1.0	7	1.4	0.5	1.3	16.3	0.3	1.0	19.8	0.9	19.2	920	1,500	570
8P	1.0	7	1.4	0.5	1.4	18.0	0.3	1.1	21.7	1.0	19.2	920	1,500	660
10P	1.0	7	1.4	0.5	1.5	20.5	0.3	1.1	24.2	1.0	19.2	920	1,500	780
12P	1.0	7	1.4	0.5	1.5	21.3	0.3	1.2	25.2	1.1	19.2	920	1,500	880
14P	1.0	7	1.4	0.5	1.6	22.5	0.3	1.2	26.4	1.1	19.2	920	1,500	980
16P	1.0	7	1.4	0.5	1.6	24.0	0.3	1.2	27.9	1.1	19.2	920	1,500	1,080
19P	1.0	7	1.4	0.5	1.7	25.0	0.3	1.3	29.1	1.2	19.2	920	1,500	1,230
24P	1.0	7	1.4	0.5	1.8	29.0	0.3	1.4	33.3	1.3	19.2	920	1,500	1,530
30P	1.0	7	1.4	0.5	1.9	31.0	0.4	1.4	35.7	1.4	19.2	920	1,500	1,870
32P	1.0	7	1.4	0.5	1.9	31.5	0.4	1.4	36.2	1.4	19.2	920	1,500	1,950
37P	1.0	7	1.4	0.5	2.0	33.2	0.4	1.5	38.1	1.4	19.2	920	1,500	2,190
1P	1.5	7	1.7	0.6	1.0	8.3	0.3	0.8	11.8	0.7	12.8	910	1,500	200
2P	1.5	7	1.7	0.6	1.2	13.5	0.3	1.0	17.0	0.8	12.8	910	1,500	370
3P	1.5	7	1.7	0.6	1.3	14.5	0.3	1.0	18.0	0.8	12.8	910	1,500	440
4P	1.5	7	1.7	0.6	1.3	15.8	0.3	1.0	19.3	0.9	12.8	910	1,500	510
7P	1.5	7	1.7	0.6	1.4	19.1	0.3	1.1	22.8	1.0	12.8	910	1,500	740
8P	1.5	7	1.7	0.6	1.5	21.1	0.3	1.2	25.0	1.1	12.8	910	1,500	850
10P	1.5	7	1.7	0.6	1.6	24.0	0.3	1.2	27.9	1.1	12.8	910	1,500	1,010
12P	1.5	7	1.7	0.6	1.7	25.2	0.3	1.3	29.3	1.2	12.8	910	1,500	1,150
14P	1.5	7	1.7	0.6	1.7	26.4	0.3	1.3	30.5	1.2	12.8	910	1,500	1,270
16P	1.5	7	1.7	0.6	1.8	28.4	0.3	1.3	32.5	1.3	12.8	910	1,500	1,420
19P	1.5	7	1.7	0.6	1.8	29.3	0.3	1.4	33.6	1.3	12.8	910	1,500	1,590
24P	1.5	7	1.7	0.6	2.0	34.3	0.4	1.5	39.2	1.5	12.8	910	1,500	2,080
30P	1.5	7	1.7	0.6	2.1	36.6	0.4	1.6	41.7	1.6	12.8	910	1,500	2,460
32P	1.5	7	1.7	0.6	2.1	37.2	0.4	1.6	42.3	1.6	12.8	910	1,500	2,560
37P	1.5	7	1.7	0.6	2.2	39.3	0.4	1.6	44.4	1.6	12.8	910	1,500	2,870

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Flame retardant

Instrumentation Cable

250V TIOI(i), 250V TICI(i), 250V TIOI(i&c), 250 TICI(i&c)

No. of Triads	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km	
1T	0.75	7	1.2	0.5	1.0	7.2	0.3	0.8	10.7	0.6	26.0	1,030	1,500	180
2T	0.75	7	1.2	0.5	1.2	11.6	0.3	0.9	15.1	0.8	26.0	1,030	1,500	310
3T	0.75	7	1.2	0.5	1.2	12.3	0.3	0.9	15.8	0.8	26.0	1,030	1,500	360
4T	0.75	7	1.2	0.5	1.2	13.5	0.3	1.0	17.0	0.8	26.0	1,030	1,500	420
7T	0.75	7	1.2	0.5	1.4	17.6	0.3	1.1	21.3	0.9	26.0	1,030	1,500	640
8T	0.75	7	1.2	0.5	1.4	19.0	0.3	1.1	22.7	1.0	26.0	1,030	1,500	710
10T	0.75	7	1.2	0.5	1.5	21.5	0.3	1.2	25.4	1.1	26.0	1,030	1,500	840
12T	0.75	7	1.2	0.5	1.6	22.9	0.3	1.2	26.8	1.1	26.0	1,030	1,500	960
14T	0.75	7	1.2	0.5	1.6	23.8	0.3	1.2	27.7	1.1	26.0	1,030	1,500	1,050
16T	0.75	7	1.2	0.5	1.7	25.4	0.3	1.3	29.5	1.2	26.0	1,030	1,500	1,180
19T	0.75	7	1.2	0.5	1.7	27.2	0.3	1.3	31.3	1.2	26.0	1,030	1,500	1,340
24T	0.75	7	1.2	0.5	1.9	30.4	0.4	1.4	35.1	1.4	26.0	1,030	1,500	1,710
30T	0.75	7	1.2	0.5	2.0	33.6	0.4	1.5	38.5	1.5	26.0	1,030	1,500	2,050
32T	0.75	7	1.2	0.5	2.0	34.8	0.4	1.5	39.7	1.5	26.0	1,030	1,500	2,160
37T	0.75	7	1.2	0.5	2.1	36.6	0.4	1.6	41.7	1.6	26.0	1,030	1,500	2,430
1T	1.0	7	1.4	0.5	1.0	7.7	0.3	0.8	11.2	0.6	19.2	920	1,500	200
2T	1.0	7	1.4	0.5	1.2	12.5	0.3	0.9	16.0	0.8	19.2	920	1,500	350
3T	1.0	7	1.4	0.5	1.2	13.3	0.3	1.0	16.8	0.8	19.2	920	1,500	410
4T	1.0	7	1.4	0.5	1.3	14.7	0.3	1.0	18.2	0.8	19.2	920	1,500	490
7T	1.0	7	1.4	0.5	1.4	19.0	0.3	1.1	22.7	1.0	19.2	920	1,500	750
8T	1.0	7	1.4	0.5	1.5	20.8	0.3	1.2	24.7	1.0	19.2	920	1,500	860
10T	1.0	7	1.4	0.5	1.6	23.5	0.3	1.2	27.4	1.1	19.2	920	1,500	1,000
12T	1.0	7	1.4	0.5	1.7	25.0	0.3	1.3	29.1	1.2	19.2	920	1,500	1,160
14T	1.0	7	1.4	0.5	1.7	26.0	0.3	1.3	30.1	1.2	19.2	920	1,500	1,270
16T	1.0	7	1.4	0.5	1.8	27.7	0.3	1.3	31.8	1.3	19.2	920	1,500	1,420
19T	1.0	7	1.4	0.5	1.8	29.8	0.3	1.4	34.1	1.3	19.2	920	1,500	1,630
24T	1.0	7	1.4	0.5	2.0	33.2	0.4	1.5	38.1	1.4	19.2	920	1,500	2,070
30T	1.0	7	1.4	0.5	2.1	36.8	0.4	1.6	41.9	1.6	19.2	920	1,500	2,500
32T	1.0	7	1.4	0.5	2.1	38.0	0.4	1.6	43.1	1.6	19.2	920	1,500	2,630
37T	1.0	7	1.4	0.5	2.2	40.0	0.4	1.6	45.1	1.7	19.2	920	1,500	2,940
1T	1.5	7	1.7	0.6	1.1	8.9	0.3	0.9	12.4	0.7	12.8	910	1,500	240
2T	1.5	7	1.7	0.6	1.3	14.5	0.3	1.0	18.0	0.8	12.8	910	1,500	430
3T	1.5	7	1.7	0.6	1.3	15.4	0.3	1.0	18.9	0.9	12.8	910	1,500	520
4T	1.5	7	1.7	0.6	1.4	17.1	0.3	1.1	20.8	0.9	12.8	910	1,500	630
7T	1.5	7	1.7	0.6	1.6	22.3	0.3	1.2	26.2	1.1	12.8	910	1,500	980
8T	1.5	7	1.7	0.6	1.6	24.1	0.3	1.2	28.0	1.1	12.8	910	1,500	1,090
10T	1.5	7	1.7	0.6	1.7	27.3	0.3	1.3	31.4	1.2	12.8	910	1,500	1,300
12T	1.5	7	1.7	0.6	1.8	29.0	0.3	1.4	33.3	1.3	12.8	910	1,500	1,500
14T	1.5	7	1.7	0.6	1.9	30.4	0.4	1.4	35.1	1.4	12.8	910	1,500	1,750
16T	1.5	7	1.7	0.6	1.9	32.3	0.4	1.5	37.2	1.4	12.8	910	1,500	1,950
19T	1.5	7	1.7	0.6	2.0	34.9	0.4	1.5	39.8	1.5	12.8	910	1,500	2,230
24T	1.5	7	1.7	0.6	2.2	38.9	0.4	1.6	44.0	1.6	12.8	910	1,500	2,730
30T	1.5	7	1.7	0.6	2.3	43.0	0.4	1.7	48.3	1.7	12.8	910	1,500	3,290
32T	1.5	7	1.7	0.6	2.4	44.7	0.4	1.8	50.2	1.8	12.8	910	1,500	3,520
37T	1.5	7	1.7	0.6	2.5	47.0	0.4	1.8	52.5	1.9	12.8	910	1,500	3,930

Fire resistance

Instrumentation Cable

E-Route®
IEC 60092-350, 353, 354, 376



Cable Designation

250V BI, 250V BI(c)

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Fire resistance : IEC 60331-21(90min)
IEC 60331-1,-2(120min)
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or
IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2
	Fire resisting layer	B	- Mica/glass tape
	Insulation		- XLPE as per IEC 60092-351
	Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad - Twisted pairs/triads shall be cabled
	Cabling		- Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable
	Collective screen	(c)	- Screened by AL/PS tape with tinned copper drain wire - A suitable tape may be applied on the collective screen - In case of 250V BI cable, collective screen is omitted
	Sheath	I	- SHF1 as per IEC 60092-359 - Sheath color : Black
Core identification		- Colored insulation plus Arabic number printing on the insulation • Pair : White, Black • Triad : White, Red, Black	

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Fire resistance

Instrumentation Cable

250V BI, 250V BI(c)

No. of Pairs	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km
1P	0.75	7	1.2	0.5	1.0	8.3	0.5	26.0	1,030	1,500	80
2P	0.75	7	1.2	0.5	1.2	12.8	0.7	26.0	1,030	1,500	150
3P	0.75	7	1.2	0.5	1.2	13.6	0.7	26.0	1,030	1,500	180
4P	0.75	7	1.2	0.5	1.3	14.7	0.7	26.0	1,030	1,500	220
7P	0.75	7	1.2	0.5	1.4	18.4	0.9	26.0	1,030	1,500	350
8P	0.75	7	1.2	0.5	1.5	19.7	0.9	26.0	1,030	1,500	400
10P	0.75	7	1.2	0.5	1.6	22.6	1.0	26.0	1,030	1,500	480
12P	0.75	7	1.2	0.5	1.6	23.4	1.0	26.0	1,030	1,500	540
14P	0.75	7	1.2	0.5	1.6	24.3	1.0	26.0	1,030	1,500	610
16P	0.75	7	1.2	0.5	1.7	26.2	1.1	26.0	1,030	1,500	690
19P	0.75	7	1.2	0.5	1.8	27.6	1.1	26.0	1,030	1,500	800
24P	0.75	7	1.2	0.5	1.9	31.3	1.2	26.0	1,030	1,500	1,000
30P	0.75	7	1.2	0.5	2.0	35.0	1.4	26.0	1,030	1,500	1,230
32P	0.75	7	1.2	0.5	2.1	35.7	1.4	26.0	1,030	1,500	1,300
37P	0.75	7	1.2	0.5	2.1	37.5	1.4	26.0	1,030	1,500	1,470
1P	1.0	7	1.4	0.5	1.1	8.9	0.6	19.2	920	1,500	90
2P	1.0	7	1.4	0.5	1.2	13.4	0.7	19.2	920	1,500	170
3P	1.0	7	1.4	0.5	1.3	14.6	0.7	19.2	920	1,500	220
4P	1.0	7	1.4	0.5	1.3	15.5	0.8	19.2	920	1,500	260
7P	1.0	7	1.4	0.5	1.5	19.6	0.9	19.2	920	1,500	410
8P	1.0	7	1.4	0.5	1.5	20.9	0.9	19.2	920	1,500	460
10P	1.0	7	1.4	0.5	1.6	23.9	1.0	19.2	920	1,500	560
12P	1.0	7	1.4	0.5	1.7	25.0	1.1	19.2	920	1,500	650
14P	1.0	7	1.4	0.5	1.7	25.9	1.1	19.2	920	1,500	730
16P	1.0	7	1.4	0.5	1.8	28.0	1.1	19.2	920	1,500	830
19P	1.0	7	1.4	0.5	1.8	29.2	1.2	19.2	920	1,500	940
24P	1.0	7	1.4	0.5	2.0	33.3	1.3	19.2	920	1,500	1,190
30P	1.0	7	1.4	0.5	2.1	37.3	1.4	19.2	920	1,500	1,470
32P	1.0	7	1.4	0.5	2.1	37.9	1.4	19.2	920	1,500	1,540
37P	1.0	7	1.4	0.5	2.2	39.9	1.5	19.2	920	1,500	1,760
1P	1.5	7	1.7	0.6	1.1	9.9	0.6	12.8	910	1,500	110
2P	1.5	7	1.7	0.6	1.3	15.3	0.8	12.8	910	1,500	220
3P	1.5	7	1.7	0.6	1.3	16.4	0.8	12.8	910	1,500	270
4P	1.5	7	1.7	0.6	1.4	17.7	0.8	12.8	910	1,500	340
7P	1.5	7	1.7	0.6	1.6	22.4	1.0	12.8	910	1,500	540
8P	1.5	7	1.7	0.6	1.6	23.9	1.0	12.8	910	1,500	610
10P	1.5	7	1.7	0.6	1.7	27.3	1.1	12.8	910	1,500	740
12P	1.5	7	1.7	0.6	1.8	28.6	1.2	12.8	910	1,500	860
14P	1.5	7	1.7	0.6	1.8	29.7	1.2	12.8	910	1,500	960
16P	1.5	7	1.7	0.6	1.9	32.0	1.3	12.8	910	1,500	1,100
19P	1.5	7	1.7	0.6	2.0	33.7	1.3	12.8	910	1,500	1,270
24P	1.5	7	1.7	0.6	2.2	38.4	1.5	12.8	910	1,500	1,610
30P	1.5	7	1.7	0.6	2.3	42.9	1.6	12.8	910	1,500	1,980
32P	1.5	7	1.7	0.6	2.4	43.8	1.6	12.8	910	1,500	2,100
37P	1.5	7	1.7	0.6	2.4	46.0	1.7	12.8	910	1,500	2,370

250V BI, 250V BI(c)

No. of Triads	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	±mm	Ω/km	MΩ/km	V/5min	kg/km
1T	0.75	7	1.2	0.5	1.1	8.9	0.6	26.0	1,030	1,500	100
2T	0.75	7	1.2	0.5	1.2	13.8	0.7	26.0	1,030	1,500	190
3T	0.75	7	1.2	0.5	1.3	14.9	0.7	26.0	1,030	1,500	240
4T	0.75	7	1.2	0.5	1.3	16.3	0.8	26.0	1,030	1,500	300
7T	0.75	7	1.2	0.5	1.5	21.3	0.9	26.0	1,030	1,500	490
8T	0.75	7	1.2	0.5	1.6	23.3	1.0	26.0	1,030	1,500	570
10T	0.75	7	1.2	0.5	1.7	26.3	1.1	26.0	1,030	1,500	680
12T	0.75	7	1.2	0.5	1.8	28.0	1.1	26.0	1,030	1,500	790
14T	0.75	7	1.2	0.5	1.8	29.1	1.2	26.0	1,030	1,500	890
16T	0.75	7	1.2	0.5	1.9	31.1	1.2	26.0	1,030	1,500	1,010
19T	0.75	7	1.2	0.5	2.0	33.6	1.3	26.0	1,030	1,500	1,180
24T	0.75	7	1.2	0.5	2.1	37.2	1.4	26.0	1,030	1,500	1,460
30T	0.75	7	1.2	0.5	2.3	41.4	1.5	26.0	1,030	1,500	1,810
32T	0.75	7	1.2	0.5	2.3	42.8	1.6	26.0	1,030	1,500	1,920
37T	0.75	7	1.2	0.5	2.4	45.0	1.7	26.0	1,030	1,500	2,180
1T	1.0	7	1.4	0.5	1.1	9.4	0.6	19.2	920	1,500	110
2T	1.0	7	1.4	0.5	1.3	14.9	0.7	19.2	920	1,500	220
3T	1.0	7	1.4	0.5	1.3	15.8	0.8	19.2	920	1,500	280
4T	1.0	7	1.4	0.5	1.4	17.6	0.8	19.2	920	1,500	360
7T	1.0	7	1.4	0.5	1.6	23.0	1.0	19.2	920	1,500	590
8T	1.0	7	1.4	0.5	1.7	25.0	1.1	19.2	920	1,500	680
10T	1.0	7	1.4	0.5	1.8	28.4	1.2	19.2	920	1,500	810
12T	1.0	7	1.4	0.5	1.8	29.9	1.2	19.2	920	1,500	940
14T	1.0	7	1.4	0.5	1.9	31.3	1.2	19.2	920	1,500	1,070
16T	1.0	7	1.4	0.5	2.0	33.4	1.3	19.2	920	1,500	1,210
19T	1.0	7	1.4	0.5	2.1	36.1	1.4	19.2	920	1,500	1,420
24T	1.0	7	1.4	0.5	2.2	40.0	1.5	19.2	920	1,500	1,750
30T	1.0	7	1.4	0.5	2.4	44.5	1.6	19.2	920	1,500	2,170
32T	1.0	7	1.4	0.5	2.4	46.0	1.7	19.2	920	1,500	2,300
37T	1.0	7	1.4	0.5	2.5	48.4	1.8	19.2	920	1,500	2,620
1T	1.5	7	1.7	0.6	1.1	10.5	0.6	12.8	910	1,500	140
2T	1.5	7	1.7	0.6	1.4	17.1	0.8	12.8	910	1,500	290
3T	1.5	7	1.7	0.6	1.4	18.1	0.8	12.8	910	1,500	370
4T	1.5	7	1.7	0.6	1.5	20.1	0.9	12.8	910	1,500	470
7T	1.5	7	1.7	0.6	1.7	26.3	1.1	12.8	910	1,500	780
8T	1.5	7	1.7	0.6	1.8	28.7	1.2	12.8	910	1,500	900
10T	1.5	7	1.7	0.6	1.9	32.5	1.3	12.8	910	1,500	1,080
12T	1.5	7	1.7	0.6	2.0	34.5	1.3	12.8	910	1,500	1,260
14T	1.5	7	1.7	0.6	2.1	36.2	1.4	12.8	910	1,500	1,440
16T	1.5	7	1.7	0.6	2.2	38.6	1.5	12.8	910	1,500	1,640
19T	1.5	7	1.7	0.6	2.3	41.7	1.6	12.8	910	1,500	1,920
24T	1.5	7	1.7	0.6	2.4	46.2	1.7	12.8	910	1,500	2,370
30T	1.5	7	1.7	0.6	2.6	51.3	1.8	12.8	910	1,500	2,930
32T	1.5	7	1.7	0.6	2.7	53.3	1.9	12.8	910	1,500	3,130
37T	1.5	7	1.7	0.6	2.8	56.0	2.0	12.8	910	1,500	3,560

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Fire resistance

Instrumentation Cable



Cable Designation

250V BI(i), 250V BI(i&c)

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Fire resistance : IEC 60331-21(90min)
IEC 60331-1,-2(120min)
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or
IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2
	Fire resisting layer	B	- Mica/glass tape
	Insulation		- XLPE as per IEC 60092-351
	Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad
	Individual screen	(i)	- Screened by AL/PS tape with tinned copper drain wire - Each pair/triad is wrapped with polyester tape to prevent electrical contact with adjacent pairs/triads
	Cabling		- Screened pairs/triads shall be cabled - Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable
	Collective screen	(c)	- Screened by AL/PS tape with tinned copper drain wire - A suitable tape may be applied on the collective screen - In case of 250V BI(i) cable, collective screen is omitted
	Sheath	I	- SHF1 as per IEC 60092-359 - Sheath color : Black
	Core identification		- Colored insulation plus Arabic number printing on the insulation • Pair : White, Black • Triad : White, Red, Black

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

250V BI(i), 250V BI(i&c)

No. of Pairs	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km
1P	0.75	7	1.2	0.5	1.1	8.7	0.6	26.0	1,030	1,500	80
2P	0.75	7	1.2	0.5	1.3	14.1	0.7	26.0	1,030	1,500	180
3P	0.75	7	1.2	0.5	1.3	14.9	0.7	26.0	1,030	1,500	230
4P	0.75	7	1.2	0.5	1.3	16.3	0.8	26.0	1,030	1,500	280
7P	0.75	7	1.2	0.5	1.5	19.9	0.9	26.0	1,030	1,500	430
8P	0.75	7	1.2	0.5	1.5	21.8	1.0	26.0	1,030	1,500	500
10P	0.75	7	1.2	0.5	1.7	25.0	1.1	26.0	1,030	1,500	610
12P	0.75	7	1.2	0.5	1.7	26.0	1.1	26.0	1,030	1,500	690
14P	0.75	7	1.2	0.5	1.7	27.2	1.1	26.0	1,030	1,500	780
16P	0.75	7	1.2	0.5	1.8	29.3	1.2	26.0	1,030	1,500	890
19P	0.75	7	1.2	0.5	1.9	30.4	1.2	26.0	1,030	1,500	1,020
24P	0.75	7	1.2	0.5	2.0	35.4	1.4	26.0	1,030	1,500	1,290
30P	0.75	7	1.2	0.5	2.1	37.8	1.4	26.0	1,030	1,500	1,550
32P	0.75	7	1.2	0.5	2.2	38.6	1.5	26.0	1,030	1,500	1,650
37P	0.75	7	1.2	0.5	2.2	40.5	1.5	26.0	1,030	1,500	1,860
1P	1.0	7	1.4	0.5	1.1	9.1	0.6	19.2	920	1,500	90
2P	1.0	7	1.4	0.5	1.3	14.8	0.7	19.2	920	1,500	210
3P	1.0	7	1.4	0.5	1.3	15.7	0.8	19.2	920	1,500	260
4P	1.0	7	1.4	0.5	1.4	17.4	0.8	19.2	920	1,500	330
7P	1.0	7	1.4	0.5	1.5	20.9	0.9	19.2	920	1,500	510
8P	1.0	7	1.4	0.5	1.6	23.1	1.0	19.2	920	1,500	590
10P	1.0	7	1.4	0.5	1.7	26.3	1.1	19.2	920	1,500	710
12P	1.0	7	1.4	0.5	1.8	27.6	1.1	19.2	920	1,500	820
14P	1.0	7	1.4	0.5	1.8	28.9	1.2	19.2	920	1,500	930
16P	1.0	7	1.4	0.5	1.9	31.1	1.2	19.2	920	1,500	1,060
19P	1.0	7	1.4	0.5	1.9	32.1	1.3	19.2	920	1,500	1,200
24P	1.0	7	1.4	0.5	2.1	37.5	1.4	19.2	920	1,500	1,530
30P	1.0	7	1.4	0.5	2.2	40.1	1.5	19.2	920	1,500	1,850
32P	1.0	7	1.4	0.5	2.2	40.7	1.5	19.2	920	1,500	1,950
37P	1.0	7	1.4	0.5	2.3	43.0	1.6	19.2	920	1,500	2,230
1P	1.5	7	1.7	0.6	1.1	10.1	0.6	12.8	910	1,500	110
2P	1.5	7	1.7	0.6	1.4	16.8	0.8	12.8	910	1,500	260
3P	1.5	7	1.7	0.6	1.4	17.8	0.8	12.8	910	1,500	330
4P	1.5	7	1.7	0.6	1.5	19.7	0.9	12.8	910	1,500	410
7P	1.5	7	1.7	0.6	1.6	23.7	1.0	12.8	910	1,500	640
8P	1.5	7	1.7	0.6	1.7	26.2	1.1	12.8	910	1,500	750
10P	1.5	7	1.7	0.6	1.8	29.9	1.2	12.8	910	1,500	900
12P	1.5	7	1.7	0.6	1.9	31.3	1.2	12.8	910	1,500	1,050
14P	1.5	7	1.7	0.6	2.0	33.0	1.3	12.8	910	1,500	1,200
16P	1.5	7	1.7	0.6	2.0	35.3	1.4	12.8	910	1,500	1,350
19P	1.5	7	1.7	0.6	2.1	36.7	1.4	12.8	910	1,500	1,550
24P	1.5	7	1.7	0.6	2.3	42.8	1.6	12.8	910	1,500	1,980
30P	1.5	7	1.7	0.6	2.4	45.7	1.7	12.8	910	1,500	2,390
32P	1.5	7	1.7	0.6	2.5	46.7	1.7	12.8	910	1,500	2,540
37P	1.5	7	1.7	0.6	2.6	49.2	1.8	12.8	910	1,500	2,900

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

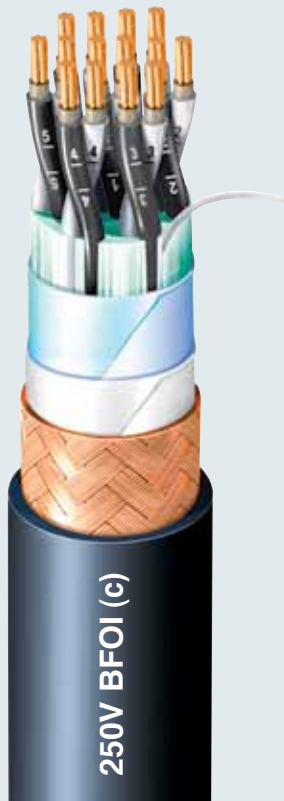
Technical data

Fire resistance

Instrumentation Cable

250V BI(i), 250V BI(i&c)

No. of Triads	Conductor			Thickness of Insulation	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.			Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km
1T	0.75	7	1.2	0.5	1.1	9.5	0.6	26.0	1,030	1,500	110
2T	0.75	7	1.2	0.5	1.3	15.1	0.8	26.0	1,030	1,500	220
3T	0.75	7	1.2	0.5	1.3	16.0	0.8	26.0	1,030	1,500	280
4T	0.75	7	1.2	0.5	1.4	17.8	0.8	26.0	1,030	1,500	360
7T	0.75	7	1.2	0.5	1.6	23.3	1.0	26.0	1,030	1,500	600
8T	0.75	7	1.2	0.5	1.7	25.4	1.1	26.0	1,030	1,500	690
10T	0.75	7	1.2	0.5	1.8	28.7	1.2	26.0	1,030	1,500	820
12T	0.75	7	1.2	0.5	1.9	30.5	1.2	26.0	1,030	1,500	950
14T	0.75	7	1.2	0.5	1.9	31.8	1.3	26.0	1,030	1,500	1,070
16T	0.75	7	1.2	0.5	2.0	33.8	1.3	26.0	1,030	1,500	1,220
19T	0.75	7	1.2	0.5	2.1	36.6	1.4	26.0	1,030	1,500	1,430
24T	0.75	7	1.2	0.5	2.2	40.6	1.5	26.0	1,030	1,500	1,760
30T	0.75	7	1.2	0.5	2.4	45.1	1.7	26.0	1,030	1,500	2,180
32T	0.75	7	1.2	0.5	2.5	46.8	1.7	26.0	1,030	1,500	2,330
37T	0.75	7	1.2	0.5	2.6	49.2	1.8	26.0	1,030	1,500	2,650
1T	1.0	7	1.4	0.5	1.1	9.9	0.6	19.2	920	1,500	130
2T	1.0	7	1.4	0.5	1.3	15.8	0.8	19.2	920	1,500	260
3T	1.0	7	1.4	0.5	1.4	17.0	0.8	19.2	920	1,500	330
4T	1.0	7	1.4	0.5	1.4	18.7	0.9	19.2	920	1,500	420
7T	1.0	7	1.4	0.5	1.6	24.4	1.0	19.2	920	1,500	690
8T	1.0	7	1.4	0.5	1.7	26.6	1.1	19.2	920	1,500	800
10T	1.0	7	1.4	0.5	1.9	30.4	1.2	19.2	920	1,500	970
12T	1.0	7	1.4	0.5	1.9	32.0	1.3	19.2	920	1,500	1,120
14T	1.0	7	1.4	0.5	2.0	33.6	1.3	19.2	920	1,500	1,280
16T	1.0	7	1.4	0.5	2.1	35.8	1.4	19.2	920	1,500	1,450
19T	1.0	7	1.4	0.5	2.2	38.6	1.5	19.2	920	1,500	1,700
24T	1.0	7	1.4	0.5	2.3	42.9	1.6	19.2	920	1,500	2,100
30T	1.0	7	1.4	0.5	2.5	47.6	1.7	19.2	920	1,500	2,600
32T	1.0	7	1.4	0.5	2.6	49.5	1.8	19.2	920	1,500	2,780
37T	1.0	7	1.4	0.5	2.7	52.0	1.9	19.2	920	1,500	3,160
1T	1.5	7	1.7	0.6	1.1	11.0	0.6	12.8	910	1,500	160
2T	1.5	7	1.7	0.6	1.4	17.9	0.8	12.8	910	1,500	330
3T	1.5	7	1.7	0.6	1.4	19.1	0.9	12.8	910	1,500	420
4T	1.5	7	1.7	0.6	1.5	21.2	0.9	12.8	910	1,500	540
7T	1.5	7	1.7	0.6	1.8	28.0	1.1	12.8	910	1,500	910
8T	1.5	7	1.7	0.6	1.9	30.5	1.2	12.8	910	1,500	1,040
10T	1.5	7	1.7	0.6	2.0	34.5	1.3	12.8	910	1,500	1,250
12T	1.5	7	1.7	0.6	2.1	36.7	1.4	12.8	910	1,500	1,460
14T	1.5	7	1.7	0.6	2.2	38.4	1.5	12.8	910	1,500	1,670
16T	1.5	7	1.7	0.6	2.2	40.7	1.5	12.8	910	1,500	1,870
19T	1.5	7	1.7	0.6	2.4	44.2	1.6	12.8	910	1,500	2,210
24T	1.5	7	1.7	0.6	2.6	49.2	1.8	12.8	910	1,500	2,760
30T	1.5	7	1.7	0.6	2.8	54.6	1.9	12.8	910	1,500	3,410
32T	1.5	7	1.7	0.6	2.8	56.6	2.0	12.8	910	1,500	3,630
37T	1.5	7	1.7	0.6	2.9	59.5	2.1	12.8	910	1,500	4,130



Cable Designation

250V BFOI, 250V BFOI(c)

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Fire resistance : IEC 60331-21(90min)
IEC 60331-1,-2(120min)
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or
IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2
	Fire resisting layer	B	- Mica/glass tape
	Insulation		- XLPE as per IEC 60092-351
	Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad - Twisted pairs/triads shall be cabled
	Cabling		- Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable
	Collective screen	(c)	- Screened by AL/PS tape with tinned copper drain wire - A suitable tape may be applied on the collective screen - In case of 250V BFOI cable, collective screen is omitted
	Inner covering	F	- Non-hygroscopic material
	Armor	O	- Braid of plain annealed copper wire - Coverage density : Min. 90%
	Sheath	I	- SHF1 as per IEC 60092-359 - Sheath color : Black
	Core identification		- Colored insulation plus Arabic number printing on the insulation • Pair : White, Black • Triad : White, Red, Black

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

Fire resistance

Instrumentation Cable

250V BFOI, 250V BFOI(c)

No. of Pairs	Conductor			Thickness of Insulation	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.					Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km
1P	0.75	7	1.2	0.5	6.2	0.2	1.1	9.5	0.6	26.0	1,030	1,500	120
2P	0.75	7	1.2	0.5	10.3	0.3	1.3	14.3	0.7	26.0	1,030	1,500	240
3P	0.75	7	1.2	0.5	11.1	0.3	1.3	15.1	0.8	26.0	1,030	1,500	270
4P	0.75	7	1.2	0.5	12.0	0.3	1.3	16.0	0.8	26.0	1,030	1,500	320
7P	0.75	7	1.2	0.5	15.5	0.3	1.5	19.9	0.9	26.0	1,030	1,500	480
8P	0.75	7	1.2	0.5	16.6	0.3	1.5	21.0	0.9	26.0	1,030	1,500	520
10P	0.75	7	1.2	0.5	19.3	0.3	1.6	23.9	1.0	26.0	1,030	1,500	630
12P	0.75	7	1.2	0.5	20.1	0.3	1.7	24.9	1.0	26.0	1,030	1,500	710
14P	0.75	7	1.2	0.5	21.0	0.3	1.7	25.8	1.1	26.0	1,030	1,500	780
16P	0.75	7	1.2	0.5	22.7	0.3	1.8	27.7	1.1	26.0	1,030	1,500	880
19P	0.75	7	1.2	0.5	23.9	0.3	1.8	28.9	1.2	26.0	1,030	1,500	980
24P	0.75	7	1.2	0.5	27.4	0.3	1.9	32.6	1.3	26.0	1,030	1,500	1,200
30P	0.75	7	1.2	0.5	30.9	0.4	2.1	36.5	1.4	26.0	1,030	1,500	1,470
32P	0.75	7	1.2	0.5	31.4	0.4	2.1	37.0	1.4	26.0	1,030	1,500	1,540
37P	0.75	7	1.2	0.5	33.2	0.4	2.2	39.5	1.5	26.0	1,030	1,500	1,830
1P	1.0	7	1.4	0.5	6.6	0.2	1.1	9.9	0.6	19.2	920	1,500	130
2P	1.0	7	1.4	0.5	10.9	0.3	1.3	14.9	0.7	19.2	920	1,500	260
3P	1.0	7	1.4	0.5	11.9	0.3	1.3	15.9	0.8	19.2	920	1,500	310
4P	1.0	7	1.4	0.5	12.8	0.3	1.4	17.0	0.8	19.2	920	1,500	360
7P	1.0	7	1.4	0.5	16.5	0.3	1.5	20.9	0.9	19.2	920	1,500	540
8P	1.0	7	1.4	0.5	17.8	0.3	1.6	22.4	1.0	19.2	920	1,500	610
10P	1.0	7	1.4	0.5	20.6	0.3	1.7	25.4	1.1	19.2	920	1,500	730
12P	1.0	7	1.4	0.5	21.5	0.3	1.7	26.3	1.1	19.2	920	1,500	810
14P	1.0	7	1.4	0.5	22.4	0.3	1.7	27.2	1.1	19.2	920	1,500	890
16P	1.0	7	1.4	0.5	24.3	0.3	1.8	29.3	1.2	19.2	920	1,500	1,010
19P	1.0	7	1.4	0.5	25.5	0.3	1.9	30.7	1.2	19.2	920	1,500	1,150
24P	1.0	7	1.4	0.5	29.2	0.3	2.0	34.6	1.3	19.2	920	1,500	1,410
30P	1.0	7	1.4	0.5	33.0	0.4	2.2	39.3	1.5	19.2	920	1,500	1,830
32P	1.0	7	1.4	0.5	33.6	0.4	2.2	39.9	1.5	19.2	920	1,500	1,910
37P	1.0	7	1.4	0.5	35.4	0.4	2.3	41.9	1.6	19.2	920	1,500	2,140
1P	1.5	7	1.7	0.6	7.6	0.2	1.1	10.9	0.6	12.8	910	1,500	160
2P	1.5	7	1.7	0.6	12.6	0.3	1.4	16.8	0.8	12.8	910	1,500	320
3P	1.5	7	1.7	0.6	13.7	0.3	1.4	17.9	0.8	12.8	910	1,500	390
4P	1.5	7	1.7	0.6	14.8	0.3	1.4	19.0	0.9	12.8	910	1,500	450
7P	1.5	7	1.7	0.6	19.1	0.3	1.6	23.7	1.0	12.8	910	1,500	690
8P	1.5	7	1.7	0.6	20.6	0.3	1.7	25.4	1.1	12.8	910	1,500	780
10P	1.5	7	1.7	0.6	23.8	0.3	1.8	28.8	1.2	12.8	910	1,500	930
12P	1.5	7	1.7	0.6	24.9	0.3	1.8	29.9	1.2	12.8	910	1,500	1,040
14P	1.5	7	1.7	0.6	26.0	0.3	1.9	31.2	1.2	12.8	910	1,500	1,170
16P	1.5	7	1.7	0.6	28.1	0.3	2.0	33.5	1.3	12.8	910	1,500	1,320
19P	1.5	7	1.7	0.6	29.6	0.3	2.0	35.0	1.4	12.8	910	1,500	1,490
24P	1.5	7	1.7	0.6	33.9	0.4	2.2	40.2	1.5	12.8	910	1,500	1,960
30P	1.5	7	1.7	0.6	38.2	0.4	2.4	44.9	1.6	12.8	910	1,500	2,390
32P	1.5	7	1.7	0.6	38.9	0.4	2.4	45.6	1.7	12.8	910	1,500	2,500
37P	1.5	7	1.7	0.6	41.1	0.4	2.5	48.0	1.7	12.8	910	1,500	2,820

250V BFOI, 250V BFOI(c)

No. of Triads	Conductor			Thickness of Insulation	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.					Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km
1T	0.75	7	1.2	0.5	6.6	0.2	1.1	9.9	0.6	26.0	1,030	1,500	140
2T	0.75	7	1.2	0.5	11.3	0.3	1.3	15.3	0.8	26.0	1,030	1,500	280
3T	0.75	7	1.2	0.5	12.2	0.3	1.3	16.2	0.8	26.0	1,030	1,500	340
4T	0.75	7	1.2	0.5	13.6	0.3	1.4	17.8	0.8	26.0	1,030	1,500	410
7T	0.75	7	1.2	0.5	18.2	0.3	1.6	22.8	1.0	26.0	1,030	1,500	640
8T	0.75	7	1.2	0.5	20.0	0.3	1.6	24.6	1.0	26.0	1,030	1,500	720
10T	0.75	7	1.2	0.5	22.8	0.3	1.8	27.8	1.1	26.0	1,030	1,500	860
12T	0.75	7	1.2	0.5	24.3	0.3	1.8	29.3	1.2	26.0	1,030	1,500	970
14T	0.75	7	1.2	0.5	25.4	0.3	1.9	30.6	1.2	26.0	1,030	1,500	1,090
16T	0.75	7	1.2	0.5	27.2	0.3	1.9	32.4	1.3	26.0	1,030	1,500	1,210
19T	0.75	7	1.2	0.5	29.5	0.3	2.0	34.9	1.3	26.0	1,030	1,500	1,400
24T	0.75	7	1.2	0.5	32.9	0.4	2.2	39.2	1.5	26.0	1,030	1,500	1,820
30T	0.75	7	1.2	0.5	36.7	0.4	2.3	43.2	1.6	26.0	1,030	1,500	2,190
32T	0.75	7	1.2	0.5	38.1	0.4	2.4	44.8	1.6	26.0	1,030	1,500	2,330
37T	0.75	7	1.2	0.5	40.1	0.4	2.5	47.0	1.7	26.0	1,030	1,500	2,610
1T	1.0	7	1.4	0.5	7.1	0.2	1.1	10.4	0.6	19.2	920	1,500	160
2T	1.0	7	1.4	0.5	12.2	0.3	1.3	16.2	0.8	19.2	920	1,500	320
3T	1.0	7	1.4	0.5	13.1	0.3	1.4	17.3	0.8	19.2	920	1,500	390
4T	1.0	7	1.4	0.5	14.7	0.3	1.4	18.9	0.9	19.2	920	1,500	470
7T	1.0	7	1.4	0.5	19.7	0.3	1.6	24.3	1.0	19.2	920	1,500	740
8T	1.0	7	1.4	0.5	21.5	0.3	1.7	26.3	1.1	19.2	920	1,500	840
10T	1.0	7	1.4	0.5	24.7	0.3	1.8	29.7	1.2	19.2	920	1,500	1,000
12T	1.0	7	1.4	0.5	26.2	0.3	1.9	31.4	1.2	19.2	920	1,500	1,150
14T	1.0	7	1.4	0.5	27.4	0.3	1.9	32.6	1.3	19.2	920	1,500	1,270
16T	1.0	7	1.4	0.5	29.3	0.3	2.0	34.7	1.3	19.2	920	1,500	1,430
19T	1.0	7	1.4	0.5	31.8	0.4	2.1	37.4	1.4	19.2	920	1,500	1,660
24T	1.0	7	1.4	0.5	35.5	0.4	2.3	42.0	1.6	19.2	920	1,500	2,140
30T	1.0	7	1.4	0.5	39.6	0.4	2.5	46.5	1.7	19.2	920	1,500	2,600
32T	1.0	7	1.4	0.5	41.1	0.4	2.5	48.0	1.7	19.2	920	1,500	2,750
37T	1.0	7	1.4	0.5	43.3	0.4	2.6	50.4	1.8	19.2	920	1,500	3,090
1T	1.5	7	1.7	0.6	8.2	0.2	1.2	11.7	0.7	12.8	910	1,500	200
2T	1.5	7	1.7	0.6	14.2	0.3	1.4	18.4	0.9	12.8	910	1,500	400
3T	1.5	7	1.7	0.6	15.2	0.3	1.5	19.6	0.9	12.8	910	1,500	500
4T	1.5	7	1.7	0.6	17.0	0.3	1.5	21.4	0.9	12.8	910	1,500	600
7T	1.5	7	1.7	0.6	22.8	0.3	1.8	27.8	1.1	12.8	910	1,500	970
8T	1.5	7	1.7	0.6	25.0	0.3	1.8	30.0	1.2	12.8	910	1,500	1,090
10T	1.5	7	1.7	0.6	28.6	0.3	2.0	34.0	1.3	12.8	910	1,500	1,310
12T	1.5	7	1.7	0.6	30.4	0.4	2.1	36.0	1.4	12.8	910	1,500	1,500
14T	1.5	7	1.7	0.6	31.9	0.4	2.1	37.5	1.4	12.8	910	1,500	1,680
16T	1.5	7	1.7	0.6	34.1	0.4	2.2	40.4	1.5	12.8	910	1,500	1,990
19T	1.5	7	1.7	0.6	37.0	0.4	2.3	43.5	1.6	12.8	910	1,500	2,300
24T	1.5	7	1.7	0.6	41.3	0.4	2.5	48.2	1.7	12.8	910	1,500	2,820
30T	1.5	7	1.7	0.6	46.0	0.4	2.7	53.3	1.9	12.8	910	1,500	3,430
32T	1.5	7	1.7	0.6	47.8	0.4	2.8	55.3	2.0	12.8	910	1,500	3,650
37T	1.5	7	1.7	0.6	50.3	0.4	2.9	58.0	2.0	12.8	910	1,500	4,110

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Fire resistance

Instrumentation Cable



Cable Designation

250V BFO(i), 250V BFO(i&c)

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Fire resistance : IEC 60331-21(90min)
IEC 60331-1,-2(120min)
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or
IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2
	Fire resisting layer	B	- Mica/glass tape
	Insulation		- XLPE as per IEC 60092-351
	Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad
	Individual screen	(i)	- Screened by AL/PS tape with tinned copper drain wire
	Cabling		- Each pair/triad is wrapped with polyester tape to prevent electrical contact with adjacent pairs/triads
	Collective screen	(c)	- Screened pairs/triads shall be cabled
	Inner covering	F	- Flame retardant & non-hygroscopic fillers may be used
	Armor	O	- Suitable tape(s) may be applied on the cabled core
	Sheath	I	- A Filler may be applied to obtain a circular Cable
Core identification		- Screened by AL/PS tape with tinned copper drain wire	
			- A suitable tape may be applied on the collective screen
			- In case of 250V BFO(i) cable, collective screen is omitted
			- Non-hygroscopic material
			- Braid of plain annealed copper wire
			- Coverage density : Min. 90%
			- SHF1 as per IEC 60092-359
			- Sheath color : Black
			- Colored insulation plus Arabic number printing on the insulation
			• Pair : White, Black • Triad : White, Red, Black

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

250V BFOI(i), 250V BFOI(i&c)

No. of Pairs	Conductor			Thickness of Insulation	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.					Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km
1P	0.75	7	1.2	0.5	6.3	0.2	1.1	9.6	0.6	26.0	1,030	1,500	120
2P	0.75	7	1.2	0.5	11.1	0.3	1.3	15.1	0.8	26.0	1,030	1,500	270
3P	0.75	7	1.2	0.5	11.9	0.3	1.3	15.9	0.8	26.0	1,030	1,500	310
4P	0.75	7	1.2	0.5	13.2	0.3	1.4	17.4	0.8	26.0	1,030	1,500	380
7P	0.75	7	1.2	0.5	16.3	0.3	1.5	20.7	0.9	26.0	1,030	1,500	550
8P	0.75	7	1.2	0.5	18.1	0.3	1.6	22.7	1.0	26.0	1,030	1,500	630
10P	0.75	7	1.2	0.5	20.8	0.3	1.7	25.6	1.1	26.0	1,030	1,500	750
12P	0.75	7	1.2	0.5	21.8	0.3	1.7	26.6	1.1	26.0	1,030	1,500	830
14P	0.75	7	1.2	0.5	23.0	0.3	1.8	28.0	1.1	26.0	1,030	1,500	940
16P	0.75	7	1.2	0.5	24.8	0.3	1.8	29.8	1.2	26.0	1,030	1,500	1,050
19P	0.75	7	1.2	0.5	25.7	0.3	1.9	30.9	1.2	26.0	1,030	1,500	1,180
24P	0.75	7	1.2	0.5	30.3	0.4	2.1	35.9	1.4	26.0	1,030	1,500	1,490
30P	0.75	7	1.2	0.5	32.4	0.4	2.2	38.7	1.5	26.0	1,030	1,500	1,860
32P	0.75	7	1.2	0.5	33.0	0.4	2.2	39.3	1.5	26.0	1,030	1,500	1,950
37P	0.75	7	1.2	0.5	34.9	0.4	2.3	41.4	1.5	26.0	1,030	1,500	2,190
1P	1.0	7	1.4	0.5	6.7	0.2	1.1	10.0	0.6	19.2	920	1,500	140
2P	1.0	7	1.4	0.5	11.8	0.3	1.3	15.8	0.8	19.2	920	1,500	300
3P	1.0	7	1.4	0.5	12.6	0.3	1.4	16.8	0.8	19.2	920	1,500	360
4P	1.0	7	1.4	0.5	14.1	0.3	1.4	18.3	0.8	19.2	920	1,500	430
7P	1.0	7	1.4	0.5	17.3	0.3	1.5	21.7	1.0	19.2	920	1,500	620
8P	1.0	7	1.4	0.5	19.3	0.3	1.6	23.9	1.0	19.2	920	1,500	720
10P	1.0	7	1.4	0.5	22.2	0.3	1.7	27.0	1.1	19.2	920	1,500	860
12P	1.0	7	1.4	0.5	23.2	0.3	1.8	28.2	1.1	19.2	920	1,500	980
14P	1.0	7	1.4	0.5	24.5	0.3	1.8	29.5	1.2	19.2	920	1,500	1,090
16P	1.0	7	1.4	0.5	26.4	0.3	1.9	31.6	1.2	19.2	920	1,500	1,230
19P	1.0	7	1.4	0.5	27.4	0.3	1.9	32.6	1.3	19.2	920	1,500	1,380
24P	1.0	7	1.4	0.5	32.3	0.4	2.2	38.6	1.5	19.2	920	1,500	1,850
30P	1.0	7	1.4	0.5	34.5	0.4	2.2	40.8	1.5	19.2	920	1,500	2,160
32P	1.0	7	1.4	0.5	35.2	0.4	2.3	41.7	1.6	19.2	920	1,500	2,290
37P	1.0	7	1.4	0.5	37.1	0.4	2.4	43.8	1.6	19.2	920	1,500	2,570
1P	1.5	7	1.7	0.6	7.7	0.2	1.1	11.0	0.6	12.8	910	1,500	160
2P	1.5	7	1.7	0.6	13.5	0.3	1.4	17.7	0.8	12.8	910	1,500	360
3P	1.5	7	1.7	0.6	14.5	0.3	1.4	18.7	0.9	12.8	910	1,500	430
4P	1.5	7	1.7	0.6	16.2	0.3	1.5	20.6	0.9	12.8	910	1,500	530
7P	1.5	7	1.7	0.6	19.9	0.3	1.6	24.5	1.0	12.8	910	1,500	780
8P	1.5	7	1.7	0.6	22.2	0.3	1.7	27.0	1.1	12.8	910	1,500	900
10P	1.5	7	1.7	0.6	25.5	0.3	1.9	30.7	1.2	12.8	910	1,500	1,090
12P	1.5	7	1.7	0.6	26.7	0.3	1.9	31.9	1.3	12.8	910	1,500	1,220
14P	1.5	7	1.7	0.6	28.2	0.3	2.0	33.6	1.3	12.8	910	1,500	1,380
16P	1.5	7	1.7	0.6	30.4	0.4	2.1	36.0	1.4	12.8	910	1,500	1,560
19P	1.5	7	1.7	0.6	31.5	0.4	2.1	37.1	1.4	12.8	910	1,500	1,750
24P	1.5	7	1.7	0.6	37.2	0.4	2.4	43.9	1.6	12.8	910	1,500	2,340
30P	1.5	7	1.7	0.6	39.8	0.4	2.5	46.7	1.7	12.8	910	1,500	2,770
32P	1.5	7	1.7	0.6	40.5	0.4	2.5	47.4	1.7	12.8	910	1,500	2,910
37P	1.5	7	1.7	0.6	42.8	0.4	2.6	49.9	1.8	12.8	910	1,500	3,280

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Fire resistance

Instrumentation Cable

250V BFOI(i), 250V BFOI(i&c)

No. of Triads	Conductor			Thickness of Insulation	Nominal dia. of inner covering	Dia. of wire for armor	Thickness of sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.					Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km	
1T	0.75	7	1.2	0.5	6.7	0.2	1.1	10.0	0.6	26.0	1,030	1,500	150
2T	0.75	7	1.2	0.5	11.9	0.3	1.3	15.9	0.8	26.0	1,030	1,500	310
3T	0.75	7	1.2	0.5	12.8	0.3	1.4	17.0	0.8	26.0	1,030	1,500	380
4T	0.75	7	1.2	0.5	14.3	0.3	1.4	18.5	0.9	26.0	1,030	1,500	460
7T	0.75	7	1.2	0.5	19.1	0.3	1.6	23.7	1.0	26.0	1,030	1,500	720
8T	0.75	7	1.2	0.5	20.9	0.3	1.7	25.7	1.1	26.0	1,030	1,500	820
10T	0.75	7	1.2	0.5	23.9	0.3	1.8	28.9	1.2	26.0	1,030	1,500	970
12T	0.75	7	1.2	0.5	25.4	0.3	1.9	30.6	1.2	26.0	1,030	1,500	1,110
14T	0.75	7	1.2	0.5	26.6	0.3	1.9	31.8	1.3	26.0	1,030	1,500	1,230
16T	0.75	7	1.2	0.5	28.5	0.3	2.0	33.9	1.3	26.0	1,030	1,500	1,390
19T	0.75	7	1.2	0.5	30.9	0.4	2.1	36.5	1.4	26.0	1,030	1,500	1,610
24T	0.75	7	1.2	0.5	34.5	0.4	2.2	40.8	1.5	26.0	1,030	1,500	2,060
30T	0.75	7	1.2	0.5	38.4	0.4	2.4	45.1	1.7	26.0	1,030	1,500	2,500
32T	0.75	7	1.2	0.5	39.9	0.4	2.5	46.8	1.7	26.0	1,030	1,500	2,670
37T	0.75	7	1.2	0.5	42.0	0.4	2.5	48.9	1.8	26.0	1,030	1,500	2,970
1T	1.0	7	1.4	0.5	7.2	0.2	1.1	10.5	0.6	19.2	920	1,500	170
2T	1.0	7	1.4	0.5	12.7	0.3	1.4	16.9	0.8	19.2	920	1,500	360
3T	1.0	7	1.4	0.5	13.7	0.3	1.4	17.9	0.8	19.2	920	1,500	430
4T	1.0	7	1.4	0.5	15.3	0.3	1.5	19.7	0.9	19.2	920	1,500	530
7T	1.0	7	1.4	0.5	20.5	0.3	1.7	25.3	1.1	19.2	920	1,500	840
8T	1.0	7	1.4	0.5	22.5	0.3	1.7	27.3	1.1	19.2	920	1,500	950
10T	1.0	7	1.4	0.5	25.7	0.3	1.9	30.9	1.2	19.2	920	1,500	1,140
12T	1.0	7	1.4	0.5	27.4	0.3	1.9	32.6	1.3	19.2	920	1,500	1,290
14T	1.0	7	1.4	0.5	28.7	0.3	2.0	34.1	1.3	19.2	920	1,500	1,460
16T	1.0	7	1.4	0.5	30.6	0.4	2.1	36.2	1.4	19.2	920	1,500	1,640
19T	1.0	7	1.4	0.5	33.2	0.4	2.2	39.5	1.5	19.2	920	1,500	2,000
24T	1.0	7	1.4	0.5	37.1	0.4	2.4	43.8	1.6	19.2	920	1,500	2,450
30T	1.0	7	1.4	0.5	41.3	0.4	2.5	48.2	1.7	19.2	920	1,500	2,960
32T	1.0	7	1.4	0.5	43.0	0.4	2.6	50.1	1.8	19.2	920	1,500	3,150
37T	1.0	7	1.4	0.5	45.2	0.4	2.7	52.5	1.9	19.2	920	1,500	3,550
1T	1.5	7	1.7	0.6	8.3	0.2	1.2	11.8	0.7	12.8	910	1,500	210
2T	1.5	7	1.7	0.6	14.7	0.3	1.4	18.9	0.9	12.8	910	1,500	430
3T	1.5	7	1.7	0.6	15.8	0.3	1.5	20.2	0.9	12.8	910	1,500	540
4T	1.5	7	1.7	0.6	17.7	0.3	1.6	22.3	1.0	12.8	910	1,500	670
7T	1.5	7	1.7	0.6	23.7	0.3	1.8	28.7	1.2	12.8	910	1,500	1,070
8T	1.5	7	1.7	0.6	26.0	0.3	1.9	31.2	1.2	12.8	910	1,500	1,220
10T	1.5	7	1.7	0.6	29.7	0.3	2.0	35.1	1.4	12.8	910	1,500	1,440
12T	1.5	7	1.7	0.6	31.6	0.4	2.1	37.2	1.4	12.8	910	1,500	1,660
14T	1.5	7	1.7	0.6	33.1	0.4	2.2	38.9	1.5	12.8	910	1,500	1,870
16T	1.5	7	1.7	0.6	35.4	0.4	2.3	41.9	1.6	12.8	910	1,500	2,220
19T	1.5	7	1.7	0.6	38.4	0.4	2.4	45.1	1.7	12.8	910	1,500	2,570
24T	1.5	7	1.7	0.6	42.9	0.4	2.6	50.0	1.8	12.8	910	1,500	3,150
30T	1.5	7	1.7	0.6	47.8	0.4	2.8	55.3	2.0	12.8	910	1,500	3,830
32T	1.5	7	1.7	0.6	49.6	0.4	2.9	57.3	2.0	12.8	910	1,500	4,080
37T	1.5	7	1.7	0.6	52.3	0.4	3.0	60.2	2.1	12.8	910	1,500	4,600



Cable Designation

250V B10I, 250V B1CI, 250V B10I(c), 250V B1CI(c)

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Fire resistance : IEC 60331-21(90min)
IEC 60331-1,-2(120min)
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or
IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2
	Fire resisting layer	B	- Mica/glass tape
	Insulation		- XLPE as per IEC 60092-351
	Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad - Twisted pairs/triads shall be cabled
	Cabling		- Flame retardant & non-hygroscopic fillers may be used - Suitable tape(s) may be applied on the cabled core - A Filler may be applied to obtain a circular Cable
	Collective screen	(c)	- Screened by AL/PS tape with tinned copper drain wire - A suitable tape may be applied on the collective screen - In case of 250V B10I cable, collective screen is omitted
	Inner sheath	I	- SHF1 as per IEC 60092-359
	Armor	O (C)	- Braid of plain annealed copper wire(O) or galvanized steel wire(C) - Coverage density : Min. 90%
	Outer sheath	I	- SHF1 as per IEC 60092-359 - Outer sheath color : Black.
	Core identification		- Colored insulation plus Arabic number printing on the insulation • Pair : White, Black • Triad : White, Red, Black

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

Fire resistance

Instrumentation Cable

250V BIOI, 250V BICI, 250V BIOI(c), 250V BICI(c)

No. of Pairs	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km	
1P	0.75	7	1.2	0.5	1.0	8.3	0.3	0.8	11.8	0.7	26.0	1,030	1,500	200
2P	0.75	7	1.2	0.5	1.2	12.7	0.3	1.0	16.2	0.8	26.0	1,030	1,500	320
3P	0.75	7	1.2	0.5	1.2	13.5	0.3	1.0	17.0	0.8	26.0	1,030	1,500	360
4P	0.75	7	1.2	0.5	1.3	14.6	0.3	1.0	18.1	0.8	26.0	1,030	1,500	420
7P	0.75	7	1.2	0.5	1.4	18.3	0.3	1.1	22.0	1.0	26.0	1,030	1,500	600
8P	0.75	7	1.2	0.5	1.5	19.6	0.3	1.1	23.3	1.0	26.0	1,030	1,500	670
10P	0.75	7	1.2	0.5	1.6	22.5	0.3	1.2	26.4	1.1	26.0	1,030	1,500	800
12P	0.75	7	1.2	0.5	1.6	23.3	0.3	1.2	27.2	1.1	26.0	1,030	1,500	870
14P	0.75	7	1.2	0.5	1.6	24.2	0.3	1.2	28.1	1.1	26.0	1,030	1,500	950
16P	0.75	7	1.2	0.5	1.7	26.1	0.3	1.3	30.2	1.2	26.0	1,030	1,500	1,070
19P	0.75	7	1.2	0.5	1.7	27.3	0.3	1.3	31.4	1.2	26.0	1,030	1,500	1,190
24P	0.75	7	1.2	0.5	1.9	31.2	0.4	1.4	35.9	1.4	26.0	1,030	1,500	1,550
30P	0.75	7	1.2	0.5	2.0	34.9	0.4	1.5	39.8	1.5	26.0	1,030	1,500	1,860
32P	0.75	7	1.2	0.5	2.0	35.4	0.4	1.5	40.3	1.5	26.0	1,030	1,500	1,930
37P	0.75	7	1.2	0.5	2.1	37.4	0.4	1.6	42.5	1.6	26.0	1,030	1,500	2,160
1P	1.0	7	1.4	0.5	1.1	8.9	0.3	0.9	12.4	0.7	19.2	920	1,500	220
2P	1.0	7	1.4	0.5	1.2	13.3	0.3	1.0	16.8	0.8	19.2	920	1,500	350
3P	1.0	7	1.4	0.5	1.3	14.5	0.3	1.0	18.0	0.8	19.2	920	1,500	410
4P	1.0	7	1.4	0.5	1.3	15.4	0.3	1.0	18.9	0.9	19.2	920	1,500	460
7P	1.0	7	1.4	0.5	1.5	19.5	0.3	1.1	23.2	1.0	19.2	920	1,500	680
8P	1.0	7	1.4	0.5	1.5	20.8	0.3	1.2	24.7	1.0	19.2	920	1,500	760
10P	1.0	7	1.4	0.5	1.6	23.8	0.3	1.2	27.7	1.1	19.2	920	1,500	900
12P	1.0	7	1.4	0.5	1.7	24.9	0.3	1.3	29.0	1.2	19.2	920	1,500	1,010
14P	1.0	7	1.4	0.5	1.7	25.8	0.3	1.3	29.9	1.2	19.2	920	1,500	1,100
16P	1.0	7	1.4	0.5	1.8	27.9	0.3	1.3	32.0	1.3	19.2	920	1,500	1,230
19P	1.0	7	1.4	0.5	1.8	29.1	0.3	1.4	33.4	1.3	19.2	920	1,500	1,380
24P	1.0	7	1.4	0.5	2.0	33.2	0.4	1.5	38.1	1.4	19.2	920	1,500	1,790
30P	1.0	7	1.4	0.5	2.1	37.2	0.4	1.6	42.3	1.6	19.2	920	1,500	2,160
32P	1.0	7	1.4	0.5	2.1	37.8	0.4	1.6	42.9	1.6	19.2	920	1,500	2,240
37P	1.0	7	1.4	0.5	2.2	39.8	0.4	1.6	44.9	1.6	19.2	920	1,500	2,490
1P	1.5	7	1.7	0.6	1.1	9.9	0.3	0.9	13.4	0.7	12.8	910	1,500	250
2P	1.5	7	1.7	0.6	1.3	15.2	0.3	1.0	18.7	0.9	12.8	910	1,500	420
3P	1.5	7	1.7	0.6	1.3	16.3	0.3	1.0	19.8	0.9	12.8	910	1,500	490
4P	1.5	7	1.7	0.6	1.4	17.6	0.3	1.1	21.3	0.9	12.8	910	1,500	580
7P	1.5	7	1.7	0.6	1.6	22.3	0.3	1.2	26.2	1.1	12.8	910	1,500	860
8P	1.5	7	1.7	0.6	1.6	23.8	0.3	1.2	27.7	1.1	12.8	910	1,500	950
10P	1.5	7	1.7	0.6	1.7	27.2	0.3	1.3	31.3	1.2	12.8	910	1,500	1,140
12P	1.5	7	1.7	0.6	1.8	28.5	0.3	1.3	32.6	1.3	12.8	910	1,500	1,270
14P	1.5	7	1.7	0.6	1.8	29.6	0.3	1.4	33.9	1.3	12.8	910	1,500	1,410
16P	1.5	7	1.7	0.6	1.9	31.9	0.4	1.4	36.6	1.4	12.8	910	1,500	1,660
19P	1.5	7	1.7	0.6	2.0	33.6	0.4	1.5	38.5	1.5	12.8	910	1,500	1,880
24P	1.5	7	1.7	0.6	2.1	38.1	0.4	1.6	43.2	1.6	12.8	910	1,500	2,300
30P	1.5	7	1.7	0.6	2.3	42.8	0.4	1.7	48.1	1.7	12.8	910	1,500	2,790
32P	1.5	7	1.7	0.6	2.3	43.5	0.4	1.7	48.8	1.8	12.8	910	1,500	2,900
37P	1.5	7	1.7	0.6	2.4	45.9	0.4	1.8	51.4	1.8	12.8	910	1,500	3,260

250V BIOI, 250V BICI, 250V BIOI(c), 250V BICI(c)

No. of Triads	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	sqmm	ea.	mm	mm	mm	mm	mm	mm	±mm	mm	Ω/km	MΩ - km	V/5min	kg/km
1T	0.75	7	1.2	0.5	1.1	8.9	0.3	0.9	12.4	0.7	26.0	1,030	1,500	230
2T	0.75	7	1.2	0.5	1.2	13.7	0.3	1.0	17.2	0.8	26.0	1,030	1,500	370
3T	0.75	7	1.2	0.5	1.3	14.8	0.3	1.0	18.3	0.8	26.0	1,030	1,500	440
4T	0.75	7	1.2	0.5	1.3	16.2	0.3	1.0	19.7	0.9	26.0	1,030	1,500	510
7T	0.75	7	1.2	0.5	1.5	21.2	0.3	1.2	25.1	1.1	26.0	1,030	1,500	790
8T	0.75	7	1.2	0.5	1.6	23.2	0.3	1.2	27.1	1.1	26.0	1,030	1,500	900
10T	0.75	7	1.2	0.5	1.7	26.2	0.3	1.3	30.3	1.2	26.0	1,030	1,500	1,060
12T	0.75	7	1.2	0.5	1.8	27.9	0.3	1.3	32.0	1.3	26.0	1,030	1,500	1,200
14T	0.75	7	1.2	0.5	1.8	29.0	0.3	1.4	33.3	1.3	26.0	1,030	1,500	1,320
16T	0.75	7	1.2	0.5	1.9	31.0	0.4	1.4	35.7	1.4	26.0	1,030	1,500	1,560
19T	0.75	7	1.2	0.5	2.0	33.5	0.4	1.5	38.4	1.5	26.0	1,030	1,500	1,790
24T	0.75	7	1.2	0.5	2.1	37.1	0.4	1.6	42.2	1.6	26.0	1,030	1,500	2,150
30T	0.75	7	1.2	0.5	2.3	41.3	0.4	1.7	46.6	1.7	26.0	1,030	1,500	2,590
32T	0.75	7	1.2	0.5	2.3	42.7	0.4	1.7	48.0	1.7	26.0	1,030	1,500	2,720
37T	0.75	7	1.2	0.5	2.4	44.9	0.4	1.8	50.4	1.8	26.0	1,030	1,500	3,050
1T	1.0	7	1.4	0.5	1.1	9.4	0.3	0.9	12.9	0.7	19.2	920	1,500	260
2T	1.0	7	1.4	0.5	1.3	14.8	0.3	1.0	18.3	0.8	19.2	920	1,500	420
3T	1.0	7	1.4	0.5	1.3	15.7	0.3	1.0	19.2	0.9	19.2	920	1,500	490
4T	1.0	7	1.4	0.5	1.4	17.5	0.3	1.1	21.2	0.9	19.2	920	1,500	600
7T	1.0	7	1.4	0.5	1.6	22.9	0.3	1.2	26.8	1.1	19.2	920	1,500	920
8T	1.0	7	1.4	0.5	1.7	24.9	0.3	1.3	29.0	1.2	19.2	920	1,500	1,040
10T	1.0	7	1.4	0.5	1.8	28.3	0.3	1.3	32.4	1.3	19.2	920	1,500	1,230
12T	1.0	7	1.4	0.5	1.8	29.8	0.3	1.4	34.1	1.3	19.2	920	1,500	1,380
14T	1.0	7	1.4	0.5	1.9	31.2	0.4	1.4	35.9	1.4	19.2	920	1,500	1,620
16T	1.0	7	1.4	0.5	2.0	33.3	0.4	1.5	38.2	1.4	19.2	920	1,500	1,820
19T	1.0	7	1.4	0.5	2.1	36.0	0.4	1.5	40.9	1.5	19.2	920	1,500	2,070
24T	1.0	7	1.4	0.5	2.2	39.9	0.4	1.6	45.0	1.7	19.2	920	1,500	2,490
30T	1.0	7	1.4	0.5	2.4	44.4	0.4	1.8	49.9	1.8	19.2	920	1,500	3,030
32T	1.0	7	1.4	0.5	2.4	45.9	0.4	1.8	51.4	1.8	19.2	920	1,500	3,190
37T	1.0	7	1.4	0.5	2.5	48.3	0.4	1.9	54.0	1.9	19.2	920	1,500	3,580
1T	1.5	7	1.7	0.6	1.1	10.5	0.3	0.9	14.0	0.7	12.8	910	1,500	300
2T	1.5	7	1.7	0.6	1.4	17.0	0.3	1.1	20.7	0.9	12.8	910	1,500	530
3T	1.5	7	1.7	0.6	1.4	18.0	0.3	1.1	21.7	1.0	12.8	910	1,500	620
4T	1.5	7	1.7	0.6	1.5	20.0	0.3	1.1	23.7	1.0	12.8	910	1,500	750
7T	1.5	7	1.7	0.6	1.7	26.2	0.3	1.3	30.3	1.2	12.8	910	1,500	1,170
8T	1.5	7	1.7	0.6	1.8	28.6	0.3	1.3	32.7	1.3	12.8	910	1,500	1,320
10T	1.5	7	1.7	0.6	1.9	32.4	0.4	1.5	37.3	1.4	12.8	910	1,500	1,670
12T	1.5	7	1.7	0.6	2.0	34.4	0.4	1.5	39.3	1.5	12.8	910	1,500	1,880
14T	1.5	7	1.7	0.6	2.1	36.1	0.4	1.5	41.0	1.5	12.8	910	1,500	2,090
16T	1.5	7	1.7	0.6	2.2	38.5	0.4	1.6	43.6	1.6	12.8	910	1,500	2,350
19T	1.5	7	1.7	0.6	2.3	41.6	0.4	1.7	46.9	1.7	12.8	910	1,500	2,700
24T	1.5	7	1.7	0.6	2.4	46.1	0.4	1.8	51.6	1.8	12.8	910	1,500	3,260
30T	1.5	7	1.7	0.6	2.6	51.2	0.4	1.9	56.9	2.0	12.8	910	1,500	3,940
32T	1.5	7	1.7	0.6	2.7	53.2	0.4	2.0	59.1	2.1	12.8	910	1,500	4,210
37T	1.5	7	1.7	0.6	2.8	55.9	0.4	2.0	61.8	2.2	12.8	910	1,500	4,690

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Fire resistance

Instrumentation Cable



Cable Designation

250V BIOI(i), 250V BICI(i), 250V BIOI(i&c), 250V BICI(i&c)

Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, XLPE
- Sheath material : IEC 60092-359, SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Fire resistance : IEC 60331-1(90min)
IEC 60331-1,-2(120min)
- Halogen content : IEC 60754-1, 0.5%↓
- Smoke emission : IEC 61034, 60%↑
- Cold bend/impact : CSA C22.2 No. 2556 or
IEC 60092-350 Annex.E Method 1(-40°C / -35°C)
- Max. rated conductor temperature : 90°C

Construction

Sectional view	Classification	Code	Construction detail
	Conductor		- Stranded plain annealed copper wires as per IEC 60228, Class 2
	Fire resisting layer	B	- Mica/glass tape
	Insulation		- XLPE as per IEC 60092-351
	Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad
	Individual screen	(i)	- Screened by AL/PS tape with tinned copper drain wire
	Cabling		- Each pair/triad is wrapped with polyester tape to prevent electrical contact with adjacent pairs/triads
	Collective screen	(c)	- Screened pairs/triads shall be cabled
	Inner covering	I	- Flame retardant & non-hygroscopic fillers may be used
	Armor	O (C)	- Suitable tape(s) may be applied on the cabled core
	Outer sheath	I	- A Filler may be applied to obtain a circular Cable
Core identification		- Screened by AL/PS tape with tinned copper drain wire	
			- A suitable tape may be applied on the collective screen
			- In case of 250V BFOI(i) cable, collective screen is omitted
			- SHF1 as per IEC 60092-359
			- Braid of plain annealed copper wire(O) or galvanized steel wire(C)
			- Coverage density : Min. 90%
			- SHF1 as per IEC 60092-359
			- Outer sheath color : Black
			- Colored insulation plus Arabic number printing on the insulation
			• Pair : White, Black • Triad : White, Red, Black

Note. The other color of sheath and insulation may be applicable when purchaser required.
Stranded tinned annealed copper wire as per IEC 60228, Class 2 may be applicable when purchaser required.

250V BIOI(i), 250V BICI(i), 250V BIOI(i&c), 250V BICI(i&c)

No. of Pairs	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	mm	±mm	Ω/km	MΩ - km	V/5min	kg/km	
1P	0.75	7	1.2	0.5	1.0	8.3	0.3	0.8	11.8	0.7	26.0	1,030	1,500	200
2P	0.75	7	1.2	0.5	1.2	13.5	0.3	1.0	17.0	0.8	26.0	1,030	1,500	360
3P	0.75	7	1.2	0.5	1.3	14.5	0.3	1.0	18.0	0.8	26.0	1,030	1,500	420
4P	0.75	7	1.2	0.5	1.3	15.8	0.3	1.0	19.3	0.9	26.0	1,030	1,500	480
7P	0.75	7	1.2	0.5	1.4	19.1	0.3	1.1	22.8	1.0	26.0	1,030	1,500	680
8P	0.75	7	1.2	0.5	1.5	21.1	0.3	1.2	25.0	1.1	26.0	1,030	1,500	780
10P	0.75	7	1.2	0.5	1.6	24.0	0.3	1.2	27.9	1.1	26.0	1,030	1,500	920
12P	0.75	7	1.2	0.5	1.7	25.2	0.3	1.3	29.3	1.2	26.0	1,030	1,500	1,040
14P	0.75	7	1.2	0.5	1.7	26.4	0.3	1.3	30.5	1.2	26.0	1,030	1,500	1,140
16P	0.75	7	1.2	0.5	1.8	28.4	0.3	1.3	32.5	1.3	26.0	1,030	1,500	1,270
19P	0.75	7	1.2	0.5	1.8	29.3	0.3	1.4	33.6	1.3	26.0	1,030	1,500	1,420
24P	0.75	7	1.2	0.5	2.0	34.3	0.4	1.5	39.2	1.5	26.0	1,030	1,500	1,870
30P	0.75	7	1.2	0.5	2.1	36.6	0.4	1.6	41.7	1.6	26.0	1,030	1,500	2,180
32P	0.75	7	1.2	0.5	2.1	37.2	0.4	1.6	42.3	1.6	26.0	1,030	1,500	2,270
37P	0.75	7	1.2	0.5	2.2	39.3	0.4	1.6	44.4	1.6	26.0	1,030	1,500	2,530
1P	1.0	7	1.4	0.5	1.1	8.9	0.3	0.9	12.4	0.7	19.2	920	1,500	220
2P	1.0	7	1.4	0.5	1.3	14.4	0.3	1.0	17.9	0.8	19.2	920	1,500	400
3P	1.0	7	1.4	0.5	1.3	15.2	0.3	1.0	18.7	0.9	19.2	920	1,500	460
4P	1.0	7	1.4	0.5	1.4	16.9	0.3	1.1	20.6	0.9	19.2	920	1,500	550
7P	1.0	7	1.4	0.5	1.5	20.3	0.3	1.1	24.0	1.0	19.2	920	1,500	770
8P	1.0	7	1.4	0.5	1.6	22.5	0.3	1.2	26.4	1.1	19.2	920	1,500	890
10P	1.0	7	1.4	0.5	1.7	25.6	0.3	1.3	29.7	1.2	19.2	920	1,500	1,060
12P	1.0	7	1.4	0.5	1.7	26.6	0.3	1.3	30.7	1.2	19.2	920	1,500	1,180
14P	1.0	7	1.4	0.5	1.8	28.1	0.3	1.3	32.2	1.3	19.2	920	1,500	1,310
16P	1.0	7	1.4	0.5	1.8	30.0	0.3	1.4	34.3	1.3	19.2	920	1,500	1,470
19P	1.0	7	1.4	0.5	1.9	31.2	0.4	1.4	35.9	1.4	19.2	920	1,500	1,720
24P	1.0	7	1.4	0.5	2.1	36.5	0.4	1.6	41.6	1.5	19.2	920	1,500	2,170
30P	1.0	7	1.4	0.5	2.2	38.9	0.4	1.6	44.0	1.6	19.2	920	1,500	2,520
32P	1.0	7	1.4	0.5	2.2	39.6	0.4	1.6	44.7	1.6	19.2	920	1,500	2,630
37P	1.0	7	1.4	0.5	2.3	41.7	0.4	1.7	47.0	1.7	19.2	920	1,500	2,960
1P	1.5	7	1.7	0.6	1.1	9.9	0.3	0.9	13.4	0.7	12.8	910	1,500	250
2P	1.5	7	1.7	0.6	1.3	16.1	0.3	1.0	19.6	0.9	12.8	910	1,500	460
3P	1.5	7	1.7	0.6	1.4	17.3	0.3	1.1	21.0	0.9	12.8	910	1,500	560
4P	1.5	7	1.7	0.6	1.4	19.0	0.3	1.1	22.7	1.0	12.8	910	1,500	660
7P	1.5	7	1.7	0.6	1.6	23.1	0.3	1.2	27.0	1.1	12.8	910	1,500	960
8P	1.5	7	1.7	0.6	1.7	25.6	0.3	1.3	29.7	1.2	12.8	910	1,500	1,110
10P	1.5	7	1.7	0.6	1.8	29.1	0.3	1.4	33.4	1.3	12.8	910	1,500	1,320
12P	1.5	7	1.7	0.6	1.9	30.5	0.4	1.4	35.2	1.4	12.8	910	1,500	1,560
14P	1.5	7	1.7	0.6	1.9	32.0	0.4	1.4	36.7	1.4	12.8	910	1,500	1,720
16P	1.5	7	1.7	0.6	2.0	34.4	0.4	1.5	39.3	1.5	12.8	910	1,500	1,940
19P	1.5	7	1.7	0.6	2.1	35.7	0.4	1.5	40.6	1.5	12.8	910	1,500	2,160
24P	1.5	7	1.7	0.6	2.3	41.8	0.4	1.7	47.1	1.7	12.8	910	1,500	2,730
30P	1.5	7	1.7	0.6	2.4	44.6	0.4	1.8	50.1	1.8	12.8	910	1,500	3,210
32P	1.5	7	1.7	0.6	2.4	45.3	0.4	1.8	50.8	1.8	12.8	910	1,500	3,340
37P	1.5	7	1.7	0.6	2.5	47.8	0.4	1.8	53.3	1.9	12.8	910	1,500	3,740

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

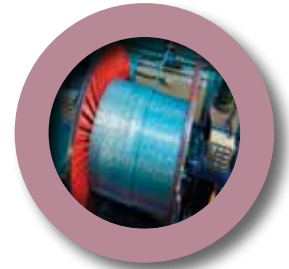
Technical data

Fire resistance

Instrumentation Cable

250V BIOI(i), 250V BICI(j), 250V BIOI(i&c), 250V BICI(i&c)

No. of Triads	Conductor			Thickness of Insulation	Thickness of inner sheath	Nominal dia. of inner sheath	Dia. of wire for armor	Thickness of outer sheath	Overall diameter		Conductor Resistance (at 20°C) (Max.)	Insulation Resistance (at 20°C) (Min.)	Test Voltage	Cable Weight Approx.
	Nominal Area	Min. Number of wires	Max. Dia.						Nominal	Tolerance				
No.	SQMM	ea.	mm	mm	mm	mm	mm	mm	±mm	mm	Ω/km	MΩ - km	V/5min	kg/km
1T	0.75	7	1.2	0.5	1.1	8.9	0.3	0.9	12.4	0.7	26.0	1,030	1,500	230
2T	0.75	7	1.2	0.5	1.3	14.5	0.3	1.0	18.0	0.8	26.0	1,030	1,500	410
3T	0.75	7	1.2	0.5	1.3	15.4	0.3	1.0	18.9	0.9	26.0	1,030	1,500	480
4T	0.75	7	1.2	0.5	1.4	17.1	0.3	1.1	20.8	0.9	26.0	1,030	1,500	580
7T	0.75	7	1.2	0.5	1.6	22.3	0.3	1.2	26.2	1.1	26.0	1,030	1,500	890
8T	0.75	7	1.2	0.5	1.6	24.1	0.3	1.2	28.0	1.1	26.0	1,030	1,500	990
10T	0.75	7	1.2	0.5	1.7	27.3	0.3	1.3	31.4	1.2	26.0	1,030	1,500	1,170
12T	0.75	7	1.2	0.5	1.8	29.0	0.3	1.4	33.3	1.3	26.0	1,030	1,500	1,340
14T	0.75	7	1.2	0.5	1.9	30.4	0.4	1.4	35.1	1.4	26.0	1,030	1,500	1,570
16T	0.75	7	1.2	0.5	1.9	32.3	0.4	1.5	37.2	1.4	26.0	1,030	1,500	1,750
19T	0.75	7	1.2	0.5	2.0	34.9	0.4	1.5	39.8	1.5	26.0	1,030	1,500	1,990
24T	0.75	7	1.2	0.5	2.2	38.9	0.4	1.6	44.0	1.6	26.0	1,030	1,500	2,420
30T	0.75	7	1.2	0.5	2.3	43.0	0.4	1.7	48.3	1.7	26.0	1,030	1,500	2,900
32T	0.75	7	1.2	0.5	2.4	44.7	0.4	1.8	50.2	1.8	26.0	1,030	1,500	3,100
37T	0.75	7	1.2	0.5	2.5	47.0	0.4	1.8	52.5	1.9	26.0	1,030	1,500	3,450
1T	1.0	7	1.4	0.5	1.1	9.4	0.3	0.9	12.9	0.7	19.2	920	1,500	260
2T	1.0	7	1.4	0.5	1.3	15.3	0.3	1.0	18.8	0.9	19.2	920	1,500	450
3T	1.0	7	1.4	0.5	1.3	16.3	0.3	1.0	19.8	0.9	19.2	920	1,500	540
4T	1.0	7	1.4	0.5	1.4	18.1	0.3	1.1	21.8	1.0	19.2	920	1,500	660
7T	1.0	7	1.4	0.5	1.6	23.7	0.3	1.2	27.6	1.1	19.2	920	1,500	1,010
8T	1.0	7	1.4	0.5	1.7	25.9	0.3	1.3	30.0	1.2	19.2	920	1,500	1,160
10T	1.0	7	1.4	0.5	1.8	29.3	0.3	1.4	33.6	1.3	19.2	920	1,500	1,370
12T	1.0	7	1.4	0.5	1.9	31.2	0.4	1.4	35.9	1.4	19.2	920	1,500	1,640
14T	1.0	7	1.4	0.5	1.9	32.5	0.4	1.5	37.4	1.4	19.2	920	1,500	1,820
16T	1.0	7	1.4	0.5	2.0	34.6	0.4	1.5	39.5	1.5	19.2	920	1,500	2,020
19T	1.0	7	1.4	0.5	2.1	37.4	0.4	1.6	42.5	1.6	19.2	920	1,500	2,330
24T	1.0	7	1.4	0.5	2.3	41.7	0.4	1.7	47.0	1.7	19.2	920	1,500	2,830
30T	1.0	7	1.4	0.5	2.4	46.1	0.4	1.8	51.6	1.8	19.2	920	1,500	3,400
32T	1.0	7	1.4	0.5	2.5	48.0	0.4	1.8	53.5	1.9	19.2	920	1,500	3,610
37T	1.0	7	1.4	0.5	2.6	50.4	0.4	1.9	56.1	2.0	19.2	920	1,500	4,050
1T	1.5	7	1.7	0.6	1.1	10.5	0.3	0.9	14.0	0.7	12.8	910	1,500	300
2T	1.5	7	1.7	0.6	1.4	17.5	0.3	1.1	21.2	0.9	12.8	910	1,500	560
3T	1.5	7	1.7	0.6	1.4	18.6	0.3	1.1	22.3	1.0	12.8	910	1,500	670
4T	1.5	7	1.7	0.6	1.5	20.7	0.3	1.2	24.6	1.0	12.8	910	1,500	820
7T	1.5	7	1.7	0.6	1.7	27.1	0.3	1.3	31.2	1.2	12.8	910	1,500	1,270
8T	1.5	7	1.7	0.6	1.8	29.6	0.3	1.4	33.9	1.3	12.8	910	1,500	1,450
10T	1.5	7	1.7	0.6	2.0	33.7	0.4	1.5	38.6	1.5	12.8	910	1,500	1,830
12T	1.5	7	1.7	0.6	2.1	35.8	0.4	1.5	40.7	1.5	12.8	910	1,500	2,070
14T	1.5	7	1.7	0.6	2.1	37.3	0.4	1.6	42.4	1.6	12.8	910	1,500	2,300
16T	1.5	7	1.7	0.6	2.2	39.8	0.4	1.6	44.9	1.6	12.8	910	1,500	2,570
19T	1.5	7	1.7	0.6	2.3	43.0	0.4	1.7	48.3	1.7	12.8	910	1,500	2,960
24T	1.5	7	1.7	0.6	2.5	47.9	0.4	1.8	53.4	1.9	12.8	910	1,500	3,610
30T	1.5	7	1.7	0.6	2.7	53.2	0.4	2.0	59.1	2.1	12.8	910	1,500	4,390
32T	1.5	7	1.7	0.6	2.8	55.2	0.4	2.0	61.1	2.1	12.8	910	1,500	4,660
37T	1.5	7	1.7	0.6	2.9	58.1	0.4	2.1	64.2	2.2	12.8	910	1,500	5,230



Technical Data



Current Ratings for Continuous	78
Capacitance, Inductance, Reactance, Impedance data	79 ~ 85
Short Circuit Current Ratings	85
Installation Recommendations	86 ~ 89
Handling, Installation Method & Notice	90
Certificates Approved	91



Technical Data

1. Current Ratings for Continuous

Conductor temperature	90°C		
	Nominal cross-sectional Area (mm ²)	Single core (A)	Two core (A)
1	18	15	13
1.5	23	20	16
2.5	30	26	21
4	40	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	273
185	444	377	311
240	522	444	366
300	601	511	420

Note)

- Maximum permissible service temperature of the conductor is 90°C
- The current ratings given above are based on an ambient air temperature of 45°C
- The current ratings given above are for 6 cables or 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 correction factor 0.85. In case of cables not being loaded simultaneously, consideration of the actual loading appertaining is permitted.
- For cables with more than 4 core cables, the current ratings are given by the Formula;

$$I = \frac{I_1}{\sqrt[3]{N}}$$

Where, I₁: Current for single core cable
N : Number of cores

No. of cores	1.0SQMM	1.5SQMM	2.5SQMM
5	11	13	18
7	9	12	16
9	9	11	14
12	8	10	13
14	7	10	12
16	7	9	12
19	7	9	11
24	6	8	10
30	6	7	10
37	5	7	9
44	5	7	8

5. Correction factors for various ambient air temperature

Maximum conductor Temperature °C	Correction for various ambient air temperature									
	35	40	45	50	55	60	65	70	75	80
90	1.10	1.05	1.00	0.94	0.88	0.82	0.74	0.67	0.58	0.47

2. Capacitance, Inductance, Reactance, Impedance data

3.6/6kV TFOI

Nominal Area	Single core cable						Three core cable					
	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz
mm ²	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km
10	0.194	0.437	0.137	0.165	2.337	2.339	0.194	0.320	0.101	0.121	2.336	2.337
16	0.222	0.412	0.130	0.155	1.472	1.475	0.222	0.304	0.095	0.114	1.469	1.471
25	0.256	0.389	0.122	0.147	0.935	0.939	0.256	0.288	0.091	0.109	0.931	0.933
35	0.282	0.374	0.118	0.141	0.678	0.683	0.282	0.279	0.088	0.105	0.674	0.676
50	0.318	0.358	0.112	0.135	0.506	0.512	0.318	0.269	0.085	0.101	0.501	0.504
70	0.362	0.342	0.107	0.129	0.358	0.365	0.362	0.259	0.081	0.098	0.351	0.355
95	0.410	0.329	0.103	0.124	0.267	0.276	0.410	0.251	0.079	0.095	0.258	0.264
120	0.450	0.319	0.100	0.120	0.219	0.229	0.450	0.245	0.077	0.093	0.210	0.216
150	0.483	0.311	0.098	0.117	0.186	0.197	0.483	0.242	0.076	0.091	0.175	0.182
185	0.538	0.305	0.096	0.115	0.159	0.171	0.538	0.236	0.074	0.089	0.147	0.155
240	0.574	0.299	0.094	0.113	0.135	0.149	0.574	0.233	0.073	0.088	0.122	0.131
300	0.595	0.294	0.092	0.111	0.121	0.135	-	-	-	-	-	-
400	0.633	0.288	0.091	0.109	0.109	0.125	-	-	-	-	-	-
500	0.650	0.284	0.089	0.107	0.101	0.117	-	-	-	-	-	-
630	0.732	0.276	0.087	0.104	0.094	0.111	-	-	-	-	-	-

6/10kV TFOI

Nominal Area	Single core cable						Three core cable					
	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz
mm ²	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km
16	0.179	0.431	0.135	0.162	1.473	1.475	0.179	0.332	0.104	0.125	1.470	1.472
25	0.204	0.406	0.128	0.153	0.936	0.940	0.204	0.314	0.099	0.118	0.932	0.935
35	0.224	0.391	0.123	0.147	0.679	0.684	0.224	0.303	0.095	0.114	0.675	0.678
50	0.250	0.374	0.117	0.141	0.507	0.513	0.250	0.291	0.091	0.110	0.502	0.505
70	0.284	0.357	0.112	0.134	0.360	0.367	0.284	0.279	0.088	0.105	0.353	0.358
95	0.319	0.342	0.107	0.129	0.269	0.278	0.319	0.269	0.084	0.101	0.260	0.266
120	0.349	0.331	0.104	0.125	0.221	0.232	0.349	0.262	0.082	0.099	0.212	0.219
150	0.375	0.326	0.102	0.123	0.188	0.200	0.375	0.257	0.081	0.097	0.178	0.185
185	0.414	0.319	0.100	0.120	0.161	0.174	0.414	0.250	0.079	0.094	0.149	0.158
240	0.457	0.309	0.097	0.116	0.137	0.152	0.457	0.245	0.077	0.092	0.124	0.134
300	0.503	0.300	0.094	0.113	0.122	0.137	-	-	-	-	-	-
400	0.567	0.293	0.092	0.110	0.110	0.126	-	-	-	-	-	-
500	0.617	0.286	0.090	0.108	0.102	0.118	-	-	-	-	-	-
630	0.694	0.277	0.087	0.105	0.095	0.111	-	-	-	-	-	-

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Technical Data

8.7/15kV TFOI

Nominal Area	Single core cable						Three core cable					
	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz
mm ²	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km
25	0.167	0.425	0.134	0.160	0.937	0.941	0.167	0.341	0.107	0.129	0.933	0.936
35	0.183	0.409	0.129	0.154	0.680	0.686	0.183	0.328	0.103	0.124	0.676	0.680
50	0.203	0.391	0.123	0.147	0.509	0.515	0.203	0.314	0.099	0.119	0.503	0.508
70	0.229	0.373	0.117	0.141	0.361	0.370	0.229	0.300	0.094	0.113	0.355	0.360
95	0.256	0.360	0.113	0.136	0.271	0.281	0.256	0.289	0.091	0.109	0.262	0.269
120	0.279	0.348	0.109	0.131	0.224	0.235	0.279	0.280	0.088	0.106	0.214	0.222
150	0.299	0.342	0.107	0.129	0.191	0.204	0.299	0.274	0.086	0.103	0.180	0.189
185	0.328	0.331	0.104	0.125	0.164	0.178	0.328	0.267	0.084	0.100	0.152	0.161
240	0.362	0.320	0.101	0.121	0.140	0.155	0.362	0.259	0.081	0.098	0.127	0.138
300	0.397	0.313	0.098	0.118	0.125	0.141	-	-	-	-	-	-
400	0.446	0.302	0.095	0.114	0.113	0.129	-	-	-	-	-	-
500	0.483	0.296	0.093	0.111	0.105	0.121	-	-	-	-	-	-
630	0.542	0.287	0.090	0.108	0.098	0.115	-	-	-	-	-	-

3.6/6kV TIOI, 3.6/6kV TICl

Nominal Area	Single core cable						Three core cable					
	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz
mm ²	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km
10	0.194	0.433	0.136	0.163	2.337	2.339	0.194	0.320	0.101	0.121	2.336	2.337
16	0.222	0.408	0.128	0.154	1.472	1.474	0.222	0.304	0.095	0.114	1.469	1.471
25	0.256	0.389	0.122	0.147	0.935	0.939	0.256	0.288	0.091	0.109	0.931	0.933
35	0.282	0.373	0.117	0.141	0.678	0.683	0.282	0.279	0.088	0.105	0.674	0.676
50	0.318	0.360	0.113	0.136	0.506	0.512	0.318	0.269	0.085	0.101	0.501	0.504
70	0.362	0.344	0.108	0.130	0.358	0.365	0.362	0.259	0.081	0.098	0.351	0.355
95	0.410	0.330	0.104	0.124	0.267	0.276	0.410	0.251	0.079	0.095	0.258	0.264
120	0.450	0.321	0.101	0.121	0.220	0.230	0.450	0.245	0.077	0.093	0.210	0.216
150	0.483	0.314	0.099	0.118	0.186	0.197	0.483	0.242	0.076	0.091	0.175	0.182
185	0.538	0.305	0.096	0.115	0.159	0.171	0.538	0.236	0.074	0.089	0.147	0.155
240	0.574	0.301	0.095	0.114	0.136	0.149	0.574	0.233	0.073	0.088	0.122	0.131
300	0.595	0.296	0.093	0.112	0.121	0.136	-	-	-	-	-	-
400	0.633	0.289	0.091	0.109	0.109	0.125	-	-	-	-	-	-
500	0.650	0.285	0.090	0.108	0.102	0.118	-	-	-	-	-	-
630	0.732	0.278	0.087	0.105	0.095	0.111	-	-	-	-	-	-

6/10kV TIOI, 6/10kV TICl

Nominal Area	Single core cable						Three core cable					
	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz
mm ²	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km
16	0.179	0.429	0.135	0.162	1.473	1.475	0.179	0.332	0.104	0.125	1.470	1.472
25	0.204	0.406	0.128	0.153	0.936	0.940	0.204	0.314	0.099	0.118	0.932	0.935
35	0.224	0.391	0.123	0.147	0.679	0.684	0.224	0.303	0.095	0.114	0.675	0.678
50	0.250	0.375	0.118	0.141	0.507	0.513	0.250	0.291	0.091	0.110	0.502	0.505
70	0.284	0.357	0.112	0.134	0.360	0.367	0.284	0.279	0.088	0.105	0.353	0.358
95	0.319	0.343	0.108	0.129	0.269	0.278	0.319	0.269	0.084	0.101	0.260	0.266
120	0.349	0.333	0.105	0.126	0.221	0.232	0.349	0.262	0.082	0.099	0.212	0.219
150	0.375	0.326	0.102	0.123	0.188	0.200	0.375	0.257	0.081	0.097	0.178	0.185
185	0.414	0.319	0.100	0.120	0.161	0.174	0.414	0.250	0.079	0.094	0.149	0.158
240	0.457	0.310	0.097	0.117	0.137	0.152	0.457	0.245	0.077	0.092	0.124	0.134
300	0.503	0.302	0.095	0.114	0.122	0.138	-	-	-	-	-	-
400	0.567	0.294	0.092	0.111	0.111	0.126	-	-	-	-	-	-
500	0.617	0.288	0.090	0.108	0.102	0.119	-	-	-	-	-	-
630	0.694	0.279	0.088	0.105	0.095	0.112	-	-	-	-	-	-

8.7/15kV TIOI, 8.7/15kV TICl

Nominal Area	Single core cable						Three core cable					
	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz
mm ²	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km
25	0.167	0.427	0.134	0.161	0.937	0.941	0.167	0.341	0.107	0.129	0.933	0.936
35	0.183	0.409	0.129	0.154	0.680	0.686	0.183	0.328	0.103	0.124	0.676	0.680
50	0.203	0.394	0.124	0.148	0.509	0.515	0.203	0.314	0.099	0.119	0.503	0.508
70	0.229	0.374	0.118	0.141	0.361	0.370	0.229	0.300	0.094	0.113	0.355	0.360
95	0.256	0.360	0.113	0.136	0.271	0.281	0.256	0.289	0.091	0.109	0.262	0.269
120	0.279	0.352	0.110	0.133	0.224	0.236	0.279	0.280	0.088	0.106	0.214	0.222
150	0.299	0.343	0.108	0.129	0.191	0.204	0.299	0.274	0.086	0.103	0.180	0.189
185	0.328	0.332	0.104	0.125	0.164	0.178	0.328	0.267	0.084	0.100	0.152	0.161
240	0.362	0.322	0.101	0.121	0.140	0.155	0.362	0.259	0.081	0.098	0.127	0.138
300	0.397	0.313	0.098	0.118	0.125	0.141	-	-	-	-	-	-
400	0.446	0.303	0.095	0.114	0.113	0.129	-	-	-	-	-	-
500	0.483	0.297	0.093	0.112	0.105	0.122	-	-	-	-	-	-
630	0.542	0.288	0.091	0.109	0.098	0.115	-	-	-	-	-	-

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Technical Data

0.6/1kV TI

Nominal Area	Single core cable						Three core cable					
	Capacitance C	Inductance L	Reactance X 50 Hz	Impedance Z 50 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz
mm ²	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km
1.5	0.195	0.433	0.136	0.163	15.429	15.430	0.274	0.319	0.100	0.120	15.429	15.429
2.5	0.243	0.397	0.125	0.150	9.449	9.450	0.307	0.294	0.092	0.111	9.449	9.449
4	0.284	0.370	0.116	0.139	5.879	5.880	0.349	0.279	0.088	0.105	5.879	5.879
6	0.349	0.344	0.108	0.130	3.929	3.929	0.404	0.262	0.082	0.099	3.928	3.929
10	0.418	0.320	0.100	0.121	2.336	2.337	0.457	0.250	0.078	0.094	2.335	2.335
16	0.527	0.302	0.095	0.114	1.469	1.471	0.526	0.237	0.075	0.089	1.468	1.469
25	0.522	0.291	0.091	0.110	0.931	0.933	0.548	0.238	0.075	0.090	0.930	0.931
35	0.587	0.283	0.089	0.107	0.674	0.677	0.590	0.232	0.073	0.088	0.672	0.674
50	0.630	0.273	0.086	0.103	0.501	0.504	0.639	0.229	0.072	0.086	0.499	0.501
70	0.683	0.267	0.084	0.100	0.352	0.356	0.673	0.226	0.071	0.085	0.349	0.352
95	0.794	0.259	0.081	0.098	0.262	0.267	0.738	0.221	0.069	0.083	0.258	0.262
120	0.822	0.256	0.080	0.097	0.213	0.219	0.767	0.220	0.069	0.083	0.209	0.214
150	0.768	0.255	0.080	0.096	0.180	0.188	0.738	0.222	0.070	0.084	0.176	0.182
185	0.775	0.253	0.079	0.095	0.152	0.161	0.738	0.222	0.070	0.084	0.148	0.155
240	0.812	0.251	0.079	0.094	0.127	0.138	0.767	0.220	0.069	0.083	0.122	0.130
300	0.863	0.247	0.078	0.093	0.112	0.124	0.799	0.218	0.069	0.082	0.106	0.116

0.6/1kV BI

Nominal Area	Single core cable						Three core cable					
	Capacitance C	Inductance L	Reactance X 50 Hz	Impedance Z 50 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz
mm ²	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km
1.5	0.158	0.451	0.142	0.170	15.429	15.430	0.274	0.350	0.110	0.132	15.429	15.429
2.5	0.186	0.417	0.131	0.157	9.449	9.450	0.300	0.326	0.102	0.123	9.449	9.449
4	0.225	0.385	0.121	0.145	5.879	5.880	0.325	0.302	0.095	0.114	5.879	5.879
6	0.260	0.361	0.114	0.136	3.929	3.930	0.355	0.287	0.090	0.108	3.928	3.929
10	0.312	0.335	0.105	0.126	2.336	2.337	0.404	0.271	0.085	0.102	2.335	2.336
16	0.386	0.315	0.099	0.119	1.470	1.471	0.462	0.255	0.080	0.096	1.469	1.470
25	0.405	0.305	0.096	0.115	0.932	0.934	0.492	0.252	0.079	0.095	0.930	0.932
35	0.474	0.291	0.091	0.110	0.674	0.677	0.548	0.243	0.076	0.091	0.672	0.674
50	0.499	0.285	0.089	0.107	0.502	0.505	0.556	0.240	0.075	0.090	0.499	0.502
70	0.550	0.274	0.086	0.103	0.352	0.357	0.590	0.235	0.074	0.089	0.350	0.353
95	0.637	0.265	0.083	0.100	0.262	0.268	0.639	0.229	0.072	0.086	0.259	0.263
120	0.669	0.262	0.082	0.099	0.214	0.220	0.698	0.227	0.071	0.086	0.210	0.215
150	0.645	0.262	0.082	0.099	0.181	0.189	0.661	0.228	0.072	0.086	0.176	0.183
185	0.661	0.259	0.081	0.098	0.154	0.163	0.685	0.227	0.071	0.086	0.148	0.156
240	0.701	0.255	0.080	0.096	0.128	0.139	0.710	0.225	0.071	0.085	0.122	0.131
300	0.749	0.251	0.079	0.095	0.113	0.125	0.767	0.223	0.070	0.084	0.107	0.117

0.6/1kV TFOI

Nominal Area	Single core cable						Three core cable					
	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz
mm²	µF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km	µF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km
1.5	0.195	0.474	0.149	0.179	15.429	15.430	0.274	0.319	0.100	0.120	15.429	15.429
2.5	0.243	0.435	0.137	0.164	9.449	9.450	0.307	0.294	0.092	0.111	9.449	9.449
4	0.284	0.404	0.127	0.152	5.880	5.880	0.349	0.279	0.088	0.105	5.879	5.879
6	0.349	0.377	0.118	0.142	3.929	3.930	0.404	0.262	0.082	0.099	3.928	3.929
10	0.418	0.353	0.111	0.133	2.336	2.337	0.457	0.250	0.078	0.094	2.335	2.335
16	0.527	0.327	0.103	0.123	1.470	1.472	0.526	0.237	0.075	0.089	1.468	1.469
25	0.522	0.315	0.099	0.119	0.932	0.935	0.548	0.238	0.075	0.090	0.930	0.931
35	0.587	0.302	0.095	0.114	0.675	0.678	0.590	0.232	0.073	0.088	0.672	0.674
50	0.630	0.297	0.093	0.112	0.502	0.506	0.639	0.229	0.072	0.086	0.499	0.501
70	0.683	0.287	0.090	0.108	0.353	0.358	0.673	0.226	0.071	0.085	0.349	0.352
95	0.794	0.277	0.087	0.104	0.263	0.270	0.738	0.221	0.069	0.083	0.258	0.262
120	0.822	0.271	0.085	0.102	0.215	0.222	0.767	0.220	0.069	0.083	0.209	0.214
150	0.768	0.270	0.085	0.102	0.182	0.190	0.738	0.222	0.070	0.084	0.176	0.182
185	0.775	0.266	0.084	0.100	0.155	0.164	0.738	0.222	0.070	0.084	0.148	0.155
240	0.812	0.261	0.082	0.098	0.129	0.140	0.767	0.220	0.069	0.083	0.122	0.130
300	0.863	0.257	0.081	0.097	0.114	0.126	0.799	0.218	0.069	0.082	0.106	0.116

0.6/1kV BFOI

Nominal Area	Single core cable						Three core cable					
	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz
mm²	µF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km	µF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km
1.5	0.158	0.489	0.154	0.184	15.429	15.430	0.274	0.350	0.110	0.132	15.429	15.429
2.5	0.186	0.452	0.142	0.170	9.450	9.450	0.300	0.326	0.102	0.123	9.449	9.449
4	0.225	0.417	0.131	0.157	5.880	5.880	0.325	0.302	0.095	0.114	5.879	5.879
6	0.260	0.396	0.124	0.149	3.929	3.930	0.355	0.287	0.090	0.108	3.928	3.929
10	0.312	0.365	0.115	0.138	2.336	2.337	0.404	0.271	0.085	0.102	2.335	2.336
16	0.386	0.339	0.106	0.128	1.470	1.472	0.462	0.255	0.080	0.096	1.469	1.470
25	0.405	0.325	0.102	0.123	0.933	0.935	0.492	0.252	0.079	0.095	0.930	0.932
35	0.474	0.316	0.099	0.119	0.675	0.679	0.548	0.243	0.076	0.091	0.672	0.674
50	0.499	0.305	0.096	0.115	0.503	0.507	0.556	0.240	0.075	0.090	0.499	0.502
70	0.550	0.294	0.092	0.111	0.354	0.359	0.590	0.235	0.074	0.089	0.350	0.353
95	0.637	0.283	0.089	0.107	0.264	0.270	0.639	0.229	0.072	0.086	0.259	0.263
120	0.669	0.278	0.087	0.105	0.216	0.223	0.698	0.227	0.071	0.086	0.210	0.215
150	0.645	0.275	0.086	0.103	0.183	0.191	0.661	0.228	0.072	0.086	0.176	0.183
185	0.661	0.271	0.085	0.102	0.155	0.165	0.685	0.227	0.071	0.086	0.148	0.156
240	0.701	0.265	0.083	0.100	0.130	0.141	0.710	0.225	0.071	0.085	0.122	0.131
300	0.749	0.261	0.082	0.098	0.115	0.127	0.767	0.223	0.070	0.084	0.107	0.117

HV Power Cable

LV Power & Control Cable

VFD Cable

Instrumentation & Communication Cable

Technical data

Technical Data

0.6/1kV TIOI, 0.6/1kV TICl

Nominal Area	Single core cable						Three core cable					
	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz
mm ²	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km
1.5	0.195	0.528	0.166	0.199	15.430	15.430	0.274	0.319	0.100	0.120	15.429	15.429
2.5	0.243	0.486	0.153	0.183	9.450	9.450	0.307	0.294	0.092	0.111	9.449	9.449
4	0.284	0.456	0.143	0.172	5.880	5.881	0.349	0.279	0.088	0.105	5.879	5.879
6	0.349	0.426	0.134	0.160	3.930	3.931	0.404	0.262	0.082	0.099	3.928	3.929
10	0.418	0.392	0.123	0.148	2.337	2.338	0.457	0.250	0.078	0.094	2.335	2.335
16	0.527	0.366	0.115	0.138	1.471	1.473	0.526	0.237	0.075	0.089	1.468	1.469
25	0.522	0.346	0.109	0.130	0.933	0.936	0.548	0.238	0.075	0.090	0.930	0.931
35	0.587	0.332	0.104	0.125	0.676	0.680	0.590	0.232	0.073	0.088	0.672	0.674
50	0.630	0.318	0.100	0.120	0.503	0.508	0.639	0.229	0.072	0.086	0.499	0.501
70	0.683	0.306	0.096	0.115	0.355	0.361	0.673	0.226	0.071	0.085	0.349	0.352
95	0.794	0.296	0.093	0.111	0.265	0.272	0.738	0.221	0.069	0.083	0.258	0.262
120	0.822	0.289	0.091	0.109	0.217	0.225	0.767	0.220	0.069	0.083	0.209	0.214
150	0.768	0.287	0.090	0.108	0.185	0.194	0.738	0.222	0.070	0.084	0.176	0.182
185	0.775	0.282	0.089	0.106	0.157	0.168	0.738	0.222	0.070	0.084	0.148	0.155
240	0.812	0.276	0.087	0.104	0.132	0.144	0.767	0.220	0.069	0.083	0.122	0.130
300	0.863	0.275	0.086	0.104	0.119	0.132	0.799	0.218	0.069	0.082	0.106	0.116

0.6/1kV BIOI, 0.6/1kV BICl

Nominal Area	Single core cable						Three core cable					
	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz
mm ²	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km
1.5	0.158	0.539	0.169	0.203	15.430	15.430	0.274	0.350	0.110	0.132	15.429	15.429
2.5	0.186	0.503	0.158	0.190	9.450	9.450	0.300	0.326	0.102	0.123	9.449	9.449
4	0.225	0.466	0.146	0.176	5.880	5.881	0.325	0.302	0.095	0.114	5.879	5.879
6	0.260	0.437	0.137	0.165	3.930	3.931	0.355	0.287	0.090	0.108	3.928	3.929
10	0.312	0.403	0.126	0.152	2.337	2.338	0.404	0.271	0.085	0.102	2.335	2.336
16	0.386	0.376	0.118	0.142	1.471	1.473	0.462	0.255	0.080	0.096	1.469	1.470
25	0.405	0.357	0.112	0.135	0.934	0.937	0.492	0.252	0.079	0.095	0.930	0.932
35	0.474	0.339	0.106	0.128	0.677	0.680	0.548	0.243	0.076	0.091	0.672	0.674
50	0.499	0.327	0.103	0.123	0.504	0.509	0.556	0.240	0.075	0.090	0.499	0.502
70	0.550	0.312	0.098	0.118	0.355	0.361	0.590	0.235	0.074	0.089	0.350	0.353
95	0.637	0.301	0.095	0.113	0.266	0.273	0.639	0.229	0.072	0.086	0.259	0.263
120	0.669	0.294	0.092	0.111	0.218	0.226	0.698	0.227	0.071	0.086	0.210	0.215
150	0.645	0.293	0.092	0.110	0.186	0.195	0.661	0.228	0.072	0.086	0.176	0.183
185	0.661	0.289	0.091	0.109	0.159	0.170	0.685	0.227	0.071	0.086	0.148	0.156
240	0.701	0.281	0.088	0.106	0.133	0.146	0.710	0.225	0.071	0.085	0.122	0.131
300	0.749	0.278	0.087	0.105	0.119	0.133	0.767	0.223	0.070	0.084	0.107	0.117

0.6/1kV(1.8/3kV) FX-TFOI(VFD)

Nominal Area	Single core cable						Three core cable					
	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz	Capacitance C	Inductance L	Reactance X 50 Hz	Reactance X 60 Hz	Impedance Z 50 Hz	Impedance Z 60 Hz
mm ²	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km	μF/km	mH / km	Ω/km	Ω/km	Ω/km	Ω/km
10	0.178	0.412	0.129	0.155	2.439	2.440	-	-	-	-	-	-
16	0.222	0.381	0.120	0.143	1.547	1.550	-	-	-	-	-	-
25	0.272	0.350	0.110	0.132	1.001	1.003	-	-	-	-	-	-
35	0.309	0.336	0.105	0.127	0.714	0.718	-	-	-	-	-	-
50	0.352	0.320	0.100	0.121	0.502	0.507	-	-	-	-	-	-
70	0.410	0.305	0.096	0.115	0.360	0.365	-	-	-	-	-	-
95	0.463	0.295	0.093	0.111	0.279	0.285	0.599	0.241	0.076	0.091	0.273	0.278
120	0.521	0.285	0.089	0.107	0.224	0.232	0.639	0.235	0.074	0.089	0.218	0.224
150	0.570	0.279	0.088	0.105	0.186	0.195	0.639	0.231	0.073	0.087	0.180	0.186
185	0.615	0.274	0.086	0.103	0.160	0.170	0.629	0.228	0.072	0.086	0.153	0.160
240	0.710	0.265	0.083	0.100	0.133	0.144	0.650	0.223	0.070	0.084	0.124	0.132
300	0.786	0.259	0.081	0.098	0.116	0.128	-	-	-	-	-	-

3. Short Circuit Current Ratings

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

According to ICEA P-32-382 Curves based on formula

$$I = A \times \sqrt{\frac{0.115 \log \left(\frac{T_2 + 234}{T_1 + 234} \right)}{t}}$$

- Where
- I : Short Circuit Current (kA)
 - A : Conductor area (mm²)
 - T₁ : Operating temperature (90°C)
 - T₂ : Short Circuit temperature (250°C)
 - t : Short Circuit duration (sec)

T₁ = 90, T₂ = 250

Nominal Area	Short circuit currents (kA)													
	Duration of short circuit in second													
	0.03	0.05	0.07	0.1	0.14	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
1.5	1.3	1.0	0.8	0.7	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2
2.5	2.0	1.6	1.3	1.1	0.9	0.8	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3
4	3.2	2.5	2.1	1.8	1.5	1.3	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.6
6	4.9	3.8	3.2	2.7	2.3	1.9	1.5	1.3	1.2	1.1	1.0	0.9	0.9	0.8
10	8.2	6.3	5.4	4.5	3.8	3.2	2.6	2.2	2.0	1.8	1.7	1.6	1.5	1.4
16	13.0	10.1	8.5	7.1	6.0	5.0	4.1	3.6	3.2	2.9	2.7	2.5	2.4	2.2
25	20.6	15.9	13.5	11.3	9.5	8.0	6.5	5.6	5.0	4.6	4.3	4.0	3.8	3.6
35	28.5	22.1	18.7	15.6	13.2	11.1	9.0	7.8	7.0	6.4	5.9	5.5	5.2	4.9
50	38.6	29.9	25.3	21.2	17.9	15.0	12.2	10.6	9.5	8.6	8.0	7.5	7.1	6.7
70	55.9	43.3	36.6	30.6	25.9	21.6	17.7	15.3	13.7	12.5	11.6	10.8	10.2	9.7
95	77.5	60.0	50.7	42.4	35.9	30.0	24.5	21.2	19.0	17.3	16.0	15.0	14.1	13.4
120	97.9	75.8	64.1	53.6	45.3	37.9	31.0	26.8	24.0	21.9	20.3	19.0	17.9	17.0
150	120.3	93.1	78.7	65.9	55.7	46.6	38.0	32.9	29.5	26.9	24.9	23.3	22.0	20.8
185	150.8	116.8	98.8	82.6	69.8	58.4	47.7	41.3	36.9	33.7	31.2	29.2	27.5	26.1
240	198.3	153.6	129.8	108.6	91.8	76.8	62.7	54.3	48.6	44.3	41.0	38.4	36.2	34.3
300	248.7	192.6	162.8	136.2	115.1	96.3	78.6	68.1	60.9	55.6	51.5	48.2	45.4	43.1
400	329.3	255.1	215.6	180.4	152.5	127.6	104.1	90.2	80.7	73.6	68.2	63.8	60.1	57.0
500	401.0	310.6	262.5	219.6	185.6	155.3	126.8	109.8	98.2	89.7	83.0	77.7	73.2	69.5

Technical Data

INSTALLATION RECOMMENDATIONS

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

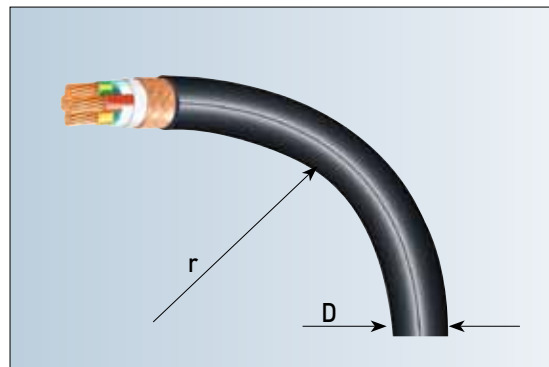
1. Minimum Cable Bending Radius

The bending radius for the installation of cables should be not less than the values given as follows;

Type of cable	Minimum bending radius	
Unarmored or unbraided		
Up to 1.8/3kV	D ≤ 25mm	4 X D
	D >25mm	6 X D
Metal braid screened or armored		6 X D
	Tape screened	8 X D
3.6/6kV above	Single core	12 X D
	3-core	9 X D

Note) For cables rated at 3.6/6(7.2)kV and above employing flexible conductor stranding(Class5) and braid insulation shields indicating a minimum bend radius of 6D for unarmored cables and 8D for armored cables in concurrence with the approval of the cable manufacturer.

Notes) D : Overall diameter of cable



2. Installation Temperature

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

But, if the ambient temperature were below -20°C, the cable should be installed after maintained at room temperature(about 15~25°C) for 24 hours or more.

3. Explosion Risk Areas

1) Areas

The areas on board are usually classified in two main categories with regards to 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 require 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.

4. Earthing of Metal Coverings of Cables

1) General Requirements

All metal coverings of cables, armoring 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 cable for AC and single core cable 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 armor is to be earthed inside the hazardous area to avoid dangerous potential between screen armor 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 print.

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.

Technical Data

5. Fixing of Cables

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)		Spacing of fixing points (mm)	
Above	Up to	Cables without Metal braid or armor	Cables with copper, bronze or steel braid or armor
-	8	200	250
8	13	250	300
12	20	300	350
20	30	350	400
30	-	400	450

6. 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 armor or sheath) provides adequate protection the cables should be:

- Enclosed in suitable conduits or casings
- covered by steel pipes 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 armored.

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.

7. 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 cable 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.

1) 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

2) 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 give characteristics complying with the test requirements in IEC-Publication 60332-1, with amendments.

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

8. 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 armor 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.

1) 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."

2) 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.

3) 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

4) 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.

5) 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.

6) Marking

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



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Handling, Installation Method & Notice

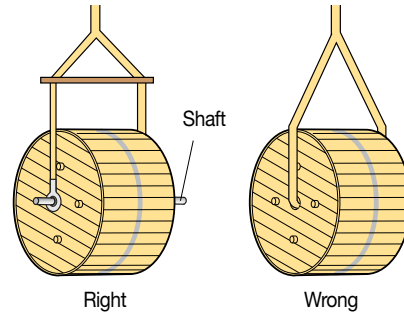
■ Loading & Transportation

1. In case of a crane

Should transport by using standard rope and a shaft which is put in the center of drum.

* Matters that requires attention

- Placing it even with the ground.
- Should move slowly and when it placedown, don't do sudden stop.

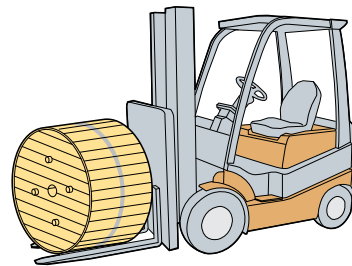


2. In case of a forklift

Drums should not be damaged by a forklift.

* Matters that requires attention:

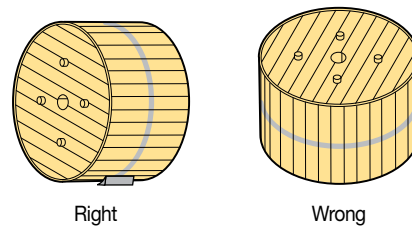
- Place the drum on the center of a fork.
- The width of a fork should be longer than drum size.



■ Transportation and Unloading

* Matters that requires attention while handling cables.

- Don't lie drums down.
- Don't move it 20m longer when rolling it.
- Don't use gimlets or something like sharp when moving.
- Don't roll a damaged drum.
- Don't roll at projecting surface.
- Don't store drum near to stove and heater.



Check point while handling cables(Storage)

■ Storage

- Don't leave the protecting packing materials and outside package until remove it for setting up cables.
- Should construct a fence to protect against damages by moving machines.
- Keep it inside or in depository when safekeeping in long term.
(For reference, drums and packages can stand against dry whether outside the house)
- Must seal both sides of cables remaining in the drums the cap and heat-contracting tube so that moisture doesn't soak in after finishing the removal of exterior packing materials and cutting and installing cables.

Certificates Approved

Certificates Approved



Cert. of ISO 9001



Cert. of ISO 14001



Cert. of OHSAS 18001

Class Type Approval



ABS



BV



DNV



LR



RINA