songhyun TMC



HIS Cable

Cable for electrical equipment of ship & mobile & offshore unit

IEC 60092-350, 353, 354, 376

ENTERPRISE WITH DREAM, HOPE, AND FUTURE







TMC Co., Ltd has been pursuing innovation in technology and products for marine, oil and gas industry.

For 20 years TMC has had a single-minded focus on delivering superior customer services with specialized marine and offshore cable solutions.

The operational excellence of TMC is underpinned by its products with the best quality and the flexibility 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 (Quality)
2004 ISO 14001 Certification by LRQA (Environment & Quality)
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 (for Health, Safety and Environment)
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

Certificates

- Type Approval Certification for shipboard cables : ABS, BV, CCS, 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 N0. 10-0627241)
- Type Approval Certification for IEEE1580 Type P cables : ABS and DNV 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


TMC





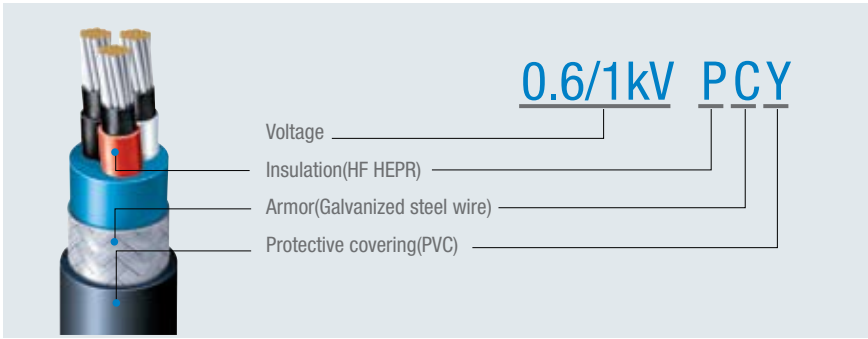
Code Designation

Materials \ Construction	Insulation	Armor	Outer sheath
HF HEPR	P		
MGT + HF HEPR	E		
Flexible compound / Lapped			
Non-armoured		X	
Bronze wire braid		B	
Copper wire braid		O	
Galvanized steel wire braid		C	
PVC (ST2)			Y
Halogen free thermoplastic Compound (SHF1)			I

Added abbreviation

(C)	AL/PS tape collective screen with drain wire
(I/C)	AL/PS tape individual & collective screen with drain wire

Example



Advantage of His Cable

• Compact & light weight • Flexibility • Simplication • Easy installation • Enhanced cold resistant (-35℃) • Flame retardant (IEC 60332-3 Cat. A)

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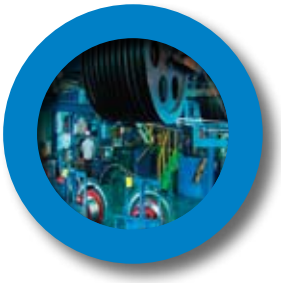


HV Power Cable





Flame Retardant

Non-H/F TYPE

3.6/6kV PXY, PCY, POY, PBY
6/10kV PXY, PCY, POY, PBY
8.7/15kV PXY, PCY, POY, PBY
12/20kV PXY, PCY, POY, PBY

H/F TYPE

3.6/6kV PXI, PCI, POI, PBI
6/10kV PXI, PCI, POI, PBI
8.7/15kV PXI, PCI, POI, PBI
12/20kV PXI, PCI, POI, PBI

Flame retardant

High Voltage Power Cable



Cable Designation

Non-H/F TYPE	H/F TYPE
- 3.6/6kV PXY, PCY, POY, PBY	- 3.6/6kV PXI, PCI, POI, PBI
- 6/10kV PXY, PCY, POY, PBY	- 6/10kV PXI, PCI, POI, PBI
- 8.7/15kV PXY, PCY, POY, PBY	- 8.7/15kV PXI, PCI, POI, PBI
- 12/20kV PXY, PCY, POY, PBY	- 12/20kV PXI, PCI, POI, PBI

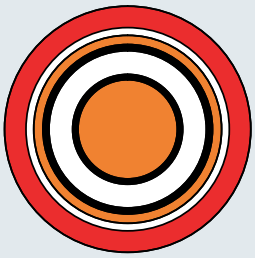
Application Standard

- Design guide : IEC 60092-350 & IEC 60092-354
- Insulation material : IEC 60092-351, HF EPR
- Sheath material : IEC 60092-359, ST2 or SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5% ↓ (For Halogen free cable only)
- Smoke emission : IEC 61034, 60% ↑ (For Halogen free cable only)
- Fluorine content : IEC 60684-2, 0.1% ↓ (For Halogen free cable only)
- pH and conductivity : IEC 60754-2, pH (4.3 ↑) & Conductivity (10㎲/mm ↓) (For Halogen free cable only)
- Cold bend/impact (Option) : CSA 22.2 NO. 0.3 (-40℃/-35℃) (Same as IEC 60092-350, 8.9)
- Oil resistant (Option) : IEEE 1580 TYPE "T", at 70℃x4h (For PVC sheath material only)
- Paint resistant (Option): Maker standard (Epoxy, Alkyd paint, at 100℃x168h) (For PVC sheath material only)
- Max. rated conductor temperature : 90℃

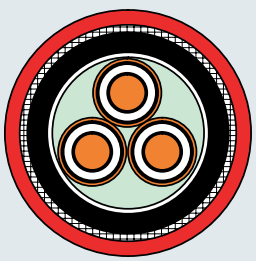
Core Identification

- Colored tape shall be inserted under metallic screen.
  3C : Black, White, Red

Construction



PXY (1C)



PCY (3C)

Classification	Code	Construction detail
Conductor		- Stranded tinned annealed copper wires as per IEC 60228, Class 2
Conductor screen		- Semi-conducting layer (tape / compound)
Insulation	P	- HF EPR 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		- 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		- ST2 or SHF1 as per IEC 60092-359 - Applied to Armoured & Sheath cable
Armor	C (O,B)	- Braid of galvanized steel wire(C) / Plain annealed copper wire(O) / bronze wire(B) - Coverage density : Min. 90% - A suitable separator tape(s) may be applied under/over the armour - Applied to Armoured & Sheath cable
Outer sheath	Y (I)	- Non-H/F type : ST2(Y) as per IEC 60092-359 - H/F type : SHF1(I) as per IEC 60092-359 - Outer sheath color : Red

Note. The other color of sheath and insulation may be applicable when purchaser require

HIS CABLE

IEC 60092-350, 353, 354, 376

3.6/6kV PXY, POY, PBY, PXI, POI, PBI

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Dia of wire for armour	Armoured			Cable Weight(Approx.)	
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of inner sheath	Nominal Dia.	Toler-ance		Thickness of outer sheath	Nominal Dia.	Toler-ance	Unarmoured	Armoured
No.	mm²	EA.	mm	mm	mm	mm	±mm	mm	mm	mm	±mm	kg/km	kg/km
1	10	7	4.2	3.0	1.4	17.2	0.7	0.3	1.1	21.0	0.8	435	695
	16	7	5.3	3.0	1.4	18.2	0.7	0.3	1.1	22.0	0.9	580	795
	25	7	6.6	3.0	1.5	19.7	0.8	0.3	1.1	23.5	0.9	670	950
	35	7	7.9	3.0	1.5	20.9	0.8	0.3	1.2	24.9	1.0	765	1,105
	50	19	9.1	3.0	1.6	22.4	0.9	0.3	1.2	26.4	1.1	885	1,290
	70	19	11.0	3.0	1.6	24.2	1.0	0.3	1.2	28.2	1.1	1,045	1,560
	95	19	12.9	3.0	1.7	26.3	1.1	0.3	1.3	30.5	1.2	1,325	1,915
	120	37	14.5	3.0	1.8	28.1	1.1	0.3	1.3	32.3	1.3	1,550	2,235
	150	37	16.2	3.0	1.8	29.7	1.2	0.3	1.4	34.1	1.4	1,825	2,570
	185	37	18.0	3.0	1.9	31.7	1.3	0.4	1.4	36.5	1.5	2,435	3,100
	240	61	20.6	3.0	2.0	34.6	1.4	0.4	1.5	39.6	1.6	2,890	3,800
	300	61	23.1	3.0	2.1	37.2	1.5	0.4	1.6	42.4	1.7	3,410	4,525

3.6/6kV PXY, PCY, POY, PBY, PXI, PCI, POI, PBI

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Dia of wire for armour	Armoured			Cable Weight(Approx.)	
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of inner sheath	Nominal Dia.	Toler-ance		Thickness of outer sheath	Nominal Dia.	Toler-ance	Unarmoured	Armoured
No.	mm²	EA.	mm	mm	mm	mm	±mm	mm	mm	mm	±mm	kg/km	kg/km
3	10	7	4.2	3.0	2.0	34.6	1.4	0.4	1.5	39.6	1.6	1,280	1,955
	16	7	5.3	3.0	2.1	36.9	1.5	0.4	1.6	42.1	1.7	2,065	2,295
	25	7	6.6	3.0	2.2	39.9	1.6	0.4	1.6	45.1	1.8	2,375	2,760
	35	7	7.9	3.0	2.3	42.7	1.7	0.4	1.7	48.1	1.9	2,705	3,250
	50	19	9.1	3.0	2.4	45.7	1.8	0.4	1.8	51.3	2.1	3,085	3,835
	70	19	11.0	3.0	2.6	50.0	2.0	0.4	1.9	55.8	2.2	3,660	4,775
	95	19	12.9	3.0	2.7	54.3	2.2	0.4	2.0	60.3	2.4	4,375	5,870
	120	37	14.5	3.0	2.9	58.1	2.3	0.4	2.1	64.3	2.6	5,010	6,915
	150	37	16.2	3.0	3.0	61.8	2.5	0.4	2.2	68.2	2.7	5,730	8,010
	185	37	18.0	3.0	3.2	66.1	2.6	0.4	2.3	72.7	2.9	6,795	9,465
	240	61	20.6	3.0	3.4	72.3	2.9	0.4	2.5	79.3	3.2	8,070	11,715
	300	61	23.1	3.0	3.6	77.9	3.1	0.4	2.6	85.1	3.4	9,395	14,000

6/10kV PXY, POY, PBY, PXI, POI, PBI

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Dia of wire for armour	Armoured			Cable Weight(Approx.)	
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of inner sheath	Nominal Dia.	Toler-ance		Thickness of outer sheath	Nominal Dia.	Toler-ance	Unarmoured	Armoured
No.	mm²	EA.	mm	mm	mm	mm	±mm	mm	mm	mm	±mm	kg/km	kg/km
1	16	7	5.3	3.4	1.4	19.0	0.8	0.3	1.1	22.8	0.9	550	835
	25	7	6.6	3.4	1.5	20.5	0.8	0.3	1.1	24.3	1.0	710	995
	35	7	7.9	3.4	1.5	21.7	0.9	0.3	1.2	25.7	1.0	785	1,150
	50	19	9.1	3.4	1.6	23.2	0.9	0.3	1.2	27.2	1.1	905	1,340
	70	19	11.0	3.4	1.7	25.2	1.0	0.3	1.3	29.4	1.2	1,070	1,640
	95	19	12.9	3.4	1.7	27.1	1.1	0.3	1.3	31.3	1.3	1,245	1,970
	120	37	14.5	3.4	1.8	28.9	1.2	0.3	1.4	33.3	1.3	1,520	2,305
	150	37	16.2	3.4	1.9	30.7	1.2	0.4	1.4	35.5	1.4	1,830	2,735
	185	37	18.0	3.4	1.9	32.5	1.3	0.4	1.5	37.5	1.5	2,140	3,185
	240	61	20.6	3.4	2.0	35.4	1.4	0.4	1.5	40.4	1.6	2,770	3,875
	300	61	23.1	3.4	2.1	38.0	1.5	0.4	1.6	43.2	1.7	3,220	4,600

Flame retardant

High Voltage Power Cable

6/10kV PXY, PCY, POY, PBY, PXI, PCI, POI, PBI

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Dia of wire for armour	Armoured			Cable Weight(Approx.)	
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of inner sheath	Nominal Dia.	Toler-ance		Thickness of outer sheath	Nominal Dia.	Toler-ance	Unarmoured	Armoured
No.	mm^2	EA.	mm	mm	mm	mm	±mm	mm	mm	mm	±mm	kg/km	kg/km
3	16	7	5.3	3.4	2.2	38.8	1.6	0.4	1.6	44.0	1.8	1,680	2,455
	25	7	6.6	3.4	2.3	41.9	1.7	0.4	1.7	47.3	1.9	2,585	2,955
	35	7	7.9	3.4	2.4	44.6	1.8	0.4	1.8	50.2	2.0	2,900	3,450
	50	19	9.1	3.4	2.5	47.6	1.9	0.4	1.8	53.2	2.1	3,285	4,025
	70	19	11.0	3.4	2.7	51.9	2.1	0.4	1.9	57.7	2.3	3,865	4,980
	95	19	12.9	3.4	2.8	56.2	2.2	0.4	2.1	62.4	2.5	4,505	6,115
	120	37	14.5	3.4	3.0	60.1	2.4	0.4	2.1	66.3	2.7	5,220	7,150
	150	37	16.2	3.4	3.1	63.7	2.5	0.4	2.2	70.1	2.8	5,880	8,255
	185	37	18.0	3.4	3.2	67.8	2.7	0.4	2.3	74.4	3.0	6,715	9,575
	240	61	20.6	3.4	3.5	74.2	3.0	0.4	2.5	81.2	3.2	8,225	11,875
	300	61	23.1	3.4	3.7	79.8	3.2	0.4	2.6	87.0	3.5	9,500	14,165

8.7/15kV PXY, POY, PBY, PXI, POI, PBI

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Dia of wire for armour	Armoured			Cable Weight(Approx.)	
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of inner sheath	Nominal Dia.	Toler-ance		Thickness of outer sheath	Nominal Dia.	Toler-ance	Unarmoured	Armoured
No.	mm^2	EA.	mm	mm	mm	mm	±mm	mm	mm	mm	±mm	kg/km	kg/km
1	25	7	6.6	4.5	1.6	22.9	0.9	0.3	1.2	26.9	1.1	800	1,155
	35	7	7.9	4.5	1.6	24.1	1.0	0.3	1.2	28.1	1.1	935	1,300
	50	19	9.1	4.5	1.7	25.6	1.0	0.3	1.3	29.8	1.2	1,040	1,510
	70	19	11.0	4.5	1.8	27.6	1.1	0.3	1.3	31.8	1.3	1,210	1,810
	95	19	12.9	4.5	1.8	29.5	1.2	0.3	1.4	33.9	1.4	1,385	2,165
	120	37	14.5	4.5	1.9	31.3	1.3	0.4	1.4	36.1	1.4	1,655	2,580
	150	37	16.2	4.5	2.0	33.1	1.3	0.4	1.5	38.1	1.5	1,950	2,955
	185	37	18.0	4.5	2.0	34.9	1.4	0.4	1.5	39.9	1.6	2,205	3,395
	240	61	20.6	4.5	2.1	37.8	1.5	0.4	1.6	43.0	1.7	2,640	4,120
	300	61	23.1	4.5	2.2	40.4	1.6	0.4	1.7	45.8	1.8	3,275	4,860

8.7/15kV PXY, PCY, POY, PBY, PXI, PCI, POI, PBI

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Dia of wire for armour	Armoured			Cable Weight(Approx.)	
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of inner sheath	Nominal Dia.	Toler-ance		Thickness of outer sheath	Nominal Dia.	Toler-ance	Unarmoured	Armoured
No.	mm^2	EA.	mm	mm	mm	mm	±mm	mm	mm	mm	±mm	kg/km	kg/km
3	25	7	6.6	4.5	2.5	47.0	1.9	0.4	1.8	52.6	2.1	2,480	3,460
	35	7	7.9	4.5	2.6	49.8	2.0	0.4	1.9	55.6	2.2	3,530	3,985
	50	19	9.1	4.5	2.7	52.8	2.1	0.4	2.0	58.8	2.4	3,935	4,615
	70	19	11.0	4.5	2.8	56.9	2.3	0.4	2.1	63.1	2.5	4,535	5,580
	95	19	12.9	4.5	3.0	61.4	2.5	0.4	2.2	67.8	2.7	5,245	6,760
	120	37	14.5	4.5	3.1	65.0	2.6	0.4	2.3	71.6	2.9	5,865	7,825
	150	37	16.2	4.5	3.3	68.8	2.8	0.4	2.4	75.6	3.0	6,645	9,000
	185	37	18.0	4.5	3.4	72.9	2.9	0.4	2.5	79.9	3.2	7,465	10,395
	240	61	20.6	4.5	3.7	79.3	3.2	0.4	2.6	86.5	3.5	8,840	12,715
	300	61	23.1	4.5	3.9	84.9	3.4	0.4	2.8	92.5	3.7	10,355	15,110

HIS CABLE

IEC 60092-350, 353, 354, 376

12/20kV PXY, POY, PBY, PXI, POI, PBI

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Dia of wire for armour	Armoured			Cable Weight(Approx.)	
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of inner sheath	Nominal Dia.	Toler-ance		Thickness of outer sheath	Nominal Dia.	Toler-ance	Unarmoured	Armoured
No.	mm^2	EA.	mm	mm	mm	mm	±mm	mm	mm	mm	±mm	kg/km	kg/km
1	35	7	7.9	5.5	1.7	26.3	1.1	0.3	1.3	30.5	1.2	1,015	1,500
	50	19	9.1	5.5	1.8	27.8	1.1	0.3	1.3	32.0	1.3	1,175	1,690
	70	19	11.0	5.5	1.8	29.6	1.2	0.3	1.4	34.0	1.4	1,450	2,030
	95	19	12.9	5.5	1.9	31.7	1.3	0.4	1.4	36.5	1.5	1,780	2,490
	120	37	14.5	5.5	2.0	33.5	1.3	0.4	1.5	38.5	1.5	2,075	2,860
	150	37	16.2	5.5	2.0	35.1	1.4	0.4	1.5	40.1	1.6	2,400	3,220
	185	37	18.0	5.5	2.1	37.1	1.5	0.4	1.6	42.3	1.7	2,830	3,720
	240	61	20.6	5.5	2.2	40.0	1.6	0.4	1.6	45.2	1.8	3,485	4,450
	300	61	23.1	5.5	2.3	42.6	1.7	0.4	1.7	48.0	1.9	4,160	5,220

12/20kV PXY, PCY, POY, PBY, PXI, PCI, POI, PBI

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Dia of wire for armour	Armoured			Cable Weight(Approx.)	
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of inner sheath	Nominal Dia.	Toler-ance		Thickness of outer sheath	Nominal Dia.	Toler-ance	Unarmoured	Armoured
No.	mm^2	EA.	mm	mm	mm	mm	±mm	mm	mm	mm	±mm	kg/km	kg/km
3	35	7	7.9	5.5	2.7	54.3	2.2	0.4	2.0	60.3	2.4	3,535	4,525
	50	19	9.1	5.5	2.9	57.5	2.3	0.4	2.1	63.7	2.5	4,100	5,225
	70	19	11.0	5.5	3.0	61.6	2.5	0.4	2.2	68.0	2.7	5,035	6,250
	95	19	12.9	5.5	3.2	66.1	2.6	0.4	2.3	72.7	2.9	6,120	7,485
	120	37	14.5	5.5	3.3	69.7	2.8	0.4	2.4	76.5	3.1	7,190	8,520
	150	37	16.2	5.5	3.5	73.6	2.9	0.4	2.5	80.6	3.2	8,270	9,740
	185	37	18.0	5.5	3.6	77.6	3.1	0.4	2.6	84.8	3.4	9,705	11,240
	240	61	20.6	5.5	3.8	83.9	3.4	0.4	2.7	91.3	3.7	11,950	13,615
	300	61	23.1	5.5	4.0	89.4	3.6	0.4	2.9	97.2	3.9	14,215	16,070





Power & Lighting Cable



Flame Retardant



Non-H/F TYPE

- 0.6/1kV PXY, PCY, POY, PBY
- 0.6/1kV PXY(C), PCY(C), POY(C), PBY(C)

H/F TYPE

- 0.6/1kV PXI, PCI, POY, PBI
- 0.6/1kV PXI(C), PCI(C), POI(C), PBI(C) **11 ~ 15**

Fire Resistance

Non-H/F TYPE

- 0.6/1kV EXY, ECY, EOY, EBY
- 0.6/1kV EXY(C), ECY(C), EOY(C), EBY(C)

H/F TYPE

- 0.6/1kV EXI, ECI, EOY, EBI
- 0.6/1kV EXI(C), ECI(C), EOI(C), EBI(C) **16 ~ 20**

Flame retardant

Power & Lighting Cable with / without collective screen

HIS CABLE

IEC 60092-350, 353, 354, 376



Cable Designation

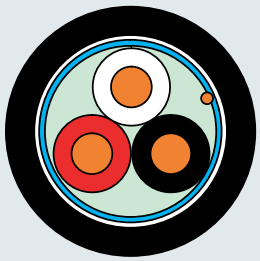
Non-H/F TYPE	H/F TYPE
- 0.6/1kV PXY, PCY, POY, PBY - 0.6/1kV PXY(C), PCY(C), POY(C), PBY(C)	- 0.6/1kV PXI, PCI, POI, PBI - 0.6/1kV PXI(C), PCI(C), POI(C), PBI(C)

Application Standard

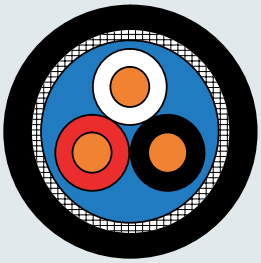
- Design guide : IEC 60092-350 & IEC 60092-353
- Insulation material : IEC 60092-351, HF HEPR
- Sheath material : IEC 60092-359, ST2 or SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5% ↓ (For Halogen free cable only)
- Smoke emission : IEC 61034, 60% ↑ (For Halogen free cable only)
- Fluorine content : IEC 60684-2, 0.1% ↓ (For Halogen free cable only)
- pH and conductivity : IEC 60754-2, pH (4.3 ↑) & Conductivity (10㎲/mm ↓) (For Halogen free cable only)
- Cold bend/impact (Option) : CSA 22.2 NO. 0.3 (-40℃/-35℃) (Same as IEC 60092-350, 8.9)
- Oil resistant (Option) : IEEE 1580 TYPE "T", at 70℃x4h (For PVC sheath material only)
- Paint resistant (Option): Maker standard (Epoxy, Alkyd paint, at 100℃x168h) (For PVC sheath material only)
- Max. rated conductor temperature : 90℃

Core Identification

1 Core : White
2 Core : White, Black
3 Core : White, Black, Red
4 Core : White, Black, Red, Blue
Earth Wire : Green / Yellow stripe



PXI(C) (3C)



PCY (3C)

Construction

Classification	Code	Construction detail
Conductor		- Stranded tinned annealed copper wires as per IEC 60228, Class 2 - A suitable tape may be applied on the conductor
Insulation	P	- HF HEPR 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
Collective screen	(C)	- AL/PS Tape with drain wire - A suitable tape may be applied on the collective screen - Applied to Screened cable
Inner covering		- Flexible compound covering - Applied to Armoured & Sheath cable
Armour	C (O,B)	- Braid of galvanized steel wire(C) / Plain annealed copper wire(O) / bronze wire(B) - Coverage density : Min. 90% - A suitable separator tape(s) may be applied under/over the armour - Applied to Armoured & Sheath cable
Sheath	Y (I)	- Non-H/F type : ST2(Y) as per IEC 60092-359 - H/F type : SHF1(I) as per IEC 60092-359 - Outer sheath color : Black

Note. The other color of sheath and insulation may be applicable when purchaser require

Flame retardant

Power & Lighting Cable with / without collective screen

0.6/1kV PXY, POY, PBY, PXY(C), POY(C), PBY(C), PXI, POI, PBI, PXI(C), POI(C), PBI(C)

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Armoured					
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Thickness of inner covering	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	mm	kg/km
1	1.5	7	1.7	0.7	1.0	5.4±0.4	50	1.0	4.4±0.4	0.3	1.0	8.0±0.4	110
	2.5	7	2.2	0.7	1.0	5.8±0.4	60	1.0	4.8±0.4	0.3	1.0	8.4±0.4	130
	4	7	2.7	0.7	1.0	6.4±0.4	80	1.0	5.4±0.4	0.3	1.1	9.2±0.4	155
	6	7	3.3	0.7	1.0	6.9±0.4	100	1.0	5.9±0.4	0.3	1.1	9.7±0.4	185
	10	7	4.2	0.7	1.0	7.9±0.4	145	1.0	6.9±0.4	0.3	1.1	10.7±0.4	240
	16	7	5.3	0.7	1.1	9.1±0.4	215	1.0	7.9±0.4	0.3	1.2	11.9±0.5	325
	25	7	6.6	0.9	1.1	10.8±0.4	325	1.0	9.6±0.4	0.3	1.2	13.6±0.5	450
	35	7	7.9	0.9	1.2	12.4±0.5	435	1.0	11.0±0.4	0.3	1.3	15.2±0.6	575
	50	19	9.1	1.0	1.2	13.8±0.6	565	1.0	12.4±0.5	0.3	1.4	16.8±0.7	730
	70	19	11.0	1.1	1.3	16.0±0.6	790	1.0	14.4±0.6	0.3	1.4	18.8±0.8	980
	95	19	12.9	1.1	1.4	18.1±0.7	1,065	1.0	16.3±0.7	0.3	1.5	20.9±0.8	1,270
	120	37	14.5	1.2	1.5	20.1±0.8	1,325	1.0	18.1±0.7	0.3	1.6	22.9±0.9	1,555
	150	37	16.2	1.4	1.6	22.3±0.9	1,625	1.0	20.1±0.8	0.3	1.7	25.1±1.0	1,880
	185	37	18.0	1.6	1.6	24.5±1.0	2,015	1.0	22.3±0.9	0.3	1.7	27.3±1.1	2,290
	240	61	20.6	1.7	1.8	27.8±1.1	2,615	1.0	25.2±1.0	0.3	1.9	30.6±1.2	2,925
	300	61	23.1	1.8	1.9	30.6±1.2	3,245	1.2	28.0±1.1	0.3	2.0	33.6±1.3	3,600
	400	61	26.1	2.0	2.0	34.2±1.4	4,115	1.2	31.4±1.3	0.4	2.1	37.6±1.5	4,595
	500	61	29.2	2.2	2.1	37.9±1.5	5,145	1.2	34.9±1.4	0.4	2.3	41.5±1.7	5,690
	630	91	33.2	2.4	2.3	42.7±1.7	6,580	1.4	39.6±1.6	0.4	2.5	46.6±1.9	7,225

HIS CABLE

IEC 60092-350, 353, 354, 376

0.6/1kV PXY, PCY, POY, PBY, PXY(C), PCY(C), POY(C), PBY(C), PXI, PCI, POI, PBI, PXI(C), PCI(C), POI(C), PBI(C)

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Armoured					
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Thickness of inner covering	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	mm	kg/km
2	1.5	7	1.7	0.7	1.1	9.0±0.4	100	1.0	7.8±0.4	0.3	1.2	11.8±0.5	200
	2.5	7	2.2	0.7	1.1	9.8±0.4	130	1.0	8.6±0.4	0.3	1.2	12.6±0.5	235
	4	7	2.7	0.7	1.1	11.0±0.4	175	1.0	9.8±0.4	0.3	1.2	13.8±0.6	295
	6	7	3.3	0.7	1.2	12.2±0.5	230	1.0	10.8±0.4	0.3	1.3	15.0±0.6	365
	10	7	4.2	0.7	1.3	14.4±0.6	345	1.0	12.8±0.5	0.3	1.4	17.2±0.7	500
	16	7	5.3	0.7	1.3	16.4±0.7	485	1.0	14.8±0.6	0.3	1.4	19.2±0.8	660
	25	7	6.6	0.9	1.5	20.2±0.8	750	1.0	18.2±0.7	0.3	1.6	23.0±0.9	970
	35	7	7.9	0.9	1.6	23.2±0.9	1,005	1.0	21.0±0.8	0.3	1.7	26.0±1.0	1,250
	50	19	9.1	1.0	1.7	26.2±1.0	1,320	1.0	23.8±1.0	0.3	1.8	29.0±1.2	1,590
	70	19	11.0	1.1	1.9	30.6±1.2	1,845	1.2	28.0±1.1	0.3	2.0	33.6±1.3	2,175
	95	19	12.9	1.1	2.0	34.6±1.4	2,465	1.2	31.8±1.3	0.4	2.1	38.0±1.5	2,915
	120	37	14.5	1.2	2.2	38.6±1.5	3,080	1.2	35.4±1.4	0.4	2.3	42.0±1.7	3,575
	150	37	16.2	1.4	2.3	42.8±1.7	3,775	1.4	39.7±1.6	0.4	2.5	46.7±1.9	4,370
	185	37	18.0	1.6	2.5	47.6±1.9	4,700	1.4	44.1±1.8	0.4	2.6	51.3±2.1	5,340
	240	61	20.6	1.7	2.7	53.8±2.2	6,085	1.6	50.1±2.0	0.4	2.9	57.9±2.3	6,855
	300	61	23.1	1.8	2.9	59.4±2.4	7,535	1.6	55.3±2.2	0.4	3.1	63.5±2.5	8,385
2C	25	7	6.6	0.9	1.5	21.2±0.8	935	1.0	19.6±0.8	0.3	1.6	24.4±1.0	1,175
Earth	16	7	5.3	0.7									
2C	35	7	7.9	0.9	1.6	24.4±1.0	1,285	1.0	22.6±0.9	0.3	1.8	27.8±1.1	1,570
Earth	25	7	6.6	0.7									
2C	50	19	9.1	1.0	1.8	27.6±1.1	1,605	1.0	25.4±1.0	0.3	1.9	30.8±1.2	1,915
Earth	25	7	6.6	0.9									
2C	70	19	11.0	1.1	1.9	32.0±1.3	2,225	1.2	29.9±1.2	0.3	2.1	35.7±1.4	2,620
Earth	35	7	7.9	0.9									
2C	95	19	12.9	1.1	2.1	36.4±1.5	2,985	1.2	33.9±1.4	0.4	2.2	40.3±1.6	3,495
Earth	50	19	9.1	1.0									
2C	120	37	14.5	1.2	2.2	40.5±1.6	3,795	1.4	38.1±1.5	0.4	2.4	44.9±1.8	4,410
Earth	70	19	11.0	1.1									
2C	150	37	16.2	1.4	2.4	45.2±1.8	4,765	1.4	42.4±1.7	0.4	2.6	49.6±2.0	5,445
Earth	95	19	12.9	1.1									
2C	185	37	18.0	1.6	2.6	49.9±2.0	5,695	1.4	46.7±1.9	0.4	2.7	54.1±2.2	6,420
Earth	95	19	12.9	1.1									
2C	240	61	20.6	1.7	2.8	56.4±2.3	7,330	1.6	53.2±2.1	0.4	3.0	61.2±2.4	8,220
Earth	120	37	14.5	1.2									
2C	300	61	23.1	1.8	3.0	62.2±2.5	9,070	1.6	58.6±2.3	0.4	3.2	67.0±2.7	10,045
Earth	150	37	16.2	1.4									

Flame retardant

Power & Lighting Cable with / without collective screen

0.6/1kV PXY, PCY, POY, PBY, PXY(C), PCY(C), POY(C), PBY(C), PXI, PCI, POI, PBI, PXI(C), PCI(C), POI(C), PBI(C)

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Armoured					
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Thickness of inner covering	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	mm	kg/km
3	1.5	7	1.7	0.7	1.1	9.5±0.4	125	1.0	8.3±0.4	0.3	1.2	12.3±0.5	230
	2.5	7	2.2	0.7	1.1	10.4±0.4	165	1.0	9.2±0.4	0.3	1.2	13.2±0.5	275
	4	7	2.7	0.7	1.2	11.9±0.5	230	1.0	10.5±0.4	0.3	1.3	14.7±0.6	360
	6	7	3.3	0.7	1.2	12.9±0.5	300	1.0	11.5±0.5	0.3	1.3	15.7±0.6	440
	10	7	4.2	0.7	1.3	15.3±0.6	460	1.0	13.7±0.5	0.3	1.4	18.1±0.7	620
	16	7	5.3	0.7	1.4	17.6±0.7	665	1.0	15.8±0.6	0.3	1.5	20.4±0.8	850
	25	7	6.6	0.9	1.5	21.5±0.9	1,025	1.0	19.5±0.8	0.3	1.6	24.3±1.0	1,250
	35	7	7.9	0.9	1.7	24.9±1.0	1,385	1.0	22.5±0.9	0.3	1.8	27.7±1.1	1,640
	50	19	9.1	1.0	1.8	28.1±1.1	1,820	1.0	25.5±1.0	0.3	1.9	30.9±1.2	2,110
	70	19	11.0	1.1	1.9	32.6±1.3	2,545	1.2	30.0±1.2	0.3	2.1	35.8±1.4	2,910
	95	19	12.9	1.1	2.1	37.1±1.5	3,430	1.2	34.1±1.4	0.4	2.2	40.5±1.6	3,910
	120	37	14.5	1.2	2.3	41.4±1.7	4,290	1.4	38.3±1.5	0.4	2.4	45.1±1.8	4,850
	150	37	16.2	1.4	2.4	45.9±1.8	5,260	1.4	42.6±1.7	0.4	2.6	49.8±2.0	5,900
	185	37	18.0	1.6	2.6	51.1±2.0	6,555	1.6	47.6±1.9	0.4	2.8	55.2±2.2	7,290
	240	61	20.6	1.7	2.9	57.9±2.3	8,525	1.6	53.8±2.2	0.4	3.0	61.8±2.5	9,325
	300	61	23.1	1.8	3.1	63.9±2.6	10,575	1.6	59.4±2.4	0.4	3.2	67.8±2.7	11,455
3C	25	7	6.6	0.9	1.6	23.0±0.9	1,215	1.0	21.2±0.8	0.3	1.7	26.2±1.0	1,475
Earth	16	7	5.3	0.7									
3C	35	7	7.9	0.9	1.7	26.8±1.1	1,665	1.0	24.8±1.0	0.3	1.8	30.0±1.2	1,970
Earth	25	7	6.6	0.7									
3C	50	19	9.1	1.0	1.8	29.6±1.2	2,100	1.2	27.7±1.1	0.3	2.0	33.3±1.3	2,465
Earth	25	7	6.6	0.9									
3C	70	19	11.0	1.1	2.0	34.6±1.4	2,940	1.2	32.3±1.3	0.4	2.2	38.7±1.5	3,440
Earth	35	7	7.9	0.9									
3C	95	19	12.9	1.1	2.2	39.3±1.6	3,955	1.2	36.6±1.5	0.4	2.3	43.2±1.7	4,505
Earth	50	19	9.1	1.0									
3C	120	37	14.5	1.2	2.4	44.1±1.8	5,030	1.4	41.3±1.7	0.4	2.5	48.3±1.9	5,670
Earth	70	19	11.0	1.1									
3C	150	37	16.2	1.4	2.6	49.3±2.0	6,280	1.4	46.1±1.8	0.4	2.7	53.5±2.1	7,000
Earth	95	19	12.9	1.1									
3C	185	37	18.0	1.6	2.7	53.7±2.1	7,555	1.6	50.7±2.0	0.4	2.9	58.5±2.3	8,405
Earth	95	19	12.9	1.1									
3C	240	61	20.6	1.7	3.0	60.8±2.4	9,780	1.6	57.2±2.3	0.4	3.2	65.6±2.6	10,735
Earth	120	37	14.5	1.2									
3C	300	61	23.1	1.8	3.2	67.2±2.7	12,115	1.8	63.5±2.5	0.4	3.4	72.3±2.9	13,210
Earth	150	37	16.2	1.4									

HIS CABLE

IEC 60092-350, 353, 354, 376

0.6/1kV PXY, PCY, POY, PBY, PXY(C), PCY(C), POY(C), PBY(C), PXI, PCI, POI, PBI, PXI(C), PCI(C), POI(C), PBI(C)

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Armoured					
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Thickness of inner covering	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	mm	kg/km
4	1.5	7	1.7	0.7	1.1	10.3±0.4	155	1.0	9.1±0.4	0.3	1.2	13.1±0.5	265
	2.5	7	2.2	0.7	1.2	11.5±0.5	205	1.0	10.1±0.4	0.3	1.3	14.3±0.6	335
	4	7	2.7	0.7	1.2	12.9±0.5	285	1.0	11.5±0.5	0.3	1.3	15.7±0.6	430
	6	7	3.3	0.7	1.3	14.3±0.6	385	1.0	12.7±0.5	0.3	1.4	17.1±0.7	540
	10	7	4.2	0.7	1.4	17.0±0.7	590	1.0	15.2±0.6	0.3	1.5	19.8±0.8	770
	16	7	5.3	0.7	1.5	19.6±0.8	860	1.0	17.6±0.7	0.3	1.6	22.4±0.9	1,070
	25	7	6.6	0.9	1.6	23.9±1.0	1,330	1.0	21.7±0.9	0.3	1.7	26.7±1.1	1,580
	35	7	7.9	0.9	1.8	27.7±1.1	1,795	1.0	25.1±1.0	0.3	1.9	30.5±1.2	2,080
	50	19	9.1	1.0	1.9	31.2±1.2	2,365	1.2	28.6±1.1	0.3	2.0	34.2±1.4	2,700
	70	19	11.0	1.1	2.1	36.5±1.5	3,330	1.2	33.5±1.3	0.4	2.2	39.9±1.6	3,805
	95	19	12.9	1.1	2.3	41.5±1.7	4,495	1.4	38.4±1.5	0.4	2.4	45.2±1.8	5,055
	120	37	14.5	1.2	2.4	46.0±1.8	5,595	1.4	42.7±1.7	0.4	2.6	49.9±2.0	6,235
	150	37	16.2	1.4	2.6	51.2±2.0	6,890	1.6	47.7±1.9	0.4	2.8	55.3±2.2	7,620
	185	37	18.0	1.6	2.8	56.9±2.3	8,585	1.6	53.0±2.1	0.4	3.0	61.0±2.4	9,395
	240	61	20.6	1.7	3.1	64.5±2.6	11,165	1.6	60.0±2.4	0.4	3.3	68.6±2.7	12,080
	300	61	23.1	1.8	3.4	71.4±2.9	13,875	1.8	66.6±2.7	0.4	3.5	75.6±3.0	14,905
4C	25	7	6.6	0.9	1.7	26.1±1.0	1,525	1.0	24.1±1.0	0.3	1.8	29.3±1.2	1,820
Earth	16	7	5.3	0.7									
4C	35	7	7.9	0.9	1.9	30.4±1.2	2,095	1.2	28.3±1.1	0.3	2.0	33.9±1.4	2,455
Earth	25	7	6.6	0.7									
4C	50	19	9.1	1.0	2.0	34.0±1.4	2,665	1.2	31.7±1.3	0.4	2.1	37.9±1.5	3,145
Earth	25	7	6.6	0.9									
4C	70	19	11.0	1.1	2.2	39.7±1.6	3,740	1.4	37.3±1.5	0.4	2.4	44.4±1.8	4,340
Earth	35	7	7.9	0.9									
4C	95	19	12.9	1.1	2.4	45.1±1.8	5,030	1.4	42.3±1.7	0.4	2.6	49.5±2.0	5,710
Earth	50	19	9.1	1.0									
4C	120	37	14.5	1.2	2.6	50.5±2.0	6,375	1.6	47.7±1.9	0.4	2.8	55.3±2.2	7,175
Earth	70	19	11.0	1.1									
4C	150	37	16.2	1.4	2.8	56.3±2.3	7,935	1.6	53.1±2.1	0.4	3.0	61.1±2.4	8,820
Earth	95	19	12.9	1.1									
4C	185	37	18.0	1.6	3.0	62.0±2.5	9,640	1.6	58.4±2.3	0.4	3.2	66.8±2.7	10,615
Earth	95	19	12.9	1.1									
4C	240	61	20.6	1.7	3.3	70.2±2.8	12,480	1.8	66.3±2.7	0.4	3.5	75.3±3.0	13,625
Earth	120	37	14.5	1.2									
4C	300	61	23.1	1.8	3.6	77.7±3.1	15,495	1.8	73.2±2.9	0.4	3.8	82.8±3.3	16,755
Earth	150	37	16.2	1.4									
5	1.5	7	1.7	0.7	1.1	10.9±0.6	180	1.0	9.9±0.6	0.3	1.3	14.1±0.7	320
	2.5	7	2.2	0.7	1.2	12.2±0.7	250	1.0	11.0±0.6	0.3	1.3	15.2±0.8	390
	4	7	2.7	0.7	1.2	13.8±0.7	350	1.0	12.6±0.7	0.3	1.4	17.0±0.8	510
	6	7	3.3	0.7	1.3	15.3±0.8	470	1.0	13.9±0.7	0.3	1.4	18.3±0.8	640
6	1.5	7	1.7	0.7	1.2	12.0±0.7	220	1.0	10.8±0.6	0.3	1.3	15.0±0.8	360
	2.5	7	2.2	0.7	1.2	13.2±0.7	290	1.0	12.0±0.7	0.3	1.3	16.2±0.8	440
	4	7	2.7	0.7	1.3	15.2±0.8	420	1.0	13.8±0.7	0.3	1.4	18.2±0.8	590
	6	7	3.3	0.7	1.4	16.9±0.8	560	1.0	15.3±0.8	0.3	1.5	19.9±0.9	750
10	1.5	7	1.7	0.7	1.3	15.3±0.8	350	1.0	13.9±0.7	0.3	1.4	18.3±0.8	520
	2.5	7	2.2	0.7	1.4	17.1±0.8	480	1.0	15.5±0.8	0.3	1.5	20.1±0.9	670
	4	7	2.7	0.7	1.5	19.7±0.9	680	1.0	17.9±0.8	0.3	1.6	22.7±1.0	900
	6	7	3.3	0.7	1.5	21.7±1.0	910	1.0	19.9±0.9	0.3	1.7	24.9±1.0	1,160

Fire resistance

Power & Lighting Cable with / without collective screen



Cable Designation

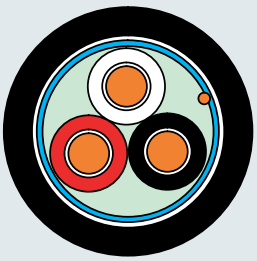
Non-H/F TYPE	H/F TYPE
- 0.6/1kV EXY, ECY, EOY, EBY - 0.6/1kV EXY(C), ECY(C), EOY(C), EBY(C)	- 0.6/1kV EXI, ECI, EOI, EBI - 0.6/1kV EXI(C), ECI(C), EOI(C), EBI(C)

Application Standard

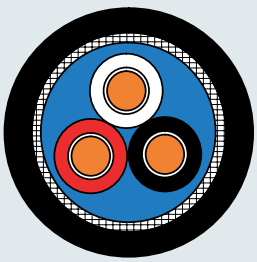
- Design guide : IEC 60092-350 & IEC 60092-353
- Insulation material : IEC 60092-351, HF HEPR
- Sheath material : IEC 60092-359, ST2 or SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Fire resistance : IEC 60331-21(90min)
  IEC 60331-1,-2(120min)
- Halogen content : IEC 60754-1, 0.5% ↓ (For Halogen free cable only)
- Smoke emission : IEC 61034, 60% ↑ (For Halogen free cable only)
- Fluorine content : IEC 60684-2, 0.1% ↓ (For Halogen free cable only)
- pH and conductivity : IEC 60754-2, pH (4.3 ↑) & Conductivity (10㎲/mm ↓)
  (For Halogen free cable only)
- Cold bend/impact (Option) : CSA 22.2 NO. 0.3 (-40℃/-35℃)
  (Same as IEC 60092-350, 8.9)
- Oil resistant (Option) : IEEE 1580 TYPE "T", at 70℃x4h
  (For PVC sheath material only)
- Paint resistant (Option): Maker standard (Epoxy, Alkyd paint, at 100℃x168h)
  (For PVC sheath material only)
- Max. rated conductor temperature : 90℃

Core Identification

1 Core : White
2 Core : White, Black
3 Core : White, Black, Red
4 Core : White, Black, Red, Blue
Earth Wire : Green / Yellow stripe



EXI(C) (3C)



ECY (3C)

Construction

Classification	Code	Construction detail
Conductor		- Stranded tinned annealed copper wires as per IEC 60228, Class 2 - A suitable tape may be applied on the conductor
Fire resisting layer	E	- Mica/glass tape
Insulation		- HF HEPR 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
Collective screen	(C)	- AL/PS Tape with drain wire - A suitable tape may be applied on the collective screen - Applied to Screened cable
Inner covering		- Flexible compound covering - Applied to Armoured & Sheath cable
Armour	C (O,B)	- Braid of galvanized steel wire(C) / Plain annealed copper wire(O) / bronze wire(B) - Coverage density : Min. 90% - A suitable separator tape(s) may be applied under/over the armour - Applied to Armoured & Sheath cable
Sheath	Y (I)	- Non-H/F type : ST2(Y) as per IEC 60092-359 - H/F type : SHF1(I) as per IEC 60092-359 - Outer sheath color : Black

Note. The other color of sheath and insulation may be applicable when purchaser require

0.6/1kV EXY, EOY, EBY, EXY(C), EOY(C), EBY(C), EXI, EOI, EBI, EXI(C), EOI(C), EBI(C)

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Armoured					
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Thickness of inner covering	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	mm	kg/km
1	1.5	7	1.7	0.7	1.0	6.2±0.4	60	1.0	5.2±0.4	0.3	1.1	9.0±0.4	135
	2.5	7	2.2	0.7	1.0	6.6±0.4	70	1.0	5.6±0.4	0.3	1.1	9.4±0.4	150
	4	7	2.7	0.7	1.0	7.2±0.4	90	1.0	6.2±0.4	0.3	1.1	10.0±0.4	180
	6	7	3.3	0.7	1.0	7.7±0.4	115	1.0	6.7±0.4	0.3	1.1	10.5±0.4	205
	10	7	4.2	0.7	1.1	8.9±0.4	165	1.0	7.7±0.4	0.3	1.2	11.7±0.5	270
	16	7	5.3	0.7	1.1	9.9±0.4	230	1.0	8.7±0.4	0.3	1.2	12.7±0.5	350
	25	7	6.6	0.9	1.2	11.8±0.5	350	1.0	10.4±0.4	0.3	1.3	14.6±0.6	485
	35	7	7.9	0.9	1.2	13.2±0.5	455	1.0	11.8±0.5	0.3	1.3	16.0±0.6	610
	50	19	9.1	1.0	1.3	14.8±0.6	595	1.0	13.2±0.5	0.3	1.4	17.6±0.7	765
	70	19	11.0	1.1	1.4	17.0±0.7	825	1.0	15.2±0.6	0.3	1.5	19.8±0.8	1,020
	95	19	12.9	1.1	1.4	18.9±0.8	1,095	1.0	17.1±0.7	0.3	1.5	21.7±0.9	1,310
	120	37	14.5	1.2	1.5	20.9±0.8	1,360	1.0	18.9±0.8	0.3	1.6	23.7±0.9	1,600
	150	37	16.2	1.4	1.6	23.1±0.9	1,665	1.0	20.9±0.8	0.3	1.7	25.9±1.0	1,925
	185	37	18.0	1.6	1.7	25.5±1.0	2,060	1.0	23.1±0.9	0.3	1.8	28.3±1.1	2,345
	240	61	20.6	1.7	1.8	28.6±1.1	2,665	1.0	26.0±1.0	0.3	1.9	31.4±1.3	2,985
	300	61	23.1	1.8	1.9	31.4±1.3	3,290	1.2	28.8±1.2	0.3	2.0	34.4±1.4	3,655
	400	61	26.1	2.0	2.0	35.0±1.4	4,165	1.2	32.2±1.3	0.4	2.2	38.6±1.5	4,670
	500	61	29.2	2.2	2.2	38.9±1.6	5,210	1.2	35.7±1.4	0.4	2.3	42.3±1.7	5,755
	630	91	33.2	2.4	2.3	43.5±1.7	6,660	1.4	40.4±1.6	0.4	2.5	47.4±1.9	7,310

Fire resistance

Power & Lighting Cable with / without collective screen

0.6/1kV EXY, ECY, EOY, EBY, EXY(C), ECY(C), EOY(C), EBY(C), EXI, ECI, EOI, EBI, EXI(C), ECI(C), EOI(C), EBI(C)

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Armoured					
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Thickness of inner covering	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	mm	kg/km
2	1.5	7	1.7	0.7	1.1	10.6±0.4	130	1.0	9.4±0.4	0.3	1.2	13.4±0.5	245
	2.5	7	2.2	0.7	1.2	11.6±0.5	165	1.0	10.2±0.4	0.3	1.3	14.4±0.6	290
	4	7	2.7	0.7	1.2	12.8±0.5	210	1.0	11.4±0.5	0.3	1.3	15.6±0.6	355
	6	7	3.3	0.7	1.2	13.8±0.6	265	1.0	12.4±0.5	0.3	1.4	16.8±0.7	425
	10	7	4.2	0.7	1.3	16.0±0.6	385	1.0	14.4±0.6	0.3	1.4	18.8±0.8	555
	16	7	5.3	0.7	1.4	18.2±0.7	540	1.0	16.4±0.7	0.3	1.5	21.0±0.8	730
	25	7	6.6	0.9	1.5	21.8±0.9	805	1.0	19.8±0.8	0.3	1.6	24.6±1.0	1,040
	35	7	7.9	0.9	1.7	25.0±1.0	1,085	1.0	22.6±0.9	0.3	1.8	27.8±1.1	1,340
	50	19	9.1	1.0	1.8	28.0±1.1	1,400	1.0	25.4±1.0	0.3	1.9	30.8±1.2	1,690
	70	19	11.0	1.1	1.9	32.2±1.3	1,930	1.2	29.6±1.2	0.3	2.0	35.2±1.4	2,275
	95	19	12.9	1.1	2.1	36.4±1.5	2,565	1.2	33.4±1.3	0.4	2.2	39.8±1.6	3,035
	120	37	14.5	1.2	2.2	40.2±1.6	3,180	1.4	37.3±1.5	0.4	2.4	44.1±1.8	3,745
	150	37	16.2	1.4	2.4	44.6±1.8	3,900	1.4	41.3±1.7	0.4	2.5	48.3±1.9	4,505
	185	37	18.0	1.6	2.6	49.4±2.0	4,835	1.4	45.7±1.8	0.4	2.7	53.1±2.1	5,505
	240	61	20.6	1.7	2.8	55.6±2.2	6,245	1.6	51.7±2.1	0.4	2.9	59.5±2.4	7,015
	300	61	23.1	1.8	3.0	61.2±2.4	7,710	1.6	56.9±2.3	0.4	3.1	65.1±2.6	8,555
2C	25	7	6.6	0.9	1.6	23.1±0.9	1,005	1.0	21.3±0.9	0.3	1.7	26.3±1.1	1,270
Earth	16	7	5.3	0.7									
2C	35	7	7.9	0.9	1.7	26.4±1.1	1,375	1.0	24.±1.0	0.3	1.8	29.6±1.2	1,675
Earth	25	7	6.6	0.7									
2C	50	19	9.1	1.0	1.8	29.3±1.2	1,695	1.2	27.4±1.1	0.3	2.0	33.0±1.3	2,055
Earth	25	7	6.6	0.9									
2C	70	19	11.0	1.1	2.0	33.9±1.4	2,340	1.2	31.6±1.3	0.4	2.1	37.8±1.5	2,815
Earth	35	7	7.9	0.9									
2C	95	19	12.9	1.1	2.1	38.1±1.5	3,090	1.2	35.6±1.4	0.4	2.3	42.2±1.7	3,645
Earth	50	19	9.1	1.0									
2C	120	37	14.5	1.2	2.3	42.4±1.7	3,940	1.4	39.8±1.6	0.4	2.5	46.8±1.9	4,580
Earth	70	19	11.0	1.1									
2C	150	37	16.2	1.4	2.5	47.1±1.9	4,920	1.4	44.1±1.8	0.4	2.6	51.3±2.1	5,610
Earth	95	19	12.9	1.1									
2C	185	37	18.0	1.6	2.6	51.6±2.1	5,840	1.6	48.8±2.0	0.4	2.8	56.4±2.3	6,655
Earth	95	19	12.9	1.1									
2C	240	61	20.6	1.7	2.9	58.3±2.3	7,525	1.6	54.9±2.2	0.4	3.1	63.1±2.5	8,440
Earth	120	37	14.5	1.2									
2C	300	61	23.1	1.8	3.1	64.2±2.6	9,275	1.6	60.4±2.4	0.4	3.3	69.0±2.8	10,285
Earth	150	37	16.2	1.4									

HIS CABLE

IEC 60092-350, 353, 354, 376

0.6/1kV EXY, ECY, EOY, EBY, EXY(C), ECY(C), EOY(C), EBY(C), EXI, ECI, EOI, EBI, EXI(C), ECI(C), EOI(C), EBI(C)

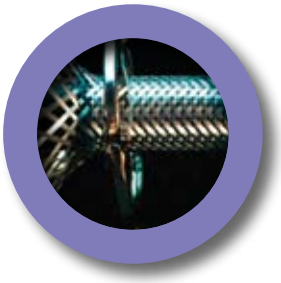
No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Armoured					
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Thickness of inner covering	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	mm	kg/km
3	1.5	7	1.7	0.7	1.2	11.4±0.5	165	1.0	10.0±0.4	0.3	1.3	14.2±0.6	290
	2.5	7	2.2	0.7	1.2	12.3±0.5	205	1.0	10.9±0.4	0.3	1.3	15.±0.6	345
	4	7	2.7	0.7	1.2	13.6±0.5	270	1.0	12.2±0.5	0.3	1.3	16.4±0.7	420
	6	7	3.3	0.7	1.3	14.9±0.6	355	1.0	13.3±0.5	0.3	1.4	17.7±0.7	515
	10	7	4.2	0.7	1.4	17.2±0.7	515	1.0	15.4±0.6	0.3	1.5	20.0±0.8	695
	16	7	5.3	0.7	1.5	19.0±0.8	730	1.0	17.6±0.7	0.3	1.6	22.4±0.9	940
	25	7	6.6	0.9	1.6	23.4±0.9	1,100	1.0	21.2±0.8	0.3	1.7	26.2±1.0	1,345
	35	7	7.9	0.9	1.7	26.6±1.1	1,465	1.0	24.2±1.0	0.3	1.8	29.4±1.2	1,740
	50	19	9.1	1.0	1.8	29.9±1.2	1,910	1.2	27.5±1.1	0.3	2.0	33.1±1.3	2,245
	70	19	11.0	1.1	2.0	34.6±1.4	2,660	1.2	31.8±1.3	0.4	2.1	38.0±1.5	3,110
	95	19	12.9	1.1	2.2	39.1±1.6	3,555	1.2	35.9±1.4	0.4	2.3	42.5±1.7	4,060
	120	37	14.5	1.2	2.3	43.1±1.7	4,420	1.4	40.0±1.6	0.4	2.5	47.0±1.9	5,020
	150	37	16.2	1.4	2.5	47.9±1.9	5,420	1.4	44.4±1.8	0.4	2.6	51.6±2.1	6,065
	185	37	18.0	1.6	2.7	53.0±2.1	6,725	1.6	49.3±2.0	0.4	2.8	56.9±2.3	7,460
	240	61	20.6	1.7	2.9	59.6±2.4	8,700	1.6	55.5±2.2	0.4	3.1	63.7±2.5	9,550
	300	61	23.1	1.8	3.2	65.8±2.6	10,785	1.6	61.1±2.4	0.4	3.3	69.7±2.8	11,695
3C	25	7	6.6	0.9	1.7	25.2±1.0	1,305	1.0	23.2±0.9	0.3	1.8	28.4±1.1	1,590
Earth	16	7	5.3	0.7									
3C	35	7	7.9	0.9	1.8	28.9±1.2	1,775	1.2	27.0±1.1	0.3	1.9	32.4±1.3	2,120
Earth	25	7	6.6	0.7									
3C	50	19	9.1	1.0	1.9	31.8±1.3	2,220	1.2	29.7±1.2	0.3	2.0	35.3±1.4	2,595
Earth	25	7	6.6	0.9									
3C	70	19	11.0	1.1	2.1	36.7±1.5	3,075	1.2	34.2±1.4	0.4	2.2	40.6±1.6	3,590
Earth	35	7	7.9	0.9									
3C	95	19	12.9	1.1	2.3	41.4±1.7	4,100	1.4	38.8±1.6	0.4	2.4	45.6±1.8	4,705
Earth	50	19	9.1	1.0									
3C	120	37	14.5	1.2	2.4	46.1±1.8	5,185	1.4	43.3±1.7	0.4	2.6	50.5±2.0	5,875
Earth	70	19	11.0	1.1									
3C	150	37	16.2	1.4	2.6	51.2±2.0	6,450	1.6	48.4±1.9	0.4	2.8	56.0±2.2	7,260
Earth	95	19	12.9	1.1									
3C	185	37	18.0	1.6	2.8	55.8±2.2	7,755	1.6	52.6±2.1	0.4	3.0	60.6±2.4	8,635
Earth	95	19	12.9	1.1									
3C	240	61	20.6	1.7	3.1	62.9±2.5	10,010	1.6	59.1±2.4	0.4	3.2	67.5±2.7	10,970
Earth	120	37	14.5	1.2									
3C	300	61	23.1	1.8	3.3	69.3±2.8	12,365	1.8	65.4±2.6	0.4	3.5	74.4±3.0	13,490
Earth	150	37	16.2	1.4									

Fire resistance

Power & Lighting Cable with / without collective screen

0.6/1kV EXY, ECY, EOY, EBY, EXY(C), ECY(C), EOY(C), EBY(C), EXI, ECI, EOI, EBI, EXI(C), ECI(C), EOI(C), EBI(C)

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Armoured					
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Thickness of inner covering	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	mm	kg/km
4	1.5	7	1.7	0.7	1.2	12.5±0.5	205	1.0	11.1±0.4	0.3	1.3	15.3±0.6	345
	2.5	7	2.2	0.7	1.2	13.4±0.5	255	1.0	12.0±0.5	0.3	1.3	16.2±0.6	405
	4	7	2.7	0.7	1.3	15.1±0.6	350	1.0	13.5±0.5	0.3	1.4	17.9±0.7	510
	6	7	3.3	0.7	1.3	16.3±0.7	445	1.0	14.7±0.6	0.3	1.4	19.1±0.8	620
	10	7	4.2	0.7	1.4	18.9±0.8	655	1.0	17.1±0.7	0.3	1.5	21.7±0.9	855
	16	7	5.3	0.7	1.5	21.5±0.9	935	1.0	19.5±0.8	0.3	1.6	24.3±1.0	1,160
	25	7	6.6	0.9	1.7	26.0±1.0	1,425	1.0	23.6±0.9	0.3	1.8	28.8±1.2	1,695
	35	7	7.9	0.9	1.8	29.6±1.2	1,900	1.2	27.2±1.1	0.3	1.9	32.6±1.3	2,220
	50	19	9.1	1.0	2.0	33.4±1.3	2,495	1.2	30.6±1.2	0.4	2.1	36.8±1.5	2,925
	70	19	11.0	1.1	2.2	38.6±1.5	3,475	1.2	35.4±1.4	0.4	2.3	42.0±1.7	3,975
	95	19	12.9	1.1	2.3	43.4±1.7	4,630	1.4	40.3±1.6	0.4	2.5	47.3±1.9	5,235
	120	37	14.5	1.2	2.5	48.1±1.9	5,780	1.4	44.6±1.8	0.4	2.7	52.0±2.1	6,450
	150	37	16.2	1.4	2.7	53.4±2.1	7,085	1.6	49.7±2.0	0.4	2.9	57.5±2.3	7,850
	185	37	18.0	1.6	2.9	59.1±2.4	8,800	1.6	55.0±2.2	0.4	3.1	63.2±2.5	9,640
	240	61	20.6	1.7	3.2	66.7±2.7	11,415	1.8	62.3±2.5	0.4	3.4	71.1±2.8	12,405
	300	61	23.1	1.8	3.5	73.5±2.9	14,145	1.8	68.5±2.7	0.4	3.6	77.7±3.1	15,200
4C	25	7	6.6	0.9	1.8	28.5±1.1	1,635	1.0	26.3±1.1	0.3	1.9	31.7±1.3	1,955
Earth	16	7	5.3	0.7									
4C	35	7	7.9	0.9	1.9	32.6±1.3	2,220	1.2	30.5±1.2	0.4	2.1	36.7±1.5	2,695
Earth	25	7	6.6	0.7									
4C	50	19	9.1	1.0	2.1	36.4±1.5	2,815	1.2	33.9±1.4	0.4	2.2	40.3±1.6	3,325
Earth	25	7	6.6	0.9									
4C	70	19	11.0	1.1	2.3	42.1±.7	3,905	1.4	39.5±1.6	0.4	2.5	46.5±1.9	4,540
Earth	35	7	7.9	0.9									
4C	95	19	12.9	1.1	2.5	47.5±1.9	5,210	1.4	44.5±1.8	0.4	2.7	51.9±2.1	5,925
Earth	50	19	9.1	1.0									
4C	120	37	14.5	1.2	2.7	52.8±2.1	6,585	1.6	49.8±2.0	0.4	2.9	57.6±2.3	7,420
Earth	70	19	11.0	1.1									
4C	150	37	16.2	1.4	2.9	58.7±2.3	8,165	1.6	55.3±2.2	0.4	3.1	63.5±2.5	9,090
Earth	95	19	12.9	1.1									
4C	185	37	18.0	1.6	3.1	64.4±2.6	9,880	1.6	60.6±2.4	0.4	3.3	69.2±2.8	10,895
Earth	95	19	12.9	1.1									
4C	240	61	20.6	1.7	3.4	72.5±2.9	12,765	1.8	68.4±2.7	0.4	3.6	77.6±3.1	13,945
Earth	120	37	14.5	1.2									
4C	300	61	23.1	1.8	3.7	80.1±3.2	15,800	1.8	75.4±3.0	0.4	3.9	85.2±3.4	17,100
Earth	150	37	16.2	1.4									
5	1.5	7	1.7	0.7	1.2	12.7±0.7	220	1.0	11.5±0.6	0.3	1.3	15.7±0.8	370
	2.5	7	2.2	0.7	1.2	13.8±0.7	290	1.0	12.6±0.7	0.3	1.4	17.0±0.8	460
	4	7	2.7	0.7	1.3	15.6±0.8	400	1.0	14.2±0.7	0.3	1.4	18.6±0.9	580
	6	7	3.3	0.7	1.4	17.1±0.8	520	1.0	15.5±0.8	0.3	1.5	20.1±0.9	720
6	1.5	7	1.7	0.7	1.2	13.8±0.7	260	1.0	12.6±0.7	0.3	1.4	17.0±0.8	430
	2.5	7	2.2	0.7	1.3	15.2±0.8	350	1.0	13.8±0.7	0.3	1.4	18.2±0.8	520
	4	7	2.7	0.7	1.4	17.2±0.8	480	1.0	15.6±0.8	0.3	1.5	20.2±0.9	670
	6	7	3.3	0.7	1.4	18.7±0.9	620	1.0	17.1±0.8	0.3	1.5	21.7±1.0	830
10	1.5	7	1.7	0.7	1.4	17.9±0.8	430	1.0	16.3±0.8	0.3	1.5	20.9±0.9	630
	2.5	7	2.2	0.7	1.5	19.7±0.9	560	1.0	17.9±0.8	0.3	1.6	22.7±1.0	780
	4	7	2.7	0.7	1.6	22.3±1.0	780	1.0	20.3±0.9	0.3	1.7	25.3±1.1	1,030
	6	7	3.3	0.7	1.6	24.3±1.0	1,010	1.0	22.3±1.0	0.3	1.7	27.3±1.1	1,280





Control Cable





Flame Retardant

Non-H/F TYPE

- 250V PXY, POY
- 250V PXY(C), POY(C)

H/F TYPE

- 250V PXI, POI
- 250V PXI(C), POI(C) **22 ~ 23**

Fire Resistance

Non-H/F TYPE

- 250V EXY, EOY
- 250V EXY(C), EOY(C)

H/F TYPE

- 250V EXI, EOI
- 250V EXI(C), EOI(C) **24 ~ 25**

Flame retardant

Control Cable with / without collective screen



Cable Designation

Non-H/F TYPE	H/F TYPE
- 250V PXY, POY	- 250V PXI, POI
- 250V PXY(C), POY(C)	- 250V PXI(C), POI(C)

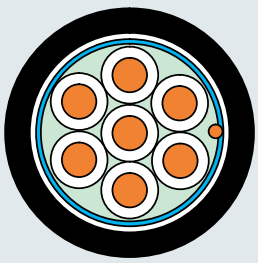
Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, HF HEPR
- Sheath material : IEC 60092-359, ST2 or SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5% ↓ (For Halogen free cable only)
- Smoke emission : IEC 61034, 60% ↑ (For Halogen free cable only)
- Fluorine content : IEC 60684-2, 0.1% ↓ (For Halogen free cable only)
- pH and conductivity : IEC 60754-2, pH (4.3 ↑) & Conductivity (10㎲/mm ↓) (For Halogen free cable only)
- Cold bend/impact (Option) : CSA 22.2 NO. 0.3 (-40℃/-35℃) (Same as IEC 60092-350, 8.9)
- Oil resistant (Option) : IEEE 1580 TYPE "T", at 70℃x4h (For PVC sheath material only)
- Paint resistant (Option): Maker standard (Epoxy, Alkyd paint, at 100℃x168h) (For PVC sheath material only)
- Max. rated conductor temperature : 90℃

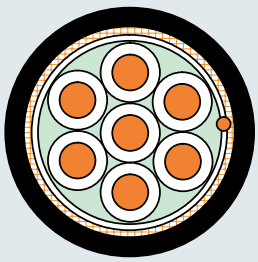
Core Identification

- Black number on white insulation

Construction



PXI(C) (7C)



POY (7C)

Classification	Code	Construction detail
Conductor		- Stranded tinned annealed copper wires as per IEC 60228, Class 2
Insulation	P	- HF HEPR 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
Collective screen	(C)	- AL/PS Tape with drain wire - A suitable tape may be applied on the collective screen - Applied to Screened cable
Inner covering		- Lapped covering - Applied to Armoured & Sheath cable
Armour	O	- Braid of Plain annealed copper wire - Coverage density : Min. 90% - A suitable separator tape(s) may be applied under/over the armour - Applied to Armoured & Sheath cable
Sheath	Y (I)	- Non-H/F type : ST2(Y) as per IEC 60092-359 - H/F type : SHF1(I) as per IEC 60092-359 - Outer sheath color : Black

Note. The other color of sheath and insulation may be applicable when purchaser require

HIS CABLE

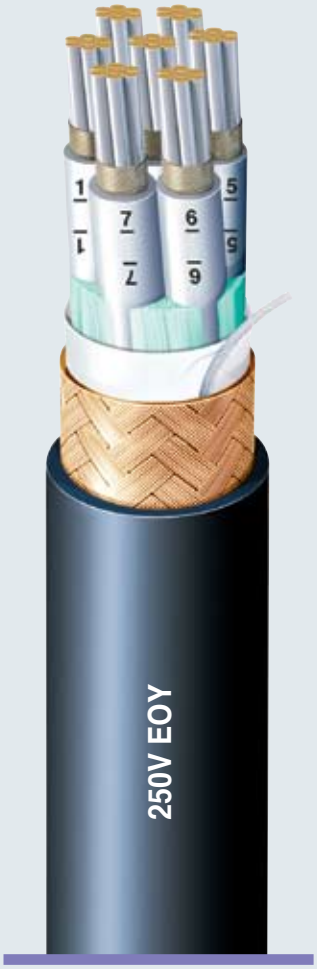
IEC 60092-350, 353, 354, 376

250V PXY, POY, PXY(C), POY(C), PXI, POI, PXI(C), POI(C)

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
2	1.0	7	1.4	0.5	1.0	7.6±0.4	80	5.6±0.4	0.2	1.1	9.1±0.4	130
3	1.0	7	1.4	0.5	1.0	8.0±0.4	100	6.0±0.4	0.2	1.1	9.5±0.4	150
4	1.0	7	1.4	0.5	1.1	8.9±0.4	120	6.7±0.4	0.2	1.1	10.2±0.4	175
5	1.0	7	1.4	0.5	1.1	9.6±0.4	145	7.4±0.4	0.2	1.1	10.9±0.4	200
7	1.0	7	1.4	0.5	1.1	10.4±0.4	180	8.2±0.4	0.2	1.2	11.9±0.5	245
9	1.0	7	1.4	0.5	1.2	12.2±0.5	230	9.8±0.4	0.2	1.2	13.5±0.5	305
12	1.0	7	1.4	0.5	1.2	13.6±0.5	280	11.2±0.4	0.3	1.3	15.6±0.6	420
16	1.0	7	1.4	0.5	1.3	15.2±0.6	365	12.6±0.5	0.3	1.4	17.2±0.7	515
19	1.0	7	1.4	0.5	1.3	16.0±0.6	410	13.4±0.5	0.3	1.4	18.0±0.7	565
23	1.0	7	1.4	0.5	1.4	17.8±0.7	505	15.0±0.6	0.3	1.5	19.8±0.8	675
27	1.0	7	1.4	0.5	1.4	19.2±0.8	575	16.4±0.7	0.3	1.5	21.2±0.8	760
33	1.0	7	1.4	0.5	1.5	20.8±0.8	690	17.8±0.7	0.3	1.6	22.8±0.9	890
37	1.0	7	1.4	0.5	1.5	21.6±0.9	750	18.6±0.7	0.3	1.6	23.6±0.9	965
44	1.0	7	1.4	0.5	1.6	24.4±1.0	900	21.2±0.8	0.3	1.7	26.4±1.1	1,140
77	1.0	7	1.4	0.5	1.9	30.6±1.2	1,515	26.8±1.1	0.3	1.9	32.4±1.3	1,795

Fire resistance

Control Cable with / without collective screen



Cable Designation

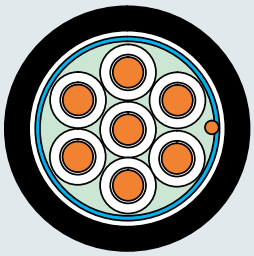
Non-H/F TYPE	H/F TYPE
- 250V EXY, EOY	- 250V EXI, EOI
- 250V EXY(C), EOY(C)	- 250V EXI(C), EOI(C)

Application Standard

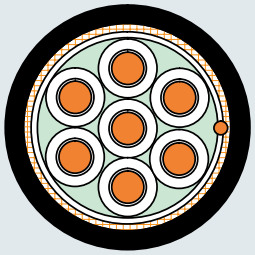
- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, HF HEPR
- Sheath material : IEC 60092-359, ST2 or SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Fire resistance : IEC 60331-21(90min)
  IEC 60331-1,-2(120min)
- Halogen content : IEC 60754-1, 0.5% ↓ (For Halogen free cable only)
- Smoke emission : IEC 61034, 60% ↑ (For Halogen free cable only)
- Fluorine content : IEC 60684-2, 0.1% ↓ (For Halogen free cable only)
- pH and conductivity : IEC 60754-2, pH (4.3 ↑) & Conductivity (10㎲/mm ↓)
  (For Halogen free cable only)
- Cold bend/impact (Option) : CSA 22.2 NO. 0.3 (-40℃/-35℃)
  (Same as IEC 60092-350, 8.9)
- Oil resistant (Option) : IEEE 1580 TYPE "T", at 70℃x4h
  (For PVC sheath material only)
- Paint resistant (Option): Maker standard (Epoxy, Alkyd paint, at 100℃x168h)
  (For PVC sheath material only)
- Max. rated conductor temperature : 90℃

Core Identification

- Black number on white insulation



EXI(C) (7C)



EOY (7C)

Construction

Classification	Code	Construction detail
Conductor	E	- Stranded tinned annealed copper wires as per IEC 60228, Class 2
Fire resisting layer		- Mica/glass tape
Insulation		- HF HEPR 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
Collective screen	(C)	- AL/PS Tape with drain wire - A suitable tape may be applied on the collective screen - Applied to Screened cable
Inner covering		- Lapped covering - Applied to Armoured & Sheath cable
Armour	O	- Braid of Plain annealed copper wire - Coverage density : Min. 90% - A suitable separator tape(s) may be applied under/over the armour - Applied to Armoured & Sheath cable
Sheath	Y (I)	- Non-H/F type : ST2(Y) as per IEC 60092-359 - H/F type : SHF1(I) as per IEC 60092-359 - Outer sheath color : Black

Note. The other color of sheath and insulation may be applicable when purchaser require

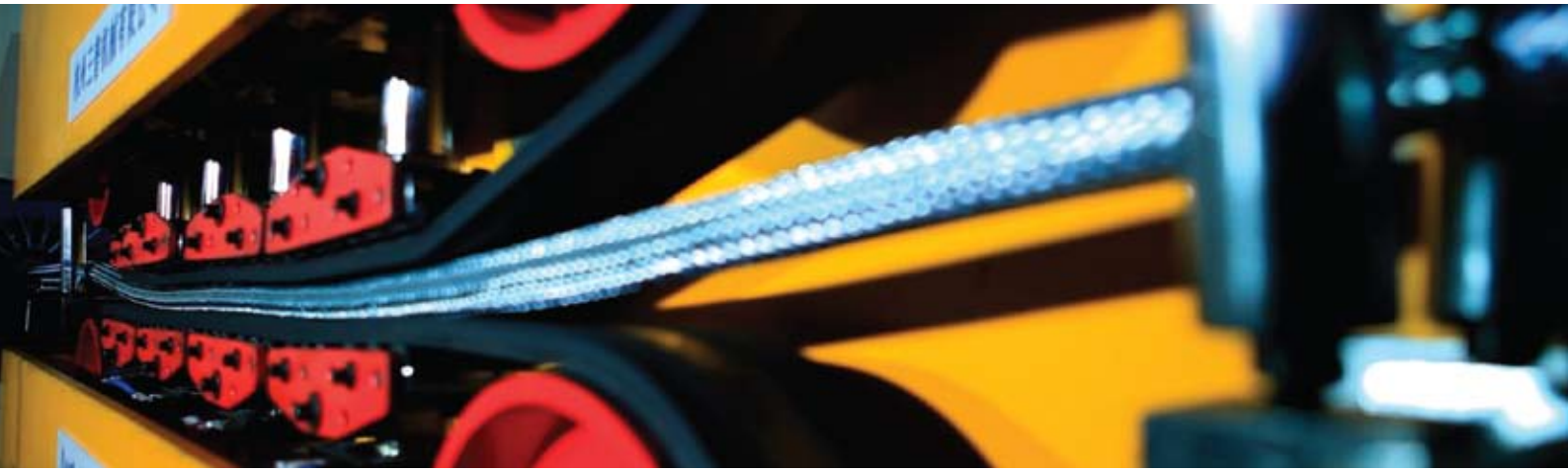
250V EXY, EOY, EXY(C), EOY(C), EXI, EOI, EXI(C), EOI(C)

No. of Cores	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
2	1.0	7	1.4	0.5	1.0	8.4±0.4	95	6.6±0.4	0.2	1.1	9.9±0.4	150
3	1.0	7	1.4	0.5	1.1	9.1±0.4	115	7.1±0.4	0.2	1.1	10.4±0.4	170
4	1.0	7	1.4	0.5	1.1	9.8±0.4	140	7.8±0.4	0.2	1.1	11.1±0.4	200
5	1.0	7	1.4	0.5	1.1	10.7±0.5	165	8.7±0.4	0.2	1.2	12.2±0.5	235
7	1.0	7	1.4	0.5	1.2	11.8±0.5	210	9.6±0.4	0.2	1.2	13.1±0.5	285
9	1.0	7	1.4	0.5	1.2	13.6±0.6	270	11.4±0.5	0.3	1.3	15.6±0.6	405
12	1.0	7	1.4	0.5	1.3	15.5±0.6	340	13.1±0.5	0.3	1.4	17.5±0.7	490
16	1.0	7	1.4	0.5	1.4	17.3±0.7	435	14.7±0.6	0.3	1.4	19.1±0.8	595
19	1.0	7	1.4	0.5	1.4	18.2±0.8	490	15.6±0.6	0.3	1.5	20.2±0.8	665
23	1.0	7	1.4	0.5	1.5	20.2±0.8	595	17.4±0.7	0.3	1.6	22.2±0.9	790
27	1.0	7	1.4	0.5	1.5	21.9±0.9	680	19.1±0.8	0.3	1.6	23.9±1.0	890
33	1.0	7	1.4	0.5	1.6	23.7±1.0	820	20.7±0.8	0.3	1.7	25.7±1.0	1,050
37	1.0	7	1.4	0.5	1.6	24.6±1.0	890	21.6±0.9	0.3	1.7	26.6±1.1	1,130
44	1.0	7	1.4	0.5	1.8	28.0±1.2	1,085	24.6±1.0	0.3	1.8	29.8±1.2	1,340
77	1.0	7	1.4	0.5	2.0	34.9±1.4	1,790	31.1±1.2	0.4	2.1	37.3±1.5	2,210





Instrumentation Cable



Flame Retardant



Non-H/F TYPE	H/F TYPE	
- 250V PXY(C)	- 250V PXI(C)	
- 250V POY(C)	- 250V POI(C)	**27 ~ 30**

Non-H/F TYPE	H/F TYPE	
- 250V PXY(I/C)	- 250V PXI(I/C)	
- 250V POY(I/C)	- 250V POI(I/C)	**31 ~ 34**

Fire Resistance

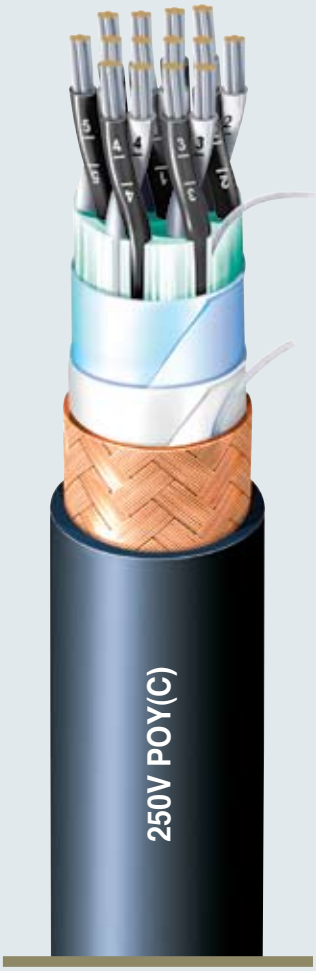
Non-H/F TYPE	H/F TYPE	
- 250V EXY(C)	- 250V EXI(C)	
- 250V EOY(C)	- 250V EOI(C)	**35 ~ 38**

Non-H/F TYPE	H/F TYPE	
- 250V EXY(I/C)	- 250V EXI(I/C)	
- 250V EOY(I/C)	- 250V EOI(I/C)	**39 ~ 42**

Flame retardant

Instrumentation Cable with collective screen

HIS CABLE
IEC 60092-350, 353, 354, 376



Cable Designation

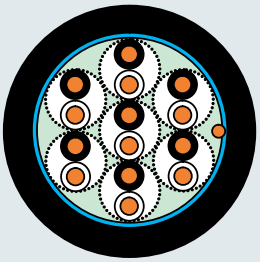
Non-H/F TYPE	H/F TYPE
- 250V PXY(C)	- 250V PXI(C)
- 250V POY(C)	- 250V POI(C)

Application Standard

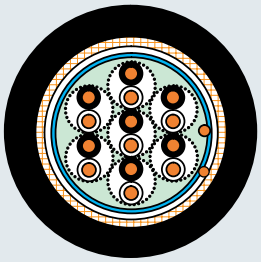
- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, HF HEPR
- Sheath material : IEC 60092-359, ST2 or SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5% ↓ (For Halogen free cable only)
- Smoke emission : IEC 61034, 60% ↑ (For Halogen free cable only)
- Fluorine content : IEC 60684-2, 0.1% ↓ (For Halogen free cable only)
- pH and conductivity : IEC 60754-2, pH (4.3 ↑) & Conductivity (10㎲/mm ↓) (For Halogen free cable only)
- Cold bend/impact (Option) : CSA 22.2 NO. 0.3 (-40℃/-35℃) (Same as IEC 60092-350, 8.9)
- Oil resistant (Option) : IEEE 1580 TYPE "T", at 70℃x4h (For PVC sheath material only)
- Paint resistant (Option): Maker standard (Epoxy, Alkyd paint, at 100℃x168h) (For PVC sheath material only)
- Max. rated conductor temperature : 90℃

Core Identification

- Colored insulation plus Arabic number printing on the insulation
  Pair : White, Black
  Triad : White, Black , Red



PXI(C) (7P)



POY(C) (7P)

Construction

Classification	Code	Construction detail
Conductor		- Stranded tinned annealed copper wires as per IEC 60228, Class 2
Insulation	P	- HF HEPR 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)	- AL/PS Tape with drain wire - A suitable tape may be applied on the collective screen
Inner covering		- Lapped covering - Applied to Armoured & Sheath cable
Armour	0	- Braid of Plain annealed copper wire - Coverage density : Min. 90% - A suitable separator tape(s) may be applied under/over the armour - Applied to Armoured & Sheath cable
Sheath	Y (I)	- Non-H/F type : ST2(Y) as per IEC 60092-359 - H/F type : SHF1(I) as per IEC 60092-359 - Outer sheath color : Black

Note. The other color of sheath and insulation may be applicable when purchaser require

Flame retardant

Instrumentation Cable with collective screen

250V PXY(C), POY(C), PXI(C), POI(C)

No. of Units	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
1P	0.75	7	1.2	0.5	1.0	7.2±0.4	70	5.4±0.4	0.2	1.1	8.7±0.4	120
2P	0.75	7	1.2	0.5	1.2	10.9±0.4	140	8.9±0.4	0.2	1.2	12.4±0.5	210
3P	0.75	7	1.2	0.5	1.2	11.7±0.5	170	9.5±0.4	0.2	1.2	13.0±0.5	240
4P	0.75	7	1.2	0.5	1.2	12.7±0.5	205	10.5±0.4	0.3	1.3	14.7±0.6	330
5P	0.75	7	1.2	0.5	1.3	14.1±0.6	245	11.7±0.5	0.3	1.3	15.9±0.6	380
7P	0.75	7	1.2	0.5	1.3	15.3±0.6	300	12.9±0.5	0.3	1.4	17.3±0.7	455
10P	0.75	7	1.2	0.5	1.5	18.7±0.7	415	16.1±0.6	0.3	1.5	20.7±0.8	595
12P	0.75	7	1.2	0.5	1.5	19.7±0.8	480	16.9±0.7	0.3	1.5	21.5±0.9	660
14P	0.75	7	1.2	0.5	1.5	21.0±0.8	540	18.2±0.7	0.3	1.6	23.0±0.9	745
15P	0.75	7	1.2	0.5	1.6	21.6±0.9	580	18.8±0.8	0.3	1.6	23.6±0.9	790
19P	0.75	7	1.2	0.5	1.7	24.1±1.0	690	21.1±0.8	0.3	1.7	26.1±1.0	925
20P	0.75	7	1.2	0.5	1.7	24.6±1.0	740	21.6±0.9	0.3	1.7	26.6±1.1	980
24P	0.75	7	1.2	0.5	1.8	26.8±1.1	860	23.6±0.9	0.3	1.8	28.8±1.2	1,125
27P	0.75	7	1.2	0.5	1.8	28.4±1.1	965	25.0±1.0	0.3	1.9	30.4±1.2	1,240
30P	0.75	7	1.2	0.5	1.9	29.7±1.2	1,055	26.3±1.1	0.3	1.9	31.7±1.3	1,340
33P	0.75	7	1.2	0.5	1.9	31.2±1.2	1,160	27.6±1.1	0.3	2.0	33.2±1.3	1,460
37P	0.75	7	1.2	0.5	2.0	33.0±1.3	1,275	29.2±1.2	0.3	2.0	34.8±1.4	1,575
48P	0.75	7	1.2	0.5	2.2	37.1±1.5	1,620	33.1±1.3	0.4	2.2	39.5±1.6	2,065
1P	1.0	7	1.4	0.5	1.0	7.6±0.4	85	5.8±0.4	0.2	1.1	9.1±0.4	135
2P	1.0	7	1.4	0.5	1.2	11.7±0.5	165	9.5±0.4	0.2	1.2	13.0±0.5	240
3P	1.0	7	1.4	0.5	1.2	12.4±0.5	200	10.2±0.4	0.3	1.3	14.4±0.6	325
4P	1.0	7	1.4	0.5	1.2	13.6±0.5	245	11.4±0.5	0.3	1.3	15.6±0.6	380
5P	1.0	7	1.4	0.5	1.3	15.1±0.6	295	12.7±0.5	0.3	1.4	17.1±0.7	445
7P	1.0	7	1.4	0.5	1.3	16.4±0.7	370	14.0±0.6	0.3	1.4	18.4±0.7	530
10P	1.0	7	1.4	0.5	1.5	20.1±0.8	510	17.3±0.7	0.3	1.5	21.9±0.9	695
12P	1.0	7	1.4	0.5	1.5	21.1±0.8	580	18.3±0.7	0.3	1.6	23.1±0.9	785
14P	1.0	7	1.4	0.5	1.6	22.7±0.9	670	19.7±0.8	0.3	1.6	24.5±1.0	875
15P	1.0	7	1.4	0.5	1.6	23.3±0.9	720	20.3±0.8	0.3	1.7	25.3±1.0	945
19P	1.0	7	1.4	0.5	1.7	26.0±1.0	855	22.8±0.9	0.3	1.8	28.0±1.1	1,110
20P	1.0	7	1.4	0.5	1.7	26.6±1.1	925	23.4±0.9	0.3	1.8	28.6±1.1	1,180
24P	1.0	7	1.4	0.5	1.8	28.9±1.2	1,075	25.5±1.0	0.3	1.9	30.9±1.2	1,355
27P	1.0	7	1.4	0.5	1.9	30.6±1.2	1,200	27.0±1.1	0.3	1.9	32.4±1.3	1,475
30P	1.0	7	1.4	0.5	1.9	32.1±1.3	1,310	28.5±1.1	0.3	2.0	34.1±1.4	1,620
33P	1.0	7	1.4	0.5	2.0	33.6±1.3	1,440	29.8±1.2	0.3	2.0	35.4±1.4	1,745
37P	1.0	7	1.4	0.5	2.0	35.3±1.4	1,570	31.5±1.3	0.4	2.1	37.7±1.5	1,995
48P	1.0	7	1.4	0.5	2.2	40.0±1.6	2,020	35.8±1.4	0.4	2.3	42.4±1.7	2,500

Flame retardant

Instrumentation Cable with individual & collective screen

HIS CABLE

IEC 60092-350, 353, 354, 376

250V PXY(C), POY(C), PXI(C), POI(C)

No. of Units	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
1P	1.5	7	1.7	0.6	1.1	8.8±0.4	110	6.8±0.4	0.2	1.1	10.1±0.4	160
2P	1.5	7	1.7	0.6	1.2	13.4±0.5	215	11.2±0.4	0.3	1.3	15.4±0.6	350
3P	1.5	7	1.7	0.6	1.3	14.4±0.6	270	12.0±0.5	0.3	1.3	16.2±0.6	405
4P	1.5	7	1.7	0.6	1.3	15.8±0.6	330	13.4±0.5	0.3	1.4	17.8±0.7	485
5P	1.5	7	1.7	0.6	1.4	17.6±0.7	405	15.0±0.6	0.3	1.5	19.6±0.8	575
7P	1.5	7	1.7	0.6	1.4	19.1±0.8	500	16.5±0.7	0.3	1.5	21.1±0.8	685
10P	1.5	7	1.7	0.6	1.6	23.5±0.9	695	20.5±0.8	0.3	1.7	25.5±1.0	925
12P	1.5	7	1.7	0.6	1.6	24.6±1.0	795	21.6±0.9	0.3	1.7	26.6±1.1	1,035
14P	1.5	7	1.7	0.6	1.7	26.5±1.1	920	23.3±0.9	0.3	1.8	28.5±1.1	1,175
15P	1.5	7	1.7	0.6	1.7	27.3±1.1	990	24.1±1.0	0.3	1.8	29.3±1.2	1,255
19P	1.5	7	1.7	0.6	1.9	30.7±1.2	1,195	27.1±1.1	0.3	1.9	32.5±1.3	1,470
20P	1.5	7	1.7	0.6	1.9	31.3±1.3	1,285	27.7±1.1	0.3	2.0	33.3±1.3	1,585
24P	1.5	7	1.7	0.6	2.0	34.1±1.4	1,500	30.3±1.2	0.4	2.1	36.5±1.5	1,905
27P	1.5	7	1.7	0.6	2.1	36.1±1.4	1,670	32.1±1.3	0.4	2.2	38.5±1.5	2,100
30P	1.5	7	1.7	0.6	2.1	37.8±1.5	1,830	33.8±1.4	0.4	2.2	40.2±1.6	2,280
33P	1.5	7	1.7	0.6	2.2	39.6±1.6	2,010	35.4±1.4	0.4	2.3	42.0±1.7	2,485
37P	1.5	7	1.7	0.6	2.3	41.9±1.7	2,210	37.5±1.5	0.4	2.4	44.3±1.8	2,710
48P	1.5	7	1.7	0.6	2.5	47.4±1.9	2,845	42.6±1.7	0.4	2.6	49.8±2.0	3,410
1T	0.75	7	1.2	0.5	1.0	7.6±0.4	85	5.8±0.4	0.2	1.1	9.1±0.4	135
2T	0.75	7	1.2	0.5	1.2	12.0±0.5	180	9.8±0.4	0.2	1.2	13.3±0.5	250
3T	0.75	7	1.2	0.5	1.2	12.7±0.5	215	10.5±0.4	0.3	1.3	14.7±0.6	345
4T	0.75	7	1.2	0.5	1.3	14.1±0.6	270	11.7±0.5	0.3	1.3	15.9±0.6	405
5T	0.75	7	1.2	0.5	1.3	15.6±0.6	330	13.2±0.5	0.3	1.4	17.6±0.7	480
7T	0.75	7	1.2	0.5	1.4	17.7±0.7	420	15.1±0.6	0.3	1.5	19.7±0.8	590
10T	0.75	7	1.2	0.5	1.5	21.5±0.9	575	18.7±0.7	0.3	1.6	23.5±0.9	780
12T	0.75	7	1.2	0.5	1.6	22.4±0.9	660	19.4±0.8	0.3	1.6	24.2±1.0	865
14T	0.75	7	1.2	0.5	1.6	23.9±1.0	750	20.9±0.8	0.3	1.7	25.9±1.0	985
15T	0.75	7	1.2	0.5	1.6	24.6±1.0	805	21.6±0.9	0.3	1.7	26.6±1.1	1,050
19T	0.75	7	1.2	0.5	1.8	27.6±1.1	985	24.2±1.0	0.3	1.8	29.4±1.2	1,235
20T	0.75	7	1.2	0.5	1.8	28.2±1.1	1,055	24.8±1.0	0.3	1.8	30.0±1.2	1,310
24T	0.75	7	1.2	0.5	1.9	30.8±1.2	1,230	27.2±1.1	0.3	1.9	32.6±1.3	1,510
27T	0.75	7	1.2	0.5	1.9	32.4±1.3	1,360	28.8±1.2	0.3	2.0	34.4±1.4	1,670
30T	0.75	7	1.2	0.5	2.0	34.1±1.4	1,505	30.3±1.2	0.4	2.1	36.5±1.5	1,915
33T	0.75	7	1.2	0.5	2.1	35.7±1.4	1,650	31.7±1.3	0.4	2.1	37.9±1.5	2,060
37T	0.75	7	1.2	0.5	2.1	37.6±1.5	1,805	33.6±1.3	0.4	2.2	40.0±1.6	2,255
48T	0.75	7	1.2	0.5	2.3	42.5±1.7	2,320	38.1±1.5	0.4	2.4	44.9±1.8	2,830

Flame retardant

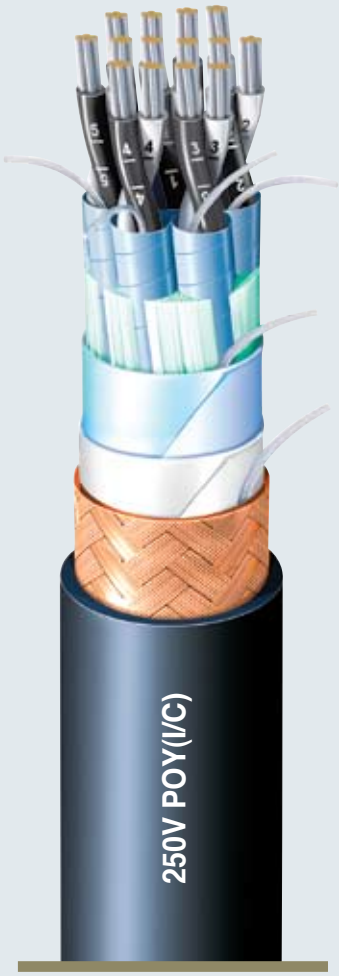
Instrumentation Cable with individual & collective screen

250V PXY(C), POY(C), PXI(C), POI(C)

No. of Units	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
1T	1.0	7	1.4	0.5	1.0	8.0±0.4	100	6.2±0.4	0.2	1.1	9.5±0.4	155
2T	1.0	7	1.4	0.5	1.2	12.8±0.5	210	10.6±0.4	0.3	1.3	14.8±0.6	340
3T	1.0	7	1.4	0.5	1.2	13.6±0.5	260	11.4±0.5	0.3	1.3	15.6±0.6	395
4T	1.0	7	1.4	0.5	1.3	15.1±0.6	330	12.7±0.5	0.3	1.4	17.1±0.7	475
5T	1.0	7	1.4	0.5	1.4	16.8±0.7	405	14.2±0.6	0.3	1.4	18.6±0.7	555
7T	1.0	7	1.4	0.5	1.4	18.9±0.8	510	16.3±0.7	0.3	1.5	20.9±0.8	690
10T	1.0	7	1.4	0.5	1.6	23.2±0.9	710	20.2±0.8	0.3	1.7	25.2±1.0	940
12T	1.0	7	1.4	0.5	1.6	24.0±1.0	810	21.0±0.8	0.3	1.7	26.0±1.0	1,045
14T	1.0	7	1.4	0.5	1.7	25.8±1.0	940	22.6±0.9	0.3	1.8	27.8±1.1	1,185
15T	1.0	7	1.4	0.5	1.7	26.6±1.1	1,010	23.4±0.9	0.3	1.8	28.6±1.1	1,265
19T	1.0	7	1.4	0.5	1.8	29.6±1.2	1,210	26.2±1.0	0.3	1.9	31.6±1.3	1,495
20T	1.0	7	1.4	0.5	1.9	30.5±1.2	1,310	26.9±1.1	0.3	1.9	32.3±1.3	1,585
24T	1.0	7	1.4	0.5	2.0	33.2±1.3	1,535	29.4±1.2	0.3	2.0	35.0±1.4	1,835
27T	1.0	7	1.4	0.5	2.0	34.9±1.4	1,695	31.1±1.2	0.4	2.1	37.3±1.5	2,115
30T	1.0	7	1.4	0.5	2.1	36.7±1.5	1,875	32.7±1.3	0.4	2.2	39.1±1.6	2,315
33T	1.0	7	1.4	0.5	2.2	38.5±1.5	2,060	34.3±1.4	0.4	2.2	40.7±1.6	2,505
37T	1.0	7	1.4	0.5	2.2	40.5±1.6	2,255	36.3±1.5	0.4	2.3	42.9±1.7	2,740
48T	1.0	7	1.4	0.5	2.4	45.8±1.8	2,905	41.2±1.6	0.4	2.5	48.2±1.9	3,450
1T	1.5	7	1.7	0.6	1.1	9.3±0.4	135	7.3±0.4	0.2	1.1	10.6±0.4	190
2T	1.5	7	1.7	0.6	1.3	14.9±0.6	280	12.5±0.5	0.3	1.4	16.9±0.7	430
3T	1.5	7	1.7	0.6	1.3	15.8±0.6	355	13.4±0.5	0.3	1.4	17.8±0.7	510
4T	1.5	7	1.7	0.6	1.4	17.6±0.7	450	15.0±0.6	0.3	1.5	19.6±0.8	615
5T	1.5	7	1.7	0.6	1.5	19.6±0.8	550	16.8±0.7	0.3	1.5	21.4±0.9	725
7T	1.5	7	1.7	0.6	1.6	22.3±0.9	710	19.3±0.8	0.3	1.6	24.1±1.0	910
10T	1.5	7	1.7	0.6	1.7	27.2±1.1	980	24.0±1.0	0.3	1.8	29.2±1.2	1,240
12T	1.5	7	1.7	0.6	1.8	28.3±1.1	1,135	24.9±1.0	0.3	1.9	30.3±1.2	1,405
14T	1.5	7	1.7	0.6	1.9	30.4±1.2	1,310	26.8±1.1	0.3	1.9	32.2±1.3	1,585
15T	1.5	7	1.7	0.6	1.9	31.3±1.3	1,405	27.7±1.1	0.3	2.0	33.3±1.3	1,705
19T	1.5	7	1.7	0.6	2.0	34.9±1.4	1,690	31.1±1.2	0.4	2.1	37.3±1.5	2,110
20T	1.5	7	1.7	0.6	2.1	35.9±1.4	1,830	31.9±1.3	0.4	2.1	38.1±1.5	2,240
24T	1.5	7	1.7	0.6	2.2	39.1±1.6	2,145	34.9±1.4	0.4	2.3	41.5±1.7	2,610
27T	1.5	7	1.7	0.6	2.3	41.3±1.7	2,390	36.9±1.5	0.4	2.3	43.5±1.7	2,860
30T	1.5	7	1.7	0.6	2.3	43.3±1.7	2,625	38.9±1.6	0.4	2.4	45.7±1.8	3,140
33T	1.5	7	1.7	0.6	2.4	45.4±1.8	2,880	40.8±1.6	0.4	2.5	47.8±1.9	3,425
37T	1.5	7	1.7	0.6	2.5	47.9±1.9	3,175	43.1±1.7	0.4	2.6	50.3±2.0	3,750
48T	1.5	7	1.7	0.6	2.7	54.2±2.2	4,090	49.0±2.0	0.4	2.8	56.6±2.3	4,740

HIS CABLE

IEC 60092-350, 353, 354, 376



Cable Designation

Non-H/F TYPE	H/F TYPE
- 250V PXY(I/C)	- 250V PXI(I/C)
- 250V POY(I/C)	- 250V POI(I/C)

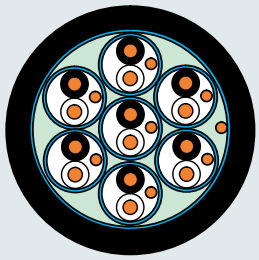
Application Standard

- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, HF HEPR
- Sheath material : IEC 60092-359, ST2 or SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Halogen content : IEC 60754-1, 0.5% ↓ (For Halogen free cable only)
- Smoke emission : IEC 61034, 60% ↑ (For Halogen free cable only)
- Fluorine content : IEC 60684-2, 0.1% ↓ (For Halogen free cable only)
- pH and conductivity : IEC 60754-2, pH (4.3 ↑) & Conductivity (10㎲/mm ↓) (For Halogen free cable only)
- Cold bend/impact (Option) : CSA 22.2 NO. 0.3 (-40℃/-35℃) (Same as IEC 60092-350, 8.9)
- Oil resistant (Option) : IEEE 1580 TYPE "T", at 70℃x4h (For PVC sheath material only)
- Paint resistant (Option): Maker standard (Epoxy, Alkyd paint, at 100℃x168h) (For PVC sheath material only)
- Max. rated conductor temperature : 90℃

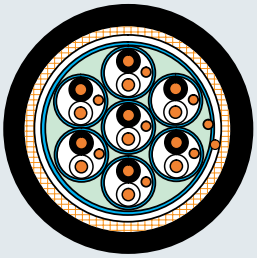
Core Identification

- Colored insulation plus Arabic number printing on the insulation
  Pair : White, Black
  Triad : White, Black , Red

Construction



PXI(I/C) (7P)



POY(I/C) (7P)

Classification	Code	Construction detail
Conductor		- Stranded tinned annealed copper wires as per IEC 60228, Class 2
Insulation	P	- HF HEPR as per IEC 60092-351
Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad
Individual screen	(I)	- AL/PS tape with 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)	- AL/PS Tape with drain wire - A suitable tape may be applied on the collective screen
Inner covering		- Lapped covering - Applied to Armoured & Sheath cable
Armour	0	- Braid of Plain annealed copper wire - Coverage density : Min. 90% - A suitable separator tape(s) may be applied under/over the armour - Applied to Armoured & Sheath cable
Sheath	Y (I)	- Non-H/F type : ST2(Y) as per IEC 60092-359 - H/F type : SHF1(I) as per IEC 60092-359 - Outer sheath color : Black

Note. The other color of sheath and insulation may be applicable when purchaser require

Flame retardant

Instrumentation Cable with individual & collective screen

250V PXY(I/C), POY(I/C), PXI(I/C), POI(I/C)

No. of Units	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
1P	0.75	7	1.2	0.5	1.0	7.3±0.4	75	5.5±0.4	0.2	1.1	8.8±0.4	125
2P	0.75	7	1.2	0.5	1.2	11.4±0.5	165	9.2±0.4	0.2	1.2	12.7±0.5	235
3P	0.75	7	1.2	0.5	1.2	12.0±0.5	200	9.8±0.4	0.2	1.2	13.3±0.5	275
4P	0.75	7	1.2	0.5	1.2	13.2±0.5	245	11.0±0.4	0.3	1.3	15.2±0.6	375
5P	0.75	7	1.2	0.5	1.3	14.6±0.6	295	12.2±0.5	0.3	1.3	16.4±0.7	435
7P	0.75	7	1.2	0.5	1.3	15.9±0.6	375	13.5±0.5	0.3	1.4	17.9±0.7	530
10P	0.75	7	1.2	0.5	1.5	19.5±0.8	520	16.7±0.7	0.3	1.5	21.3±0.9	700
12P	0.75	7	1.2	0.5	1.5	20.4±0.8	595	17.6±0.7	0.3	1.6	22.4±0.9	790
14P	0.75	7	1.2	0.5	1.5	21.8±0.9	675	19.0±0.8	0.3	1.6	23.8±1.0	885
15P	0.75	7	1.2	0.5	1.6	22.6±0.9	735	19.6±0.8	0.3	1.6	24.4±1.0	945
19P	0.75	7	1.2	0.5	1.7	25.2±1.0	880	22.0±0.9	0.3	1.7	27.0±1.1	1,115
20P	0.75	7	1.2	0.5	1.7	25.7±1.0	950	22.5±0.9	0.3	1.8	27.7±1.1	1,195
24P	0.75	7	1.2	0.5	1.8	28.0±1.1	1,110	24.6±1.0	0.3	1.8	29.8±1.2	1,360
27P	0.75	7	1.2	0.5	1.8	29.4±1.2	1,220	26.0±1.0	0.3	1.9	31.4±1.3	1,505
30P	0.75	7	1.2	0.5	1.9	31.0±1.2	1,355	27.4±1.1	0.3	2.0	33.0±1.3	1,650
33P	0.75	7	1.2	0.5	1.9	32.3±1.3	1,470	28.7±1.1	0.3	2.0	34.3±1.4	1,780
37P	0.75	7	1.2	0.5	2.0	34.2±1.4	1,625	30.4±1.2	0.4	2.1	36.6±1.5	2,035
48P	0.75	7	1.2	0.5	2.2	38.7±1.5	2,090	34.5±1.4	0.4	2.3	41.1±1.6	2,555
1P	1.0	7	1.4	0.5	1.0	7.7±0.4	85	5.9±0.4	0.2	1.1	9.2±0.4	135
2P	1.0	7	1.4	0.5	1.2	12.1±0.5	195	9.9±0.4	0.2	1.2	13.4±0.5	265
3P	1.0	7	1.4	0.5	1.2	12.8±0.5	240	10.6±0.4	0.3	1.3	14.8±0.6	370
4P	1.0	7	1.4	0.5	1.3	14.2±0.6	300	11.8±0.5	0.3	1.3	16.0±0.6	435
5P	1.0	7	1.4	0.5	1.3	15.5±0.6	360	13.1±0.5	0.3	1.4	17.5±0.7	510
7P	1.0	7	1.4	0.5	1.4	17.1±0.7	460	14.5±0.6	0.3	1.4	18.9±0.8	620
10P	1.0	7	1.4	0.5	1.5	20.8±0.8	635	18.0±0.7	0.3	1.6	22.8±0.9	835
12P	1.0	7	1.4	0.5	1.5	21.7±0.9	725	18.9±0.8	0.3	1.6	23.7±0.9	940
14P	1.0	7	1.4	0.5	1.6	23.4±0.9	840	20.4±0.8	0.3	1.7	25.4±1.0	1,065
15P	1.0	7	1.4	0.5	1.6	24.1±1.0	900	21.1±0.8	0.3	1.7	26.1±1.0	1,135
19P	1.0	7	1.4	0.5	1.7	26.9±1.1	1,085	23.7±0.9	0.3	1.8	28.9±1.2	1,345
20P	1.0	7	1.4	0.5	1.8	27.6±1.1	1,175	24.2±1.0	0.3	1.8	29.4±1.2	1,425
24P	1.0	7	1.4	0.5	1.8	29.9±1.2	1,360	26.5±1.1	0.3	1.9	31.9±1.3	1,650
27P	1.0	7	1.4	0.5	1.9	31.7±1.3	1,520	28.1±1.1	0.3	2.0	33.7±1.3	1,825
30P	1.0	7	1.4	0.5	2.0	33.3±1.3	1,685	29.5±1.2	0.3	2.0	35.1±1.4	1,985
33P	1.0	7	1.4	0.5	2.0	34.7±1.4	1,835	30.9±1.2	0.4	2.1	37.1±1.5	2,250
37P	1.0	7	1.4	0.5	2.1	36.7±1.5	2,025	32.7±1.3	0.4	2.2	39.1±1.6	2,465
48P	1.0	7	1.4	0.5	2.3	41.6±1.7	2,610	37.2±1.5	0.4	2.4	44.0±1.8	3,105

HIS CABLE

IEC 60092-350, 353, 354, 376

250V PXY(I/C), POY(I/C), PXI(I/C), POI(I/C)

No. of Units	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
1P	1.5	7	1.7	0.6	1.1	8.9±0.4	110	6.9±0.4	0.2	1.1	10.2±0.4	165
2P	1.5	7	1.7	0.6	1.2	13.8±0.6	245	11.6±0.5	0.3	1.3	15.8±0.6	380
3P	1.5	7	1.7	0.6	1.3	14.8±0.6	315	12.4±0.5	0.3	1.4	16.8±0.7	455
4P	1.5	7	1.7	0.6	1.3	16.2±0.6	385	13.8±0.6	0.3	1.4	18.2±0.7	540
5P	1.5	7	1.7	0.6	1.4	18.0±0.7	470	15.4±0.6	0.3	1.5	20.0±0.8	645
7P	1.5	7	1.7	0.6	1.5	19.8±0.8	600	17.0±0.7	0.3	1.5	21.6±0.9	780
10P	1.5	7	1.7	0.6	1.6	24.2±1.0	825	21.2±0.8	0.3	1.7	26.2±1.0	1,065
12P	1.5	7	1.7	0.6	1.7	25.5±1.0	965	22.3±0.9	0.3	1.7	27.3±1.1	1,195
14P	1.5	7	1.7	0.6	1.7	27.3±1.1	1,100	24.1±1.0	0.3	1.8	29.3±1.2	1,365
15P	1.5	7	1.7	0.6	1.8	28.3±1.1	1,200	24.9±1.0	0.3	1.9	30.3±1.2	1,470
19P	1.5	7	1.7	0.6	1.9	31.5±1.3	1,435	27.9±1.1	0.3	2.0	33.5±1.3	1,735
20P	1.5	7	1.7	0.6	1.9	32.2±1.3	1,540	28.6±1.1	0.3	2.0	34.2±1.4	1,850
24P	1.5	7	1.7	0.6	2.0	35.1±1.4	1,805	31.3±1.3	0.4	2.1	37.5±1.5	2,225
27P	1.5	7	1.7	0.6	2.1	37.1±1.5	2,015	33.1±1.3	0.4	2.2	39.5±1.6	2,460
30P	1.5	7	1.7	0.6	2.2	39.1±1.6	2,230	34.9±1.4	0.4	2.3	41.5±1.7	2,695
33P	1.5	7	1.7	0.6	2.2	40.7±1.6	2,430	36.5±1.5	0.4	2.3	43.1±1.7	2,915
37P	1.5	7	1.7	0.6	2.3	43.1±1.7	2,680	38.7±1.5	0.4	2.4	45.5±1.8	3,195
48P	1.5	7	1.7	0.6	2.5	48.7±1.9	3,450	43.9±1.8	0.4	2.6	51.1±2.0	4,035
1T	0.75	7	1.2	0.5	1.0	7.7±0.4	90	5.9±0.4	0.2	1.1	9.2±0.4	140
2T	0.75	7	1.2	0.5	1.2	12.4±0.5	200	10.2±0.4	0.3	1.3	14.4±0.6	325
3T	0.75	7	1.2	0.5	1.2	13.2±0.5	250	11.0±0.4	0.3	1.3	15.2±0.6	380
4T	0.75	7	1.2	0.5	1.3	14.6±0.6	320	12.2±0.5	0.3	1.3	16.4±0.7	450
5T	0.75	7	1.2	0.5	1.3	16.1±0.6	380	13.7±0.5	0.3	1.4	18.1±0.7	535
7T	0.75	7	1.2	0.5	1.4	18.3±0.7	490	15.7±0.6	0.3	1.5	20.3±0.8	670
10T	0.75	7	1.2	0.5	1.6	22.5±0.9	685	19.5±0.8	0.3	1.6	24.3±1.0	890
12T	0.75	7	1.2	0.5	1.6	23.2±0.9	785	20.2±0.8	0.3	1.7	25.2±1.0	1,010
14T	0.75	7	1.2	0.5	1.7	25.0±1.0	905	21.8±0.9	0.3	1.7	26.8±1.1	1,135
15T	0.75	7	1.2	0.5	1.7	25.7±1.0	975	22.5±0.9	0.3	1.8	27.7±1.1	1,220
19T	0.75	7	1.2	0.5	1.8	28.6±1.1	1,170	25.2±1.0	0.3	1.9	30.6±1.2	1,445
20T	0.75	7	1.2	0.5	1.8	29.3±1.2	1,255	25.9±1.0	0.3	1.9	31.3±1.3	1,535
24T	0.75	7	1.2	0.5	1.9	31.9±1.3	1,470	28.3±1.1	0.3	2.0	33.9±1.4	1,775
27T	0.75	7	1.2	0.5	2.0	33.7±1.3	1,640	29.9±1.2	0.3	2.1	35.7±1.4	1,960
30T	0.75	7	1.2	0.5	2.0	35.3±1.4	1,800	31.5±1.3	0.4	2.1	37.7±1.5	2,225
33T	0.75	7	1.2	0.5	2.1	37.0±1.5	1,975	33.0±1.3	0.4	2.2	39.4±1.6	2,420
37T	0.75	7	1.2	0.5	2.2	39.1±1.6	2,180	34.9±1.4	0.4	2.3	41.5±1.7	2,650
48T	0.75	7	1.2	0.5	2.4	44.3±1.8	2,810	39.7±1.6	0.4	2.5	46.7±1.9	3,340

Flame retardant

Instrumentation Cable with individual & collective screen

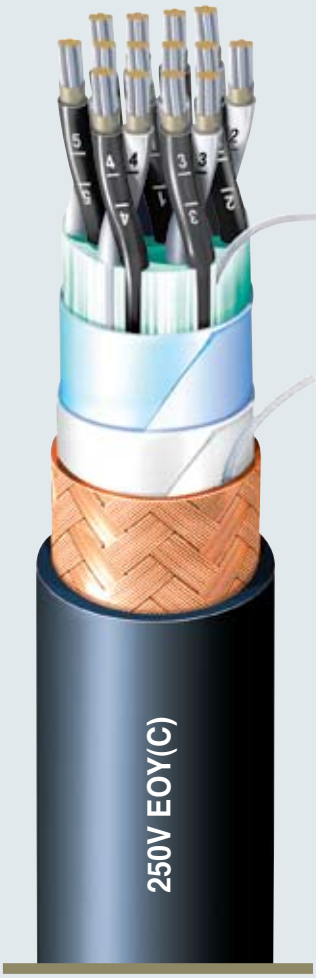
250V PXY(I/C), POY(I/C), PXI(I/C), POI(I/C)

No. of Units	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
1T	1.0	7	1.4	0.5	1.0	8.1±0.4	105	6.3±0.4	0.2	1.1	9.6±0.4	160
2T	1.0	7	1.4	0.5	1.2	13.2±0.5	240	11.0±0.4	0.3	1.3	15.2±0.6	370
3T	1.0	7	1.4	0.5	1.3	14.2±0.6	305	11.8±0.5	0.3	1.3	16.0±0.6	440
4T	1.0	7	1.4	0.5	1.3	15.5±0.6	385	13.1±0.5	0.3	1.4	17.5±0.7	530
5T	1.0	7	1.4	0.5	1.4	17.3±0.7	470	14.7±0.6	0.3	1.4	19.1±0.8	625
7T	1.0	7	1.4	0.5	1.5	19.7±0.8	610	16.9±0.7	0.3	1.5	21.5±0.9	785
10T	1.0	7	1.4	0.5	1.6	24.0±1.0	835	21.0±0.8	0.3	1.7	26.0±1.0	1,070
12T	1.0	7	1.4	0.5	1.7	24.9±1.0	975	21.7±0.9	0.3	1.7	26.7±1.1	1,200
14T	1.0	7	1.4	0.5	1.7	26.6±1.1	1,115	23.4±0.9	0.3	1.8	28.6±1.1	1,370
15T	1.0	7	1.4	0.5	1.8	27.6±1.1	1,210	24.2±1.0	0.3	1.8	29.4±1.2	1,460
19T	1.0	7	1.4	0.5	1.9	30.8±1.2	1,460	27.2±1.1	0.3	1.9	32.6±1.3	1,740
20T	1.0	7	1.4	0.5	1.9	31.5±1.3	1,560	27.9±1.1	0.3	2.0	33.5±1.3	1,860
24T	1.0	7	1.4	0.5	2.0	34.3±1.4	1,830	30.5±1.2	0.4	2.1	36.7±1.5	2,245
27T	1.0	7	1.4	0.5	2.1	36.3±1.5	2,045	32.3±1.3	0.4	2.2	38.7±1.5	2,480
30T	1.0	7	1.4	0.5	2.1	38.0±1.5	2,245	34.0±1.4	0.4	2.2	40.4±1.6	2,700
33T	1.0	7	1.4	0.5	2.2	39.8±1.6	2,465	35.6±1.4	0.4	2.3	42.2±1.7	2,945
37T	1.0	7	1.4	0.5	2.3	42.1±1.7	2,725	37.7±1.5	0.4	2.4	44.5±1.8	3,230
48T	1.0	7	1.4	0.5	2.5	47.6±1.9	3,510	42.8±1.7	0.4	2.6	50.0±2.0	4,080
1T	1.5	7	1.7	0.6	1.1	9.4±0.4	135	7.4±0.4	0.2	1.1	10.7±0.4	195
2T	1.5	7	1.7	0.6	1.3	15.3±0.6	315	12.9±0.5	0.3	1.4	17.3±0.7	465
3T	1.5	7	1.7	0.6	1.3	16.2±0.6	400	13.8±0.6	0.3	1.4	18.2±0.7	555
4T	1.5	7	1.7	0.6	1.4	18.0±0.7	505	15.4±0.6	0.3	1.5	20.0±0.8	675
5T	1.5	7	1.7	0.6	1.5	20.1±0.8	620	17.3±0.7	0.3	1.5	21.9±0.9	800
7T	1.5	7	1.7	0.6	1.6	22.9±0.9	805	19.9±0.8	0.3	1.7	24.9±1.0	1,030
10T	1.5	7	1.7	0.6	1.8	28.1±1.1	1,130	24.7±1.0	0.3	1.8	29.9±1.2	1,385
12T	1.5	7	1.7	0.6	1.8	29.0±1.2	1,295	25.6±1.0	0.3	1.9	31.0±1.2	1,575
14T	1.5	7	1.7	0.6	1.9	31.2±1.2	1,495	27.6±1.1	0.3	2.0	33.2±1.3	1,795
15T	1.5	7	1.7	0.6	1.9	32.2±1.3	1,610	28.6±1.1	0.3	2.0	34.2±1.4	1,915
19T	1.5	7	1.7	0.6	2.1	36.1±1.4	1,960	32.1±1.3	0.4	2.2	38.5±1.5	2,390
20T	1.5	7	1.7	0.6	2.1	36.9±1.5	2,095	32.9±1.3	0.4	2.2	39.3±1.6	2,540
24T	1.5	7	1.7	0.6	2.2	40.2±1.6	2,460	36.0±1.4	0.4	2.3	42.6±1.7	2,945
27T	1.5	7	1.7	0.6	2.3	42.5±1.7	2,745	38.1±1.5	0.4	2.4	44.9±1.8	3,255
30T	1.5	7	1.7	0.6	2.4	44.7±1.8	3,040	40.1±1.6	0.4	2.5	47.1±1.9	3,575
33T	1.5	7	1.7	0.6	2.5	46.9±1.9	3,340	42.1±1.7	0.4	2.6	49.3±2.0	3,900
37T	1.5	7	1.7	0.6	2.6	49.5±2.0	3,690	44.5±1.8	0.4	2.7	51.9±2.1	4,280
48T	1.5	7	1.7	0.6	2.8	56.0±2.2	4,750	50.6±2.0	0.4	2.9	58.4±2.3	5,420

Fire resistance

Instrumentation Cable with collective screen

HIS CABLE
IEC 60092-350, 353, 354, 376



Cable Designation

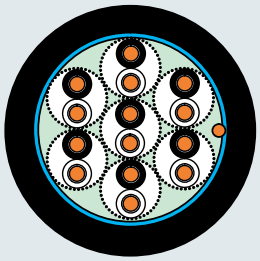
Non-H/F TYPE	H/F TYPE
- 250V EXY(C)	- 250V EXI(C)
- 250V EOY(C)	- 250V EOI(C)

Application Standard

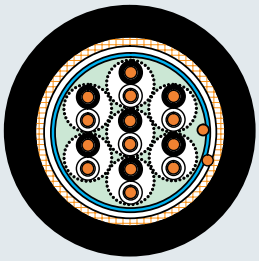
- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, HF HEPR
- Sheath material : IEC 60092-359, ST2 or SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Fire resistance : IEC 60331-21(90min)
  IEC 60331-1,-2(120min)
- Halogen content : IEC 60754-1, 0.5% ↓ (For Halogen free cable only)
- Smoke emission : IEC 61034, 60% ↑ (For Halogen free cable only)
- Fluorine content : IEC 60684-2, 0.1% ↓ (For Halogen free cable only)
- pH and conductivity : IEC 60754-2, pH (4.3 ↑) & Conductivity (10㎲/mm ↓)
  (For Halogen free cable only)
- Cold bend/impact (Option) : CSA 22.2 NO. 0.3 (-40℃/-35℃)
  (Same as IEC 60092-350, 8.9)
- Oil resistant (Option) : IEEE 1580 TYPE "T", at 70℃x4h
  (For PVC sheath material only)
- Paint resistant (Option): Maker standard (Epoxy, Alkyd paint, at 100℃x168h)
  (For PVC sheath material only)
- Max. rated conductor temperature : 90℃

Core Identification

- Colored insulation plus Arabic number printing on the insulation
  Pair : White, Black
  Triad : White, Black , Red



EXI(C) (7P)



EOY(C) (7P)

Construction

Classification	Code	Construction detail
Conductor	E	- Stranded tinned annealed copper wires as per IEC 60228, Class 2
Fire resisting layer		- Mica/glass tape
Insulation		- HF HEPR 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)	- AL/PS Tape with drain wire - A suitable tape may be applied on the collective screen
Inner covering		- Lapped covering - Applied to Armoured & Sheath cable
Armour	0	- Braid of Plain annealed copper wire - Coverage density : Min. 90% - A suitable separator tape(s) may be applied under/over the armour - Applied to Armoured & Sheath cable
Sheath	Y (I)	- Non-H/F type : ST2(Y) as per IEC 60092-359 - H/F type : SHF1(I) as per IEC 60092-359 - Outer sheath color : Black

Note. The other color of sheath and insulation may be applicable when purchaser require

Fire resistance

Instrumentation Cable with collective screen

250V EXY(C), EOY(C), EXI(C), EOI(C)

No. of Units	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
1P	0.75	7	1.2	0.5	1.0	8.0±0.4	80	6.2±0.4	0.2	1.1	9.5±0.4	135
2P	0.75	7	1.2	0.5	1.2	12.4±0.5	170	10.2±0.4	0.3	1.3	14.4±0.6	290
3P	0.75	7	1.2	0.5	1.2	13.1±0.5	200	10.9±0.4	0.3	1.3	15.1±0.6	330
4P	0.75	7	1.2	0.5	1.3	14.6±0.6	250	12.2±0.5	0.3	1.3	16.4±0.7	385
5P	0.75	7	1.2	0.5	1.3	16.0±0.6	295	13.6±0.5	0.3	1.4	18.0±0.7	455
7P	0.75	7	1.2	0.5	1.4	17.6±0.7	370	15.0±0.6	0.3	1.5	19.6±0.8	540
10P	0.75	7	1.2	0.5	1.5	21.4±0.9	505	18.6±0.7	0.3	1.6	23.4±0.9	710
12P	0.75	7	1.2	0.5	1.6	22.6±0.9	580	19.6±0.8	0.3	1.6	24.4±1.0	785
14P	0.75	7	1.2	0.5	1.6	24.1±1.0	655	21.1±0.8	0.3	1.7	26.1±1.0	890
15P	0.75	7	1.2	0.5	1.7	25.0±1.0	720	21.8±0.9	0.3	1.7	26.8±1.1	950
19P	0.75	7	1.2	0.5	1.8	27.9±1.1	845	24.5±1.0	0.3	1.8	29.7±1.2	1,105
20P	0.75	7	1.2	0.5	1.8	28.5±1.1	920	25.1±1.0	0.3	1.9	30.5±1.2	1,190
24P	0.75	7	1.2	0.5	1.9	31.0±1.2	1,065	27.4±1.1	0.3	2.0	33.0±1.3	1,360
27P	0.75	7	1.2	0.5	1.9	32.7±1.3	1,170	29.1±1.2	0.3	2.0	34.7±1.4	1,485
30P	0.75	7	1.2	0.5	2.0	34.4±1.4	1,295	30.6±1.2	0.4	2.1	26.8±1.5	1,710
33P	0.75	7	1.2	0.5	2.1	36.1±1.4	1,425	32.1±1.3	0.4	2.2	38.5±1.5	1,855
37P	0.75	7	1.2	0.5	2.1	37.9±1.5	1,540	33.9±1.4	0.4	2.2	40.3±1.6	1,995
48P	0.75	7	1.2	0.5	2.3	42.9±1.7	1,985	38.5±1.5	0.4	2.4	45.3±1.8	2,500
1P	1.0	7	1.4	0.5	1.0	8.4±0.4	95	6.6±0.4	0.2	1.1	9.9±0.4	150
2P	1.0	7	1.4	0.5	1.2	13.1±0.5	195	10.9±0.4	0.3	1.3	15.1±0.6	325
3P	1.0	7	1.4	0.5	1.3	14.1±0.6	240	11.7±0.5	0.3	1.3	15.9±0.6	375
4P	1.0	7	1.4	0.5	1.3	15.4±0.6	290	13.0±0.5	0.3	1.4	17.4±0.7	445
5P	1.0	7	1.4	0.5	1.4	17.1±0.7	355	14.5±0.6	0.3	1.4	18.9±0.8	510
7P	1.0	7	1.4	0.5	1.4	18.6±0.7	440	16.0±0.6	0.3	1.5	20.6±0.8	615
10P	1.0	7	1.4	0.5	1.6	22.9±0.9	605	19.9±0.8	0.3	1.7	24.9±1.0	825
12P	1.0	7	1.4	0.5	1.6	24.0±1.0	690	21.0±0.8	0.3	1.7	26.0±1.0	925
14P	1.0	7	1.4	0.5	1.7	25.8±1.0	795	22.6±0.9	0.3	1.8	27.8±1.1	1,045
15P	1.0	7	1.4	0.5	1.7	26.6±1.1	855	23.4±0.9	0.3	1.8	28.6±1.1	1,110
19P	1.0	7	1.4	0.5	1.8	29.6±1.2	1,015	26.2±1.0	0.3	1.9	31.6±1.3	1,295
20P	1.0	7	1.4	0.5	1.9	30.5±1.2	1,105	26.9±1.1	0.3	1.9	32.3±1.3	1,385
24P	1.0	7	1.4	0.5	2.0	33.2±1.3	1,290	29.4±1.2	0.3	2.0	35.0±1.4	1,590
27P	1.0	7	1.4	0.5	2.0	34.9±1.4	1,415	31.1±1.2	0.4	2.1	37.3±1.5	1,835
30P	1.0	7	1.4	0.5	2.1	36.7±1.5	1,565	32.7±1.3	0.4	2.2	39.1±1.6	2,005
33P	1.0	7	1.4	0.5	2.2	38.5±1.5	1,720	34.3±1.4	0.4	2.2	40.7±1.6	2,165
37P	1.0	7	1.4	0.5	2.2	40.5±1.6	1,870	36.3±1.5	0.4	2.3	42.9±1.7	2,355
48P	1.0	7	1.4	0.5	2.4	45.8±1.8	2,405	41.2±1.6	0.4	2.5	48.2±1.9	2,955

HIS CABLE

IEC 60092-350, 353, 354, 376

250V EXY(C), EOY(C), EXI(C), EOI(C)

No. of Units	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
1P	1.5	7	1.7	0.6	1.1	9.6±0.4	120	7.6±0.4	0.2	1.1	10.9±0.4	175
2P	1.5	7	1.7	0.6	1.3	15.0±0.6	250	12.6±0.5	0.3	1.4	17.0±0.7	400
3P	1.5	7	1.7	0.6	1.3	15.9±0.6	305	13.5±0.5	0.3	1.4	17.9±0.7	465
4P	1.5	7	1.7	0.6	1.4	17.7±0.7	385	15.1±0.6	0.3	1.5	19.7±0.8	555
5P	1.5	7	1.7	0.6	1.5	19.6±0.8	470	16.8±0.7	0.3	1.5	21.4±0.9	645
7P	1.5	7	1.7	0.6	1.5	21.4±0.9	580	18.6±0.7	0.3	1.6	23.4±0.9	785
10P	1.5	7	1.7	0.6	1.7	26.3±1.1	805	23.1±0.9	0.3	1.8	28.3±1.1	1,060
12P	1.5	7	1.7	0.6	1.8	27.7±1.1	935	24.3±1.0	0.3	1.8	29.5±1.2	1,185
14P	1.5	7	1.7	0.6	1.8	29.7±1.2	1,060	26.3±1.1	0.3	1.9	31.7±1.3	1,345
15P	1.5	7	1.7	0.6	1.9	30.7±1.2	1,155	27.1±1.1	0.3	1.9	32.5±1.3	1,435
19P	1.5	7	1.7	0.6	2.0	34.3±1.4	1,370	30.5±1.2	0.4	2.1	36.7±1.5	1,780
20P	1.5	7	1.7	0.6	2.0	35.0±1.4	1,475	31.2±1.2	0.4	2.1	37.4±1.5	1,895
24P	1.5	7	1.7	0.6	2.1	38.1±1.5	1,720	34.1±1.4	0.4	2.2	40.5±1.6	2,180
27P	1.5	7	1.7	0.6	2.2	40.4±1.6	1,915	36.2±1.4	0.4	2.3	42.8±1.7	2,400
30P	1.5	7	1.7	0.6	2.3	42.5±1.7	2,120	38.1±1.5	0.4	2.4	44.9±1.8	2,630
33P	1.5	7	1.7	0.6	2.4	44.5±1.8	2,330	39.9±1.6	0.4	2.5	46.9±1.9	2,860
37P	1.5	7	1.7	0.6	2.5	47.0±1.9	2,555	42.2±1.7	0.4	2.6	49.4±2.0	3,115
48P	1.5	7	1.7	0.6	2.7	53.2±2.1	3,285	48.0±1.9	0.4	2.8	55.6±2.2	3,920
1T	0.75	7	1.2	0.5	1.0	8.4±0.4	100	6.6±0.4	0.2	1.1	9.9±0.4	155
2T	0.75	7	1.2	0.5	1.2	13.5±0.6	205	11.3±0.5	0.3	1.3	15.5±0.6	345
3T	0.75	7	1.2	0.5	1.3	14.6±0.6	250	12.2±0.5	0.3	1.3	16.4±0.7	400
4T	0.75	7	1.2	0.5	1.3	16.0±0.7	325	13.6±0.5	0.3	1.4	18.0±0.7	480
5T	0.75	7	1.2	0.5	1.4	17.9±0.7	385	15.3±0.6	0.3	1.5	19.9±0.8	570
7T	0.75	7	1.2	0.5	1.5	20.3±0.8	500	17.5±0.7	0.3	1.6	22.3±0.9	705
10T	0.75	7	1.2	0.5	1.7	24.9±1.0	680	21.7±0.9	0.3	1.7	26.7±1.1	940
12T	0.75	7	1.2	0.5	1.7	25.7±1.0	795	22.5±0.9	0.3	1.8	27.7±1.1	1,055
14T	0.75	7	1.2	0.5	1.8	27.7±1.1	895	24.3±1.0	0.3	1.8	29.5±1.2	1,180
15T	0.75	7	1.2	0.5	1.8	28.5±1.2	995	25.1±1.0	0.3	1.9	30.5±1.2	1,270
19T	0.75	7	1.2	0.5	1.9	31.8±1.3	1,090	28.2±1.1	0.3	2.0	33.8±1.4	1,495
20T	0.75	7	1.2	0.5	1.9	32.5±1.3	1,175	28.9±1.2	0.3	2.0	34.5±1.4	1,590
24T	0.75	7	1.2	0.5	2.0	35.4±1.4	1,470	31.6±1.3	0.4	2.1	37.8±1.5	1,920
27T	0.75	7	1.2	0.5	2.1	37.4±1.5	1,630	33.4±1.3	0.4	2.2	39.8±1.6	2,110
30T	0.75	7	1.2	0.5	2.2	39.4±1.6	1,805	35.2±1.4	0.4	2.3	41.8±1.7	2,310
33T	0.75	7	1.2	0.5	2.3	41.3±1.7	1,970	36.9±1.5	0.4	2.3	43.5±1.7	2,495
37T	0.75	7	1.2	0.5	2.3	43.4±1.8	2,185	39.0±1.6	0.4	2.4	45.8±1.8	2,720
48T	0.75	7	1.2	0.5	2.6	49.4±2.0	2,795	44.4±1.8	0.4	2.6	51.6±2.1	3,425

Fire resistance

Instrumentation Cable with collective screen

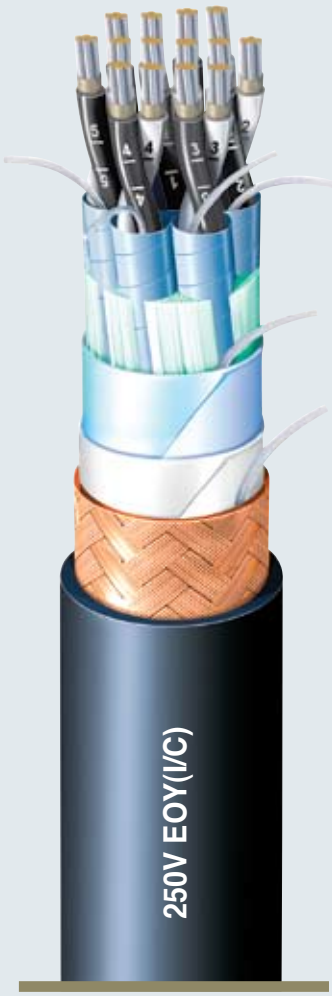
250V EXY(C), EOY(C), EXI(C), EOI(C)

No. of Units	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
1T	1.0	7	1.4	0.5	1.1	9.1±0.4	120	7.1±0.4	0.2	1.1	10.4±0.4	175
2T	1.0	7	1.4	0.5	1.3	14.5±0.6	250	12.1±0.5	0.3	1.3	16.3±0.7	390
3T	1.0	7	1.4	0.5	1.3	15.4±0.6	315	13.0±0.5	0.3	1.4	17.4±0.7	465
4T	1.0	7	1.4	0.5	1.4	17.1±0.7	395	14.5±0.6	0.3	1.4	18.9±0.8	550
5T	1.0	7	1.4	0.5	1.4	18.9±0.8	470	16.3±0.7	0.3	1.5	20.9±0.8	655
7T	1.0	7	1.4	0.5	1.5	21.5±0.9	605	18.7±0.7	0.3	1.6	23.5±0.9	810
10T	1.0	7	1.4	0.5	1.7	26.4±1.1	840	23.2±0.9	0.3	1.8	28.4±1.1	1,100
12T	1.0	7	1.4	0.5	1.7	27.3±1.1	965	24.1±1.0	0.3	1.8	29.3±1.2	1,225
14T	1.0	7	1.4	0.5	1.8	29.4±1.2	1,110	26.0±1.0	0.3	1.9	31.4±1.3	1,395
15T	1.0	7	1.4	0.5	1.9	30.4±1.2	1,210	26.8±1.1	0.3	1.9	32.2±1.3	1,485
19T	1.0	7	1.4	0.5	2.0	33.9±1.4	1,445	30.1±1.2	0.4	2.1	36.3±1.5	1,850
20T	1.0	7	1.4	0.5	2.0	34.7±1.4	1,550	30.9±1.2	0.4	2.1	37.1±1.5	1,965
24T	1.0	7	1.4	0.5	2.1	37.8±1.5	1,815	33.8±1.4	0.4	2.2	40.2±1.6	2,265
27T	1.0	7	1.4	0.5	2.2	40.0±1.6	2,020	35.8±1.4	0.4	2.3	42.4±1.7	2,500
30T	1.0	7	1.4	0.5	2.3	42.1±1.7	2,235	37.7±1.5	0.4	2.4	44.5±1.8	2,740
33T	1.0	7	1.4	0.5	2.4	44.1±1.8	2,455	39.5±1.6	0.4	2.5	46.5±1.9	2,980
37T	1.0	7	1.4	0.5	2.5	46.6±1.9	2,700	41.8±1.7	0.4	2.5	48.8±2.0	3,235
48T	1.0	7	1.4	0.5	2.7	52.7±2.1	3,475	47.5±1.9	0.4	2.8	55.1±2.2	4,105
1T	1.5	7	1.7	0.6	1.1	10.1±0.4	150	8.1±0.4	0.2	1.2	11.6±0.5	215
2T	1.5	7	1.7	0.6	1.3	16.4±0.7	325	14.0±0.6	0.3	1.4	18.4±0.7	480
3T	1.5	7	1.7	0.6	1.4	17.7±0.7	415	15.1±0.6	0.3	1.5	19.7±0.8	585
4T	1.5	7	1.7	0.6	1.5	19.6±0.8	520	16.8±0.7	0.3	1.5	21.4±0.9	695
5T	1.5	7	1.7	0.6	1.5	21.7±0.9	625	18.9±0.8	0.3	1.6	23.7±0.9	830
7T	1.5	7	1.7	0.6	1.7	24.9±1.0	815	21.7±0.9	0.3	1.7	26.7±1.1	1,050
10T	1.5	7	1.7	0.6	1.9	30.6±1.2	1,145	27.0±1.1	0.3	1.9	32.4±1.3	1,420
12T	1.5	7	1.7	0.6	1.9	31.6±1.3	1,305	28.0±1.1	0.3	2.0	33.6±1.3	1,605
14T	1.5	7	1.7	0.6	2.0	34.0±1.4	1,505	30.2±1.2	0.4	2.1	36.4±1.5	1,915
15T	1.5	7	1.7	0.6	2.0	35.0±1.4	1,620	31.2±1.2	0.4	2.1	37.4±1.5	2,040
19T	1.5	7	1.7	0.6	2.2	39.2±1.6	1,955	35.0±1.4	0.4	2.3	41.6±1.7	2,425
20T	1.5	7	1.7	0.6	2.2	40.1±1.6	2,100	35.9±1.4	0.4	2.3	42.5±1.7	2,580
24T	1.5	7	1.7	0.6	2.4	43.9±1.8	2,480	39.3±1.6	0.4	2.4	46.1±1.8	2,980
27T	1.5	7	1.7	0.6	2.4	46.2±1.8	2,740	41.6±1.7	0.4	2.5	48.6±1.9	3,290
30T	1.5	7	1.7	0.6	2.5	48.6±1.9	3,030	43.8±1.8	0.4	2.6	51.0±2.0	3,610
33T	1.5	7	1.7	0.6	2.6	51.0±2.0	3,330	46.0±1.8	0.4	2.7	53.4±2.1	3,940
37T	1.5	7	1.7	0.6	2.7	53.8±2.2	3,665	48.6±1.9	0.4	2.8	56.2±2.2	4,305
48T	1.5	7	1.7	0.6	3.0	61.1±2.4	4,745	55.3±2.2	0.4	3.1	63.5±2.5	5,475

Fire resistance

Instrumentation Cable with individual & collective screen

HIS CABLE
IEC 60092-350, 353, 354, 376



Cable Designation

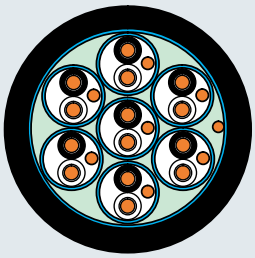
Non-H/F TYPE	H/F TYPE
- 250V EXY(I/C)	- 250V EXI(I/C)
- 250V EOY(I/C)	- 250V EOI(I/C)

Application Standard

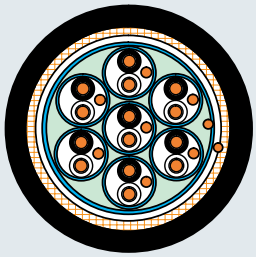
- Design guide : IEC 60092-350 & IEC 60092-376
- Insulation material : IEC 60092-351, HF HEPR
- Sheath material : IEC 60092-359, ST2 or SHF1
- Flame retardant : IEC 60332-1 & IEC 60332-3 Category A
- Fire resistance : IEC 60331-21(90min)
  IEC 60331-1,-2(120min)
- Halogen content : IEC 60754-1, 0.5% ↓ (For Halogen free cable only)
- Smoke emission : IEC 61034, 60% ↑ (For Halogen free cable only)
- Fluorine content : IEC 60684-2, 0.1% ↓ (For Halogen free cable only)
- pH and conductivity : IEC 60754-2, pH (4.3 ↑) & Conductivity (10㎲/mm ↓)
  (For Halogen free cable only)
- Cold bend/impact (Option) : CSA 22.2 NO. 0.3 (-40℃/-35℃) (Same as IEC 60092-350, 8.9)
- Oil resistant (Option) : IEEE 1580 TYPE "T", at 70℃x4h (For PVC sheath material only)
- Paint resistant (Option): Maker standard (Epoxy, Alkyd paint, at 100℃x168h)
  (For PVC sheath material only)
- Max. rated conductor temperature : 90℃

Core Identification

- Colored insulation plus Arabic number printing on the insulation
  Pair : White, Black
  Triad : White, Black, Red



EXI(I/C) (7P)



EOY(I/C) (7P)

Construction

Classification	Code	Construction detail
Conductor	E	- Stranded tinned annealed copper wires as per IEC 60228, Class 2
Fire resisting layer		- Mica/glass tape
Insulation		- HF HEPR as per IEC 60092-351
Twisting		- Two/Three Insulated cores shall be twisted together to form a pair/triad
Individual screen	(I)	- AL/PS tape with 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)	- AL/PS Tape with drain wire - A suitable tape may be applied on the collective screen
Inner covering		- Lapped covering - Applied to Armoured & Sheath cable
Armour	0	- Braid of Plain annealed copper wire - Coverage density : Min. 90% - A suitable separator tape(s) may be applied under/over the armour - Applied to Armoured & Sheath cable
Sheath	Y (I)	- Non-H/F type : ST2(Y) as per IEC 60092-359 - H/F type : SHF1(I) as per IEC 60092-359 - Outer sheath color : Black

Note. The other color of sheath and insulation may be applicable when purchaser require

Fire resistance

Instrumentation Cable with individual & collective screen

250V EXY(I/C), EOY(I/C), EXI(I/C), EOI(I/C)

No. of Units	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
1P	0.75	7	1.2	0.5	1.0	8.1±0.4	85	6.3±0.4	0.2	1.1	9.6±0.4	140
2P	0.75	7	1.2	0.5	1.2	12.8±0.5	195	10.6±0.4	0.3	1.3	14.8±0.6	320
3P	0.75	7	1.2	0.5	1.2	13.5±0.5	235	11.3±0.5	0.3	1.3	15.5±0.6	370
4P	0.75	7	1.2	0.5	1.3	15.0±0.6	290	12.6±0.5	0.3	1.4	17.0±0.7	440
5P	0.75	7	1.2	0.5	1.3	16.4±0.7	350	14.0±0.6	0.3	1.4	18.4±0.7	510
7P	0.75	7	1.2	0.5	1.4	18.1±0.7	445	15.5±0.6	0.3	1.5	20.1±0.8	620
10P	0.75	7	1.2	0.5	1.6	22.3±0.9	620	19.3±0.8	0.3	1.6	24.1±1.0	820
12P	0.75	7	1.2	0.5	1.6	23.3±0.9	705	20.3±0.8	0.3	1.7	25.3±1.0	935
14P	0.75	7	1.2	0.5	1.7	25.1±1.0	815	21.9±0.9	0.3	1.7	26.9±1.1	1,045
15P	0.75	7	1.2	0.5	1.7	25.8±1.0	875	22.6±0.9	0.3	1.8	27.8±1.1	1,125
19P	0.75	7	1.2	0.5	1.8	28.8±1.2	1,045	25.4±1.0	0.3	1.9	30.8±1.2	1,320
20P	0.75	7	1.2	0.5	1.8	29.4±1.2	1,125	26.0±1.0	0.3	1.9	31.4±1.3	1,405
24P	0.75	7	1.2	0.5	1.9	32.0±1.3	1,310	28.4±1.1	0.3	2.0	34.0±1.4	1,615
27P	0.75	7	1.2	0.5	2.0	33.9±1.4	1,460	30.1±1.2	0.4	2.1	36.3±1.5	1,865
30P	0.75	7	1.2	0.5	2.1	35.7±1.4	1,615	31.7±1.3	0.4	2.1	37.9±1.5	2,025
33P	0.75	7	1.2	0.5	2.1	37.2±1.5	1,760	33.2±1.3	0.4	2.2	39.6±1.6	2,205
37P	0.75	7	1.2	0.5	2.2	39.3±1.6	1,935	35.1±1.4	0.4	2.3	41.7±1.7	2,405
48P	0.75	7	1.2	0.5	2.4	44.5±1.8	2,490	39.9±1.6	0.4	2.5	46.9±1.9	3,020
1P	1.0	7	1.4	0.5	1.1	8.7±0.4	100	6.7±0.4	0.2	1.1	10.0±0.4	155
2P	1.0	7	1.4	0.5	1.2	13.4±0.5	220	11.2±0.4	0.3	1.3	15.4±0.6	355
3P	1.0	7	1.4	0.5	1.3	14.4±0.6	280	12.0±0.5	0.3	1.3	16.2±0.6	415
4P	1.0	7	1.4	0.5	1.3	15.8±0.6	345	13.4±0.5	0.3	1.4	17.8±0.7	500
5P	1.0	7	1.4	0.5	1.4	17.6±0.7	425	15.0±0.6	0.3	1.5	19.6±0.8	590
7P	1.0	7	1.4	0.5	1.4	19.1±0.8	530	16.5±0.7	0.3	1.5	21.1±0.8	710
10P	1.0	7	1.4	0.5	1.6	23.5±0.9	735	20.5±0.8	0.3	1.7	25.5±1.0	965
12P	1.0	7	1.4	0.5	1.6	24.6±1.0	840	21.6±0.9	0.3	1.7	26.6±1.1	1,080
14P	1.0	7	1.4	0.5	1.7	26.5±1.1	975	23.3±0.9	0.3	1.8	28.5±1.1	1,230
15P	1.0	7	1.4	0.5	1.7	27.3±1.1	1,050	24.1±1.0	0.3	1.8	29.3±1.2	1,310
19P	1.0	7	1.4	0.5	1.9	30.7±1.2	1,265	27.1±1.1	0.3	1.9	32.5±1.3	1,545
20P	1.0	7	1.4	0.5	1.9	31.3±1.3	1,360	27.7±1.1	0.3	2.0	33.3±1.3	1,660
24P	1.0	7	1.4	0.5	2.0	34.1±1.4	1,590	30.3±1.2	0.4	2.1	36.5±1.5	2,000
27P	1.0	7	1.4	0.5	2.1	36.1±1.4	1,770	32.1±1.3	0.4	2.2	38.5±1.5	2,205
30P	1.0	7	1.4	0.5	2.1	37.8±1.5	1,945	33.8±1.4	0.4	2.2	40.2±1.6	2,395
33P	1.0	7	1.4	0.5	2.2	39.6±1.6	2,135	35.4±1.4	0.4	2.3	42.0±1.7	2,610
37P	1.0	7	1.4	0.5	2.3	41.9±1.7	2,350	37.5±1.5	0.4	2.4	44.3±1.8	2,855
48P	1.0	7	1.4	0.5	2.5	47.4±1.9	3,030	42.6±1.7	0.4	2.6	49.8±2.0	3,595

HIS CABLE

IEC 60092-350, 353, 354, 376

250V EXY(I/C), EOY(I/C), EXI(I/C), EOI(I/C)

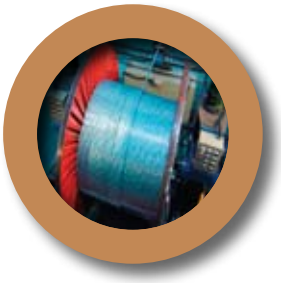
No. of Units	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
1P	1.5	7	1.7	0.6	1.1	9.7±0.4	120	7.7±0.4	0.2	1.1	11.0±0.4	180
2P	1.5	7	1.7	0.6	1.3	15.3±0.6	280	12.9±0.5	0.3	1.4	17.3±0.7	435
3P	1.5	7	1.7	0.6	1.3	16.2±0.6	350	13.8±0.6	0.3	1.4	18.2±0.7	510
4P	1.5	7	1.7	0.6	1.4	18.1±0.7	440	15.5±0.6	0.3	1.5	20.1±0.8	615
5P	1.5	7	1.7	0.6	1.5	20.1±0.8	540	17.3±0.7	0.3	1.5	21.9±0.9	720
7P	1.5	7	1.7	0.6	1.5	21.9±0.9	675	19.1±0.8	0.3	1.6	23.9±1.0	885
10P	1.5	7	1.7	0.6	1.7	26.9±1.1	945	23.7±0.9	0.3	1.8	28.9±1.2	1,205
12P	1.5	7	1.7	0.6	1.8	28.4±1.1	1,095	25.0±1.0	0.3	1.9	30.4±1.2	1,370
14P	1.5	7	1.7	0.6	1.9	30.6±1.2	1,265	27.0±1.1	0.3	1.9	32.4±1.3	1,540
15P	1.5	7	1.7	0.6	1.9	31.5±1.3	1,360	27.9±1.1	0.3	2.0	33.5±1.3	1,665
19P	1.5	7	1.7	0.6	2.0	35.1±1.4	1,625	31.3±1.3	0.4	2.1	37.5±1.5	2,045
20P	1.5	7	1.7	0.6	2.1	36.1±1.4	1,765	32.1±1.3	0.4	2.2	38.5±1.5	2,195
24P	1.5	7	1.7	0.6	2.2	39.3±1.6	2,065	35.1±1.4	0.4	2.3	41.7±1.7	2,535
27P	1.5	7	1.7	0.6	2.3	41.6±1.7	2,300	37.2±1.5	0.4	2.4	44.0±1.8	2,795
30P	1.5	7	1.7	0.6	2.4	43.8±1.8	2,545	39.2±1.6	0.4	2.4	46.0±1.8	3,045
33P	1.5	7	1.7	0.6	2.4	45.6±1.8	2,770	41.0±1.6	0.4	2.5	48.0±1.9	3,315
37P	1.5	7	1.7	0.6	2.5	48.2±1.9	3,045	43.4±1.7	0.4	2.6	50.6±2.0	3,625
48P	1.5	7	1.7	0.6	2.8	54.7±2.2	3,950	49.3±2.0	0.4	2.8	56.9±2.3	4,580
1T	0.75	7	1.2	0.5	1.1	8.7±0.4	105	6.7±0.4	0.2	1.1	10.0±0.4	160
2T	0.75	7	1.2	0.5	1.3	14.1±0.6	240	11.7±0.5	0.3	1.3	15.9±0.6	375
3T	0.75	7	1.2	0.5	1.3	15.0±0.6	300	12.6±0.5	0.3	1.4	17.0±0.7	450
4T	0.75	7	1.2	0.5	1.3	16.4±0.7	370	14.0±0.6	0.3	1.4	18.4±0.7	530
5T	0.75	7	1.2	0.5	1.4	18.4±0.7	455	15.8±0.6	0.3	1.5	20.4±0.8	630
7T	0.75	7	1.2	0.5	1.5	20.9±0.8	585	18.1±0.7	0.3	1.6	22.9±0.9	790
10T	0.75	7	1.2	0.5	1.7	25.7±1.0	820	22.5±0.9	0.3	1.8	27.7±1.1	1,070
12T	0.75	7	1.2	0.5	1.7	26.5±1.1	935	23.3±0.9	0.3	1.8	28.5±1.1	1,190
14T	0.75	7	1.2	0.5	1.8	28.5±1.1	1,080	25.1±1.0	0.3	1.9	30.5±1.2	1,355
15T	0.75	7	1.2	0.5	1.8	29.4±1.2	1,160	26.0±1.0	0.3	1.9	31.4±1.3	1,440
19T	0.75	7	1.2	0.5	2.0	33.0±1.3	1,405	29.2±1.2	0.3	2.0	34.8±1.4	1,705
20T	0.75	7	1.2	0.5	2.0	33.7±1.3	1,505	29.9±1.2	0.3	2.1	35.7±1.4	1,830
24T	0.75	7	1.2	0.5	2.1	36.7±1.5	1,765	32.7±1.3	0.4	2.2	39.1±1.6	2,205
27T	0.75	7	1.2	0.5	2.2	38.8±1.6	1,965	34.6±1.4	0.4	2.3	41.2±1.6	2,430
30T	0.75	7	1.2	0.5	2.2	40.6±1.6	2,155	36.4±1.5	0.4	2.3	43.0±1.7	2,645
33T	0.75	7	1.2	0.5	2.3	42.6±1.7	2,370	38.2±1.5	0.4	2.4	45.0±1.8	2,880
37T	0.75	7	1.2	0.5	2.4	45.0±1.8	2,610	40.4±1.6	0.4	2.5	47.4±1.9	3,150
48T	0.75	7	1.2	0.5	2.6	50.9±2.0	3,360	45.9±1.8	0.4	2.7	53.3±2.1	3,970

Fire resistance

Instrumentation Cable with individual & collective screen

250V EXY(I/C), EOY(I/C), EXI(I/C), EOI(I/C)

No. of Units	Conductor			Thickness of Insulation	Unarmoured			Armoured				
	Nominal Area	Min. Number of wires	Max. Dia.		Thickness of outer sheath	Nominal overall dia.	Cable Weight (Approx.)	Nominal over dia. inner covering	Dia. of wire for armour	Thickness of outer sheath	Nominal overall Dia.	Cable Weight (Approx.)
No.	mm^2	EA.	mm	mm	mm	mm	kg/km	mm	mm	mm	mm	kg/km
1T	1.0	7	1.4	0.5	1.1	9.2±0.4	125	7.2±0.4	0.2	1.1	10.5±0.4	180
2T	1.0	7	1.4	0.5	1.3	14.9±0.6	280	12.5±0.5	0.3	1.4	16.9±0.7	430
3T	1.0	7	1.4	0.5	1.3	15.8±0.6	355	13.4±0.5	0.3	1.4	17.8±0.7	510
4T	1.0	7	1.4	0.5	1.4	17.6±0.7	450	15.0±0.6	0.3	1.5	19.6±0.8	620
5T	1.0	7	1.4	0.5	1.5	19.6±0.8	550	16.8±0.7	0.3	1.5	21.4±0.9	725
7T	1.0	7	1.4	0.5	1.6	22.3±0.9	710	19.3±0.8	0.3	1.6	24.1±1.0	910
10T	1.0	7	1.4	0.5	1.7	27.2±1.1	980	24.0±1.0	0.3	1.8	29.2±1.2	1,240
12T	1.0	7	1.4	0.5	1.8	28.3±1.1	1,135	24.9±1.0	0.3	1.9	30.3±1.2	1,410
14T	1.0	7	1.4	0.5	1.9	30.4±1.2	1,310	26.8±1.1	0.3	1.9	32.2±1.3	1,585
15T	1.0	7	1.4	0.5	1.9	31.3±1.3	1,410	27.7±1.1	0.3	2.0	33.3±1.3	1,710
19T	1.0	7	1.4	0.5	2.0	34.9±1.4	1,690	31.1±1.2	0.4	2.1	37.3±1.5	2,110
20T	1.0	7	1.4	0.5	2.1	35.9±1.4	1,830	31.9±1.3	0.4	2.1	38.1±1.5	2,245
24T	1.0	7	1.4	0.5	2.2	39.1±1.6	2,145	34.9±1.4	0.4	2.3	41.5±1.7	2,615
27T	1.0	7	1.4	0.5	2.3	41.3±1.7	2,390	36.9±1.5	0.4	2.3	43.5±1.7	2,865
30T	1.0	7	1.4	0.5	2.3	43.3±1.7	2,625	38.9±1.6	0.4	2.4	45.7±1.8	3,145
33T	1.0	7	1.4	0.5	2.4	45.4±1.8	2,885	40.8±1.6	0.4	2.5	47.8±1.9	3,430
37T	1.0	7	1.4	0.5	2.5	47.9±1.9	3,180	43.1±1.7	0.4	2.6	50.3±2.0	3,755
48T	1.0	7	1.4	0.5	2.7	54.2±2.2	4,095	49.0±2.0	0.4	2.8	56.6±2.3	4,745
1T	1.5	7	1.7	0.6	1.1	10.2±0.4	150	8.2±0.4	0.2	1.2	11.7±0.5	220
2T	1.5	7	1.7	0.6	1.4	17.0±0.7	365	14.4±0.6	0.3	1.4	18.8±0.8	520
3T	1.5	7	1.7	0.6	1.4	18.1±0.7	460	15.5±0.6	0.3	1.5	20.1±0.8	630
4T	1.5	7	1.7	0.6	1.5	20.1±0.8	575	17.3±0.7	0.3	1.5	21.9±0.9	760
5T	1.5	7	1.7	0.6	1.6	22.4±0.9	705	19.4±0.8	0.3	1.6	24.2±1.0	910
7T	1.5	7	1.7	0.6	1.7	25.5±1.0	925	22.3±0.9	0.3	1.7	27.3±1.1	1,155
10T	1.5	7	1.7	0.6	1.9	31.3±1.3	1,285	27.7±1.1	0.3	2.0	33.3±1.3	1,585
12T	1.5	7	1.7	0.6	1.9	32.3±1.3	1,475	28.7±1.1	0.3	2.0	34.3±1.4	1,785
14T	1.5	7	1.7	0.6	2.0	34.8±1.4	1,700	31.0±1.2	0.4	2.1	37.2±1.5	2,120
15T	1.5	7	1.7	0.6	2.1	36.1±1.4	1,845	32.1±1.3	0.4	2.2	38.5±1.5	2,280
19T	1.5	7	1.7	0.6	2.2	40.2±1.6	2,220	36.0±1.4	0.4	2.3	42.6±1.7	2,700
20T	1.5	7	1.7	0.6	2.3	41.3±1.7	2,400	36.9±1.5	0.4	2.3	43.5±1.7	2,875
24T	1.5	7	1.7	0.6	2.4	45.0±1.8	2,815	40.4±1.6	0.4	2.5	47.4±1.9	3,355
27T	1.5	7	1.7	0.6	2.5	47.6±1.9	3,140	42.8±1.7	0.4	2.6	50.0±2.0	3,705
30T	1.5	7	1.7	0.6	2.6	50.1±2.0	3,470	45.1±1.8	0.4	2.7	52.5±2.1	4,070
33T	1.5	7	1.7	0.6	2.7	52.5±2.1	3,815	47.3±1.9	0.4	2.8	54.9±2.2	4,440
37T	1.5	7	1.7	0.6	2.8	55.4±2.2	4,205	50.0±2.0	0.4	2.9	57.8±2.3	4,865
48T	1.5	7	1.7	0.6	3.1	62.8±2.5	5,440	56.8±2.3	0.4	3.1	65.0±2.6	6,155





Technical Data





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Technical Data

1. Electrical data for HF EPR or HF HEPR

Conductor (additional data)			Conductor Resistance 20℃		Test voltage						Insulation Resistance 20℃	
Nominal Section Area	Min.no.of wires	Max. Dia.	-	Pair	12/20kV	8.7/15kV	6/10kV	3.6/6kV	0.6/1kV	250V	0.6/1kV	250V
mm^2	EA	mm	Ω/km	Ω/km	kV	kV	kV	kV	kV	kV	MΩ • km	MΩ • km
0.75	7	1.2	24.8	26.3	-	-	-	-	-	1.5	-	1.035
1.0	7	1.4	18.2	19.3	-	-	-	-	3.5	1.5	1.160	910
1.5	7	1.7	12.2	12.9	-	-	-	-	3.5	1.5	1.020	910
2.5	7	2.2	7.56	8.02	-	-	-	-	3.5	-	850	-
4	7	2.7	4.70	-	-	-	-	-	3.5	-	710	-
6	7	33	3.11	-	-	-	-	-	3.5	-	600	-
10	7	4.2	1.84	-	-	-	-	12.5	3.5	-	485	-
16	7	5.3	1.16	-	-	-	21.0	12.5	3.5	-	400	-
25	7	6.6	0.734	-	-	30.5	21.0	12.5	3.5	-	405	-
35	7	7.9	0.529	-	42.0	30.5	21.0	12.5	3.5	-	350	-
50	19	9.1	0.391	-	42.0	30.5	21.0	12.5	3.5	-	335	-
70	19	11.0	0.270	-	42.0	30.5	21.0	12.5	3.5	-	310	-
95	19	12.9	0.195	-	42.0	30.5	21.0	12.5	3.5	-	270	-
120	37	14.5	0.154	-	42.0	30.5	21.0	12.5	3.5	-	260	-
150	37	16.2	0.126	-	42.0	30.5	21.0	12.5	3.5	-	270	-
185	37	18.0	0.100	-	42.0	30.5	21.0	12.5	3.5	-	280	-
240	61	20.6	0.0762	-	42.0	30.5	21.0	12.5	3.5	-	260	-
300	61	23.1	0.0607	-	42.0	30.5	21.0	12.5	3.5	-	245	-
400	61	26.1	0.0475	-	42.0	30.5	21.0	12.5	3.5	-	240	-
500	61	29.2	0.0369	-	42.0	30.5	21.0	12.5	3.5	-	240	-
630	91	33.2	0.0286	-	-	-	-	-	3.5	-	245	-

2. Current ratings for continuous

Nominal cross-sectional Area (mm²)	Single core	Two core	Three core & four core
0.75	14	11	10
1.0	17	13	12
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
400	719	611	503
500	827	703	579
630	955	812	669

NOTES)

1. Maximum permissible service temperature of the conductor is 90℃.

2. The current ratings given above are based on an ambient air temperature of 45℃.

3. The current ratings given above are for 6 cables of less bunched or laid together in flat formation. When more than 6 cables are bunched or laid close together, the current ratings given above should be multiplied correction factor 0.85.In case of cables not being loaded simultaneously, consideration of the actual loading appertaining is permitted.

4. For cables with more than 4 core cables, the current ratings are given by the Formula ;

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

Where,
I_1 : Current for single core cable
N : Number of cores

No. of cores	1.0 mm² (A)
2	13
4	12
5	10
7	9
9	8
12	7
14	7
16	7
19	6
24	6
30	5
37	5
44	5
77	4

5. Correction factors for various ambient air temperature

Maximum conductor Temperature	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

Technical Data

3. Short Circuit Current Ratings

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

Nominal Sectional Area	Short circuit currents(kA)				
	Duration of short circuit in second				
mm^2	0.1sec	0.2sec	0.3sec	0.5sec	1.0sec
1.0	0.45	0.32	0.26	0.20	0.14
1.5	0.68	0.48	0.39	0.30	0.21
2.5	1.13	0.80	0.65	0.51	0.36
4	1.81	1.28	1.04	0.81	0.57
6	2.71	1.92	1.57	1.21	0.86
10	4.52	3.20	2.61	20.2	1.43
16	7.24	5.12	4.18	3.24	2.29
25	11.31	8.00	6.53	5.06	3.58
35	15.84	11.20	9.14	7.08	5.01
50	22.62	16.00	13.06	10.12	7.15
70	31.67	22.40	18.29	14.16	10.02
95	42.98	30.39	24.82	19.22	13.59
120	54.30	38.39	31.35	24.28	17.17
150	67.87	47.99	39.19	30.35	21.46
185	83.71	59.19	48.33	37.43	26.47
240	108.59	76.79	62.70	48.56	34.34
300	135.74	95.98	78.37	60.71	42.93

HIS CABLE
IEC 60092-350, 353, 354, 376

VOLTAGE RATING SELECTION

Selection cable for A.C systems

Supply system	Supply category	System voltage (kV)					Recommended (kV)	
		Phase to earth (Uo)		Phase to phase (U)		Maximum sustained voltage (Um)	IEC standard	BS standards
		Above	Up to and including	Above	Up to and including		U_o / U	U_o / U
3-Phase 4-Wire	A & B	-	0.15	-	0.25	0.28	0.15 / 0.25	0.15 / 0.25
		0.15	0.6	0.25	1	1.2	0.6 / 1	0.6 / 1
3-Phase 4-Wire	C	-	-	-	0.15	-	0.15 / 0.25	0.15 / 0.25
		-	-	0.15	0.6	-	0.6 / 1	0.6 / 1
3-Phase 3-Wire	A & B	-	0.15	-	0.25	0.28	0.15 / 0.25	0.15 / 0.25
		0.15	0.6	0.25	1	1.2	0.6 / 1	0.6 / 1
		0.6	1.9	-	3.3	3.6	1.8 / 3	1.9 / 3.3
		1.9	3.8	3.3	6.6	7.2	3.6 / 6	3.8 / 6.6
		3.8	6.35	6.6	11	12	6 / 10	6.35 / 11
		6.35	8.7	11	15	17	8.7 / 15	-
		8.7	12.7	15	22	24	12 / 20	12.7 / 22
3-Phase 3-Wire	C	-	-	-	0.15	-	0.15 / 0.25	0.15 / 0.25
		-	-	0.15	0.6	-	0.6 / 1	0.6 / 1
		-	-	0.6	1.9	-	1.8 / 3	1.9 / 3.3
		-	-	1.9	3.3	3.6	3.6 / 6	3.8 / 6.6
		-	-	3.3	6.6	7.2	6 / 10	6.35 / 11
		-	-	6.6	11	12	8.7 / 15	11 / 11
		-	-	11	15	17.5	12 / 20	12.7 / 22
2-Phase 3-Wire or 2-Phase 4-Wire	A & B	-	0.15	-	0.21	-	0.15 / 0.25	0.15 / 0.25
		0.15	0.6	-	0.84	-	0.6 / 1	0.6 / 1
2-Phase 3-Wire or 2-Phase 4-Wire	C	-	-	-	0.15	-	0.15 / 0.25	0.15 / 0.25
		-	-	0.15	0.a6	-	0.6 / 1	0.6 / 1
		-	-	0.6	1.9	-	1.8 / 3	1.9 / 3.3
1-Phase 3-Wire	A & B	-	0.15	-	0.25	0.28	0.15 / 0.25	0.15 / 0.25
		0.15	0.6	0.25	1	1.2	0.6 / 1	0.6 / 1
1-Phase 3-Wire	C	-	-	-	0.15	-	0.15 /0.25	0.15 / 0.25
		-	-	0.25	0.6	-	0.6 / 1	0.6 / 1
1-Phase 2-Wire or 1-Phase 1-Wire	C	-	-	-	0.15	-	0.15 /0.25	0.15 / 0.25
		-	-	0.15	0.6	-	0.6 / 1	0.6 / 1
		-	-	0.6	1.9	-	1.8 / 3	19. / 3.3
		-	-	1.9	3.3	3.6	3.6 / 6	3.8 / 6.6
		-	-	3.3	6.6	7.2	6 / 10	6.35 / 11
		-	-	6.6	11	12	8.7 / 15	-
		-	-	11	15	17.5	12 / 20	12.7 / 22

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

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

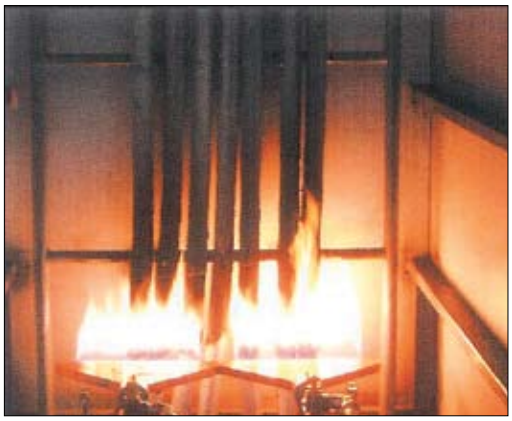
Category B : This category comprises those systems in which, under fault conditions, are operated for a short time, not exceeding 8 hours on any occasion, faults in any year should not exceed 125 hours.

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

Technical Data

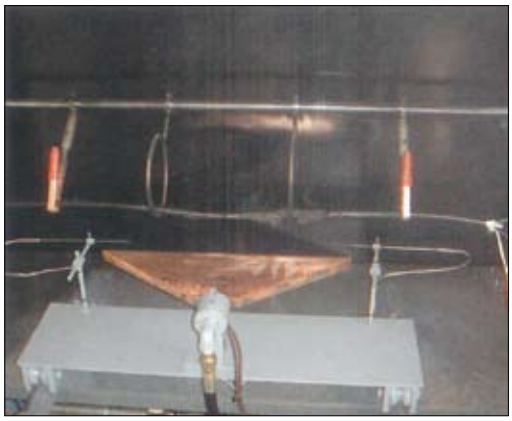
TEST METHODS & TEST EQUIPMENT

1. Flame retardant test



IEC 60332-3. CAT. A (VTFT)

2. Fire resistant test



IEC 60331 (at 750℃, 1000℃)

3. Cold test (Bending / Impact)



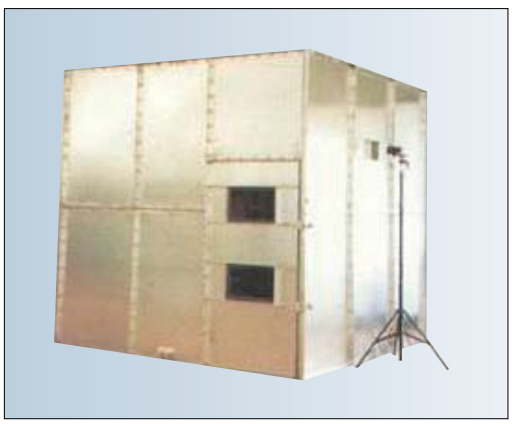
CSA C22.2 No.03 (-40℃/ -35℃)

4. Halogen content test



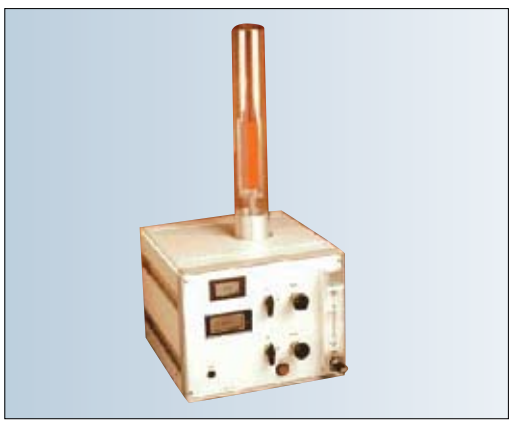
IEC 60754-1,2 Test

5. Smoke emission test



IEC 61034-1,2 Test

6. Oxygen index test



ASTM D 2863

INSTALLATION RECOMMENDATIONS

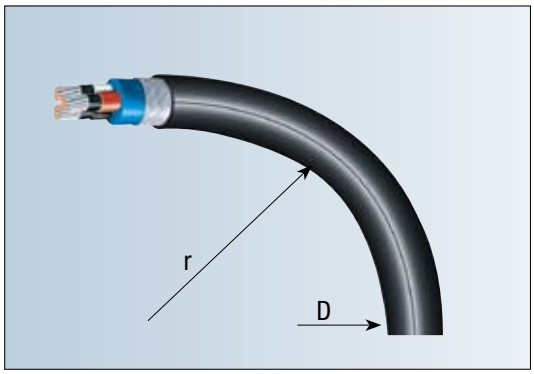
The following installation recommendations are in accordance with IEC regulation and practice.
Different regulations may apply in other countries.

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
Up to 1.8/3kV	Unarmored or unbraided	
	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

Notes) D : Overall diameter of cable



2. Installation temperature

Minimum recommended installation temperature for cables shall be -20℃.
But, if the ambient temperature were below -20℃, the cable should be installed after maintained at room temperature (about 15~25℃) for 24 hours or more.

3. Pulling tension

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

p = 5kg x total cross section of conductors in the armoured cable or,
p = 2.5kg x total cross section of conductors in the unarmoured cable

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

4. Explosion risk areas

1) Areas

The areas on board are usually classified in two main categories 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.

Technical Data

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 of armouring. where mechanical damage is possible, such cables should otherwise be mechanically protected or installed in ducts or similar.

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

5. Earthing of metal coverings of cables

1) General requirements

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

Metal covering of single core 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 and only.
when single core cables for AC and DC with ripple content higher than 10% are installed in or passing through hazardous areas, the metal screen or armour is to be earthed inside the hazardous area to avoid dangerous potential between screen armour and earthed part of the installation.

2) Cross section of earth connections

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

3) Earthing through metal clamps etc.

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

4) Earthing through cable glands

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

5) Earthing of metal pipes, conduits etc.

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

6. Fixing of cables

Cables are to be suitably fixed to the supports. In order to guard against the effects of electrodynamics 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

7. Mechanical protection of cables

Cables are to be installed in such a way that they are not subject to damaging mechanical stressed. where this can not be obtained the cables are to be protected. Unless the cable itself(for example armour or sheath) provides adequate protection the cables should be :

- Enclosed in suitable conduits or casings
- Covered by steel 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 armoured.
The thickness of the protective conduits must be at least 4mm.
The wall thickness of the protective conduit must be at least 2mm.
Cables lay on aluminum supports may have a corresponding protection of aluminum.
the thickness must be at least 4mm.
Metal casing used for mechanical protection of cables should be efficiently protected against corrosion.

Technical Data

8. Installation of cables for fire properties

Cables must at least meet the flame retardant requirements. On board passenger ships, cargo-ships and mobile offshore units, where requirements are considered to be satisfied if the cables have characteristics complying withe 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.

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

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

When choosing cable types special attention should be paid to reduce possible damage due to corrosion in case of a fire.
Non-halogen free cables(materials)will give off corrosive gases during a fire.
The corrosion effect depends on the amount of halogens in the materials used.
Flame retardant cables are to 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.

9. Intrinsically safe installations

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

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

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

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

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

e) Protection against electrical and magnetic fields
Where i.s circuits are exposed to magnetic or electrical field that may destroy the intrinsic safety of the system.
Precautions must be taken during installation. Such precautions may be:
- Cables for i.s circuits and non-i.s circuits to be installed a minimum distance of 50mm apart.
  The minimum distance to heavy current cables using D.C with a high ripple content should be 300mm.
- Cables for i.s circuits and non-i.s circuits to be separated panel of conducting material which is earthed.
- Cables for i.s circuits to have effective transposition.

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

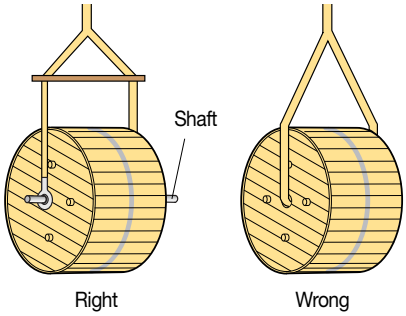
HIS CABLE
IEC 60092-350, 353, 354, 376

Handling, Installation Method & Notice

■ Loading & Transportation

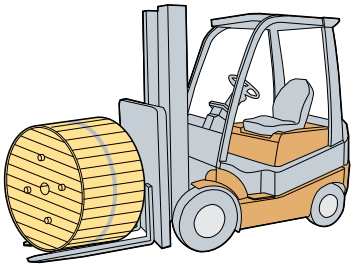
1. In case of a crane
Should transport by using standard rope and a shaft which is put in the center of drum.

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



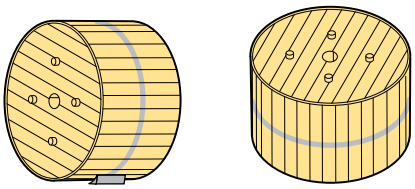
2. In case of a forklift
Drums should not be damaged by a forklift.

* 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



LRQA Business Assurance

CERTIFICATE OF APPROVAL

This is to certify that the Quality Management System of:

TMC Co., Ltd.
Seoul and Cheonan-si
Korea

has been approved by Lloyd's Register Quality Assurance to the following Quality Management System Standards:

ISO 9001:2008
KS Q ISO 9001:2009

The Quality Management System is applicable to:

Design and manufacture of shipboard cables, offshore cables, electrical cables and fiber optic cables.

This certificate is valid only in association with the certificate schedule bearing the same number on which the locations applicable to this approval are listed.

Approval Certificate No: SEO 0981028

Original Approval: 2 December 1998
Current Certificate: 1 January 2011
Certificate Expiry: 31 December 2013

Issued by: LRQA Korea Ltd. for and on behalf of Lloyd's Register Quality Assurance Limited

Cert. of ISO 9001



LRQA Business Assurance

CERTIFICATE OF APPROVAL

This is to certify that the Environmental Management System of:

TMC Co., Ltd.
368-7, Gasan-ri, Ibjang-myeon, Cheonan-si
Chungnam, 330-821, Korea

has been approved by Lloyd's Register Quality Assurance to the following Environmental Management System Standard:

ISO 14001:2004
KS I ISO 14001:2009

The Environmental Management System is applicable to:

Design and manufacture of shipboard cables, offshore cables, electrical cables and fiber optic cables.

Approval Certificate No: SEO 0052017

Original Approval: 1 February 2006
Current Certificate: 1 February 2012
Certificate Expiry: 31 January 2015

Issued by: LRQA Korea Ltd. for and on behalf of Lloyd's Register Quality Assurance Limited

Cert. of ISO 14001



LRQA Business Assurance

CERTIFICATE OF APPROVAL

This is to certify that the Occupational Health & Safety Management System of:

TMC Co., Ltd.
Cheonan-si, Chungnam
Korea

has been approved by Lloyd's Register Quality Assurance to the following specification:

OHSAS 18001:2007

The Occupational Health & Safety Management System is applicable to:

Design and manufacture of shipboard cables, off-shore cables, electrical cables and fiber optic cables.

Approval Certificate No: SEO 6004071

Original Approval: 22 July 2008
Current Certificate: 22 July 2011
Certificate Expiry: 21 July 2014

Issued by: LRQA Korea Ltd. for and on behalf of Lloyd's Register Quality Assurance Limited

Cert. of OHSAS 18001

Class Type Approval

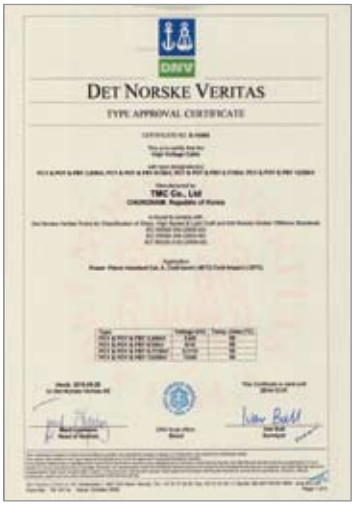
HIS CABLE
IEC 60092-350, 353, 354, 376



ABS



BV



DNV



GL



KR



LR



NK



RINA

songhyun

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