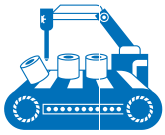
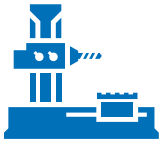
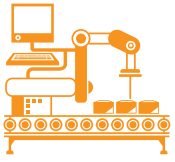
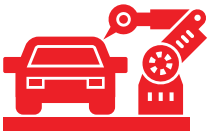
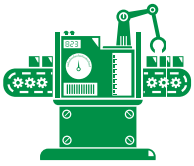


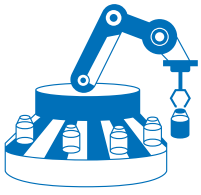




RR KĀBEL







Single Core, Control & Data Cables

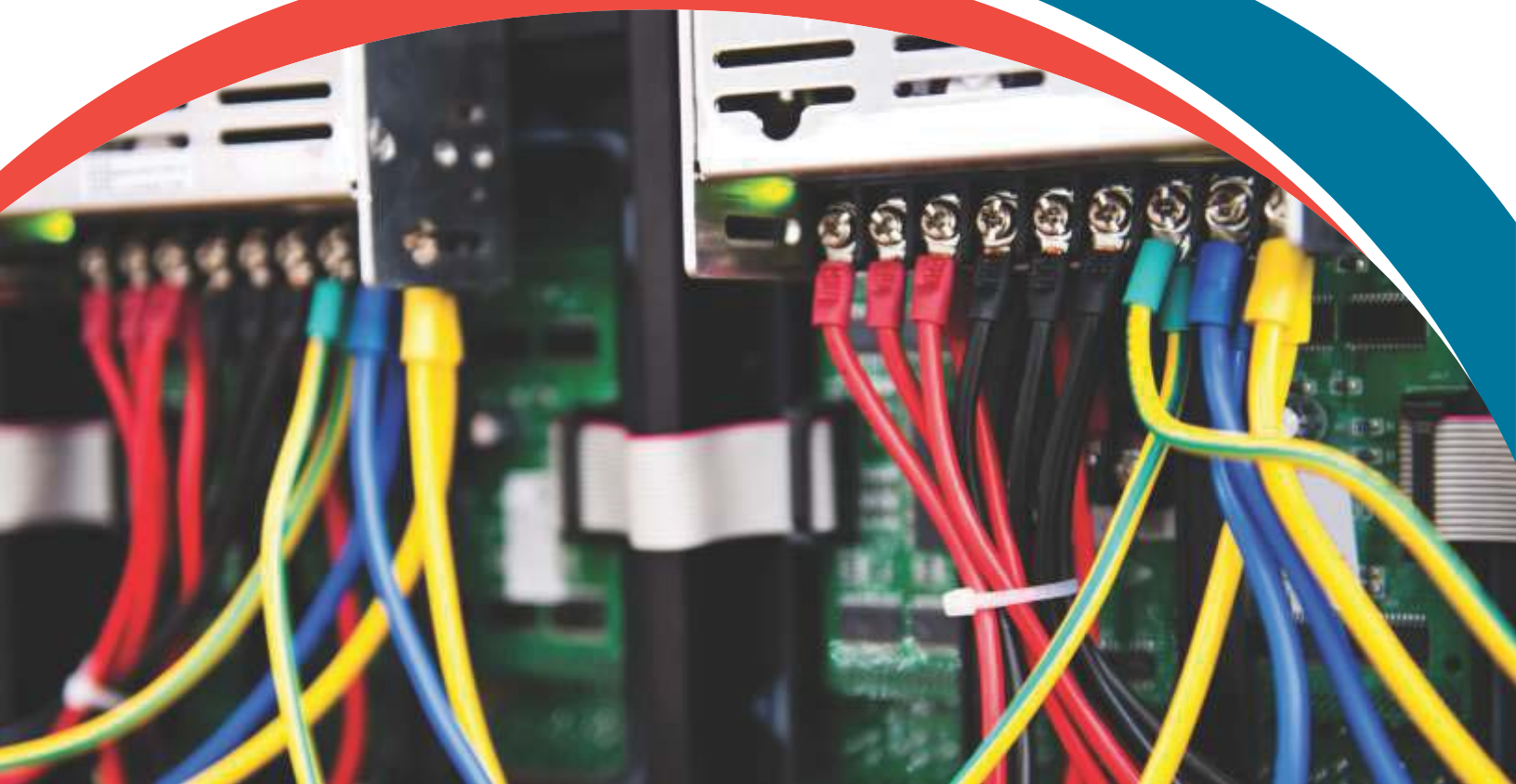
RR Kabel is a part of RR Global, which is one of the leading conglomerates in the electrical sector. Working with determination to produce products with best technologies, RR Kabel has always made the latest advances in wire design and engineering. Today, RR Kabel offers the latest and widest range of premium wires & cables for various residential, commercial, industrial and infrastructure purposes.

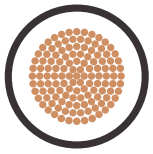
For us at RR Kabel think wires are not just objects, we believe that wires play the role of nerves in the body. When you believe this, you have designers, engineers, fabricators, and other partners who need to have incredible design and commitment to pursue and create a product that can be trusted, and relied upon.

We believe that the future of design lies with innovation that instigates one to push boundaries, eliminate borders between sciences. The materials we use may sometimes be unique, sometimes experimental, many are collaborations but they all represent extraordinary research and dedication by engineers, designers and visionaries.

RR Kabel is constantly emerging with new marketing and technical perspectives that are globally significant, we are aiming to create significance of our multi-faceted range when designing making it better environment and the customers.

SINGLE CORE





Product Name
Ratnaflex Flexible (IS 694)

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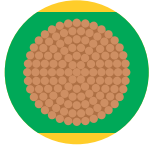

Product Name
H05V-K & H07V-K

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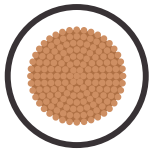

Product Name
H05V2-K & H07V2-K

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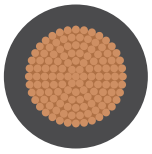

Product Name
H05Z-K & H07Z-K

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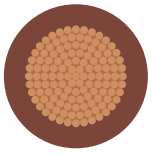

Product Name
H05Z1-K & H07Z1-K

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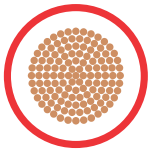

Product Name
BS 6231 CK 90°C

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CROSS SECTIONAL VIEW

RATNAFLEX FLEXIBLE (IS 694)

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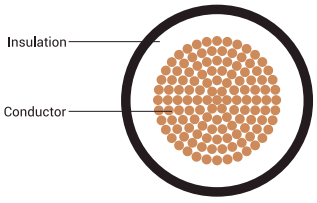

Application

Cable designed for internal wiring in switch control, relay and instrumentation panels of power switchgear and for purposes such as stationary, static appliances, internal connectors in rectifier equipment, motor starters and controllers.

PVC 70°C cables suitable for general wiring in control cabinets, panels and power switchgear.

FR PVC 7°C cables suitable for ambient wiring in control cabinets, panels and power switchgear for enhanced safety.

HR PVC cables suitable for higher ambient wiring in control cabinets, panels and power switchgear.

HR FR PVC 85°C cables suitable for higher ambient wiring in control cabinets, panels and power switchgear and enhanced safety.

FR-LSH PVC cables are suitable for wiring in public places like schools, hospitals, theatres, etc. These are also suitable for fire prone areas in industries and commercial infrastructure.

HFFR cables, suitable for critical and dense wiring for utmost safety of public like schools, hospitals, theatres, etc. These are also suitable for fire prone areas.

Technical Data

Approvals : IS 694 marked, FIA / TAC

Conductor : Electrolytic grade annealed copper

Voltage : Up to and including 1100V

Packing : Standard packing of 100 mtr. in coil. Longer length available on request

Variants Available

Product Type	Size Range	Specifications
RR KABEL	0.5 & 0.75 Sq. mm	IS 694, IS 8130 Class 5, IS 5831 Type D
RATNAFLEX	1 to 4 & 25 to 300 Sq. mm	IS 694, IS 8130 Class 5, IS 5831 Type D
RR KABEL FR	0.5 to 300 Sq. mm	IS 694, IS 8130 Class 5, IS 5831 Type D (FR)
RR KABEL FR-LSH	0.5 to 150 Sq. mm	IS 694, IS 8130 Class 5, IS 5831 Type D (FR-LSH)
RR KABEL HR	0.5 & 0.75 Sq. mm, 6 to 16 Sq. mm	IS 694, IS 8130 Class 5, IS 5831 Type C (HR)
RATNAFLEX HR	1 to 4 & 25 to 300 Sq. mm	IS 694, IS 8130 Class 5, IS 5831 Type C (HR)
RR KABEL HR FR	0.5 to 300 Sq. mm	IS 694, IS 8130 Class 5, IS 5831 Type C (HR FR)
RR KABEL HFFR	0.5 to 16 Sq. mm	EN 60228 class 5, Type HFFR TI 7 BS EN 50363-7

Cable Design Parameters :

Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required:
01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - green/yellow, 07 - white, 08 - violet, 09 - brown, 10 - orange, 11 - pink, 12 - grey.

By adding the suffix (in place of 'y') for the insulation material required:
1 – PVC 70°C, 2 - PVC FR 70°C, 3 - PVC HR 85°C, 4 - PVC HR 85°C +FR, 5 - PVC FR-LSH, 7 - HFFR.

Part Number	Nominal Cross - Section Area (Sq. mm)	No of Strands/Max. Strand Diameter (mm)	Nominal Insulation Thickness (mm)	Maximum Diameter Over Insulation (mm)
02010101xxy0	0.5	16/0.2	0.6	2.6
02010102xxy0	0.75	24/0.2	0.6	2.8
02010103xxy0	1	32/0.2	0.6	3.0
02010104xxy0	1.5	30/0.25	0.7	3.4
02010105xxy0	2.5	50/0.25	0.8	4.1
02010106xxy0	4	56/0.3	0.8	4.8
02010107xxy0	6	84/0.3	0.8	5.3
02010108xxy0	10	140/0.3	1.0	7.0
02010109xxy0	16	126/0.4	1.0	8.1
02010110xxy0	25	196/0.4	1.2	10.2
02010111xxy0	35	276/0.4	1.2	11.7
02010112xxy0	50	396/0.4	1.4	13.9
02010113xxy0	70	360/0.5	1.4	16.0
02010114xxy0	95	480/0.5	1.6	18.2
02010115xxy0	120	608/0.5	1.6	20.2
02010116xxy0	150	750/0.5	1.8	22.5
02010117xxy0	185	931/0.5	2.0	24.9
02010118xxy0	240	1200/0.5	2.2	28.4
02010119xxy0	300	1500/0.5	2.4	31.0

H05V-K & H07V-K

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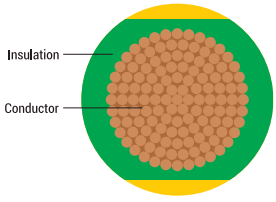

Application

Cable designed for internal wiring in switch control, relay and instrumentation panels of power switchgear and for purposes such as Stationary, static appliances, internal connectors in rectifier equipment, motor starters and controllers.

Standard

DIN EN 50525-2-31, VDE 0285-525-2-31, BS EN 50525-2-31.

Technical Data

Voltage Rating : 0.5 to 1 mm² - 300 / 500V, 1.5 to 240 mm² - 450 / 750V

Temperature Range : -30°C to +70°C

Minimum Bending Radius :

Cable diameter ≤ 8 mm : 4 x outer diameter

Approx. diameter > 8 to 12 mm : 5 x outer diameter

Approx. diameter > 12 mm : 6 x outer diameter

Test Voltage : 2500V

Construction

Conductor Class 5 flexible plain / metal coated stranded according to EN 60228.

Insulation PVC (Polyvinyl chloride) TI1 to BS EN 50363- 3.

Properties

PVC self-extinguishing and flame retardant according to EN 60332-1-2.

Cable Design Parameters :

Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required:
01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - green/yellow, 07 - white, 08 - violet, 09 - brown, 10 - orange, 11 - pink, 12 - grey.

By adding the suffix (in place of 'c') for the conductor type required:
0 = Annealed Bare Copper (ABC), 1 = Annealed Tinned Copper (ATC)

	Part Number	Nominal Cross - Sectional Area (Sq. mm)	Nominal Thickness of Insulation (mm)	Mean Overall Diameter		Approx. Cable Weight (kg/km)
				Lower Limit (mm)	Upper Limit (mm)	
H05V-K	02020101xx1c	0.5	0.6	2.1	2.5	9
	02020102xx1c	0.75	0.6	2.2	2.7	12
	02020103xx1c	1.0	0.6	2.4	2.8	15
H07V-K	02020104xx1c	1.5	0.7	2.8	3.4	21
	02020105xx1c	2.5	0.8	3.4	4.1	33
	02020106xx1c	4	0.8	3.9	4.8	47
	02020107xx1c	6	0.8	4.4	5.3	66
	02020108xx1c	10	1.0	5.7	6.8	112
	02020109xx1c	16	1.0	6.7	8.1	170
	02020110xx1c	25	1.2	8.4	10.2	261
	02020111xx1c	35	1.2	9.7	11.7	358
	02020112xx1c	50	1.4	11.5	13.9	510
	02020113xx1c	70	1.4	13.2	16.0	703
	02020114xx1c	95	1.6	15.1	18.2	927
	02020115xx1c	120	1.6	16.7	20.2	1170
	02020116xx1c	150	1.8	18.6	22.5	1459
	02020117xx1c	185	2.0	20.6	24.9	1776
	02020118xx1c	240	2.2	23.5	28.4	2333

Cables up to 1 x 120 mm² certified under DIN EN 50525-2-31(VDE 0285-525-2-31)

H05V2-K & H07V2-K

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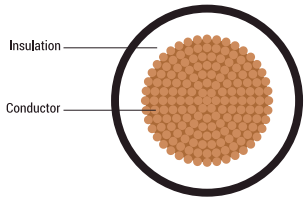

Application

Heat resistant cable designed for internal wiring in switch control, relay and instrumentation panels of power switchgear and for purposes such as internal connectors in rectifier equipment, motor starters and controllers.

Standard

BS/VDE EN 50525-2-31.

Technical Data

Voltage Rating : 0.5 to 1 mm² - 300 / 500V, 1.5 to 35 mm² - 450 / 750V
Temperature Range : -30°C to +90°C
Minimum Bending Radius :
Cable diameter ≤ 8 mm : 4 x outer diameter
Approx. diameter > 8 to 12 mm : 5 x outer diameter
Approx. diameter > 12 mm : 6 x outer diameter
Test Voltage : 2500V

Construction

Conductor Class 5 flexible plain / metal coated stranded according to EN 60228.
Insulation PVC (Polyvinyl Chloride) TI3 to BS EN 50363 - 3.

Properties

PVC self-extinguishing and flame retardant according to EN 60332-1-2.

Cable Design Parameters :

Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required: 01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - green/yellow, 07 - white, 08 - violet, 09 - brown, 10 - orange, 11 - pink, 12 - grey.
By adding the suffix (in place of 'c') for the conductor type required:
0 = Annealed Bare Copper (ABC), 1 = Annealed Tinned Copper (ATC).

	Part Number	Nominal Cross - Sectional Area (Sq. mm)	Nominal Thickness of Insulation (mm)	Mean Overall Diameter		Approx. Cable Weight (kg/km)
				Lower Limit (mm)	Upper Limit (mm)	
H05V2-K	02030101xx3c	0.5	0.6	2.1	2.5	8.5
	02030102xx3c	0.75	0.6	2.2	2.7	11.5
	02030103xx3c	1	0.6	2.4	2.8	13.5
H07V2-K	02030104xx3c	1.5	0.7	2.8	3.4	20
	02030105xx3c	2.5	0.8	3.4	4.1	32
	02030106xx3c	4	0.8	3.9	4.8	46
	02030107xx3c	6	0.8	4.4	5.3	65
	02030108xx3c	10	1.0	5.7	6.8	110
	02030109xx3c	16	1.0	6.7	8.1	167
	02030110xx3c	25	1.2	8.4	10.2	257
	02030111xx3c	35	1.2	9.7	11.7	358

H05Z-K & H07Z-K

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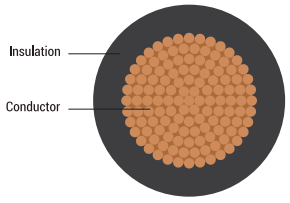

Application

Halogen-free single-core wires are used for installation in dry environments for wiring up lighting fixtures and units where valuable assets are to protected from further damage resulting from fire. These cables may be installed on, in and beneath plaster, as well as in closed installation ducts. The direct operating voltages is permitted up to 900 V against ground when they are used in rail-coaches. For the inner wiring of switch boards and distributors are to be used with an alternating nominal voltage up to 1000V or a direct voltage up to 750V against ground.

Standard

BS EN 50525-3-41.

Technical Data

Nominal Voltage : H05Z-K U_0 / U 300 / 500V, H07Z-K U_0 / U 450 / 750V

Harmonised Designation : 0.5 mm^2 to 1 mm^2 - H05Z-K, 1.5 mm^2 to 240 mm^2 - H07Z-K

Temperature Range : -15°C to +90°C

Minimum Bending Radius :

Cable diameter < 8 mm : 4 x outer diameter

Approx. diameter > 8 to 12 mm : 5 x outer diameter

Approx. diameter > 12 mm : 6 x outer diameter

Test Voltage : 2500V

Cable Construction

Conductor Class 5 flexible plain/metal coated stranded according to EN 60228.

Insulation Polyolefin cross linked EI5 to EN 50363-5.

Tests

Smoke density to acc. to EN 61034-2.

Halogen free acc. to EN 50525-1, EN 60754-1.

Corrosivity acc. to EN 60754-2 Ozone resistant according to EN 60811-2-1.

Self-extinguishing and flame retardant according to EN 60332-1-2.

LSOH = Low Smoke Zero Halogen-Free.

Cable Design Parameters :

Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required:
01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - green/yellow, 07 - white, 08 - violet, 09 - brown, 10 - orange, 11 - pink, 12 - grey.
By adding the suffix (in place of 'c') for the conductor type required:
0 = Annealed Bare Copper (ABC), 1= Annealed Tinned Copper (ATC).

	Part Number	Nominal Cross - Sectional Area (Sq. mm)	Nominal Thickness of Insulation (mm)	Mean Overall Diameter		Approx. Cable Weight (kg/km)
				Lower Limit (mm)	Upper Limit (mm)	
H05Z-K	02040101xx6c	0.5	0.6	1.9	2.4	9
	02040102xx6c	0.75	0.6	2.1	2.6	12
	02040103xx6c	1	0.6	2.2	2.8	15
H07Z-K	02040104xx6c	1.5	0.7	2.8	3.5	21
	02040105xx6c	2.5	0.8	3.4	4.3	33
	02040106xx6c	4	0.8	3.9	4.9	47
	02040107xx6c	6	0.8	4.4	5.5	66
	02040108xx6c	10	1.0	5.7	7.1	112
	02040109xx6c	16	1.0	6.7	8.4	169
	02040110xx6c	25	1.2	8.4	10.6	260
	02040111xx6c	35	1.2	9.7	12.1	358
	02040112xx6c	50	1.4	11.5	14.4	509
	02040113xx6c	70	1.4	13.2	16.61	701
	02040114xx6c	95	1.6	15.1	18.8	925
	02040115xx6c	120	1.6	16.7	20.9	1168
	02040116xx6c	150	1.8	18.6	23.3	1456
	02040117xx6c	185	2.0	20.6	25.8	1773
	02040118xx6c	240	2.2	23.5	29.4	2329

H05Z1-K & H07Z1-K

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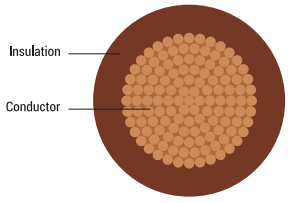

Application

Halogen-free single-core wires are used for installation in dry environments for wiring up lighting fixtures and units where valuable assets are to protected from further damage resulting from fire. These cables may be installed on, in and beneath plaster, as well as in closed installation ducts. For use in public places such as: hospitals, schools, museums, airports, bus terminals, shops in general, etc., as well as in computer rooms, offices, production plants, switchboard wiring, laboratories, etc.

Standard

BS EN 50525-3-31.

Technical Data

Nominal Voltage : H05Z1- K U_o / U 300 / 500V; H07Z1- K U_o / U 450 / 750V

Harmonised Designation : 0.5 mm^2 to 1 mm^2 - H05Z1- K, 1.5 mm^2 to 240 mm^2 - H07Z1- K

Temperature Range : -30°C to +70°C

Minimum Bending Radius

Cable diameter ≤ 8 mm: 4 x outer diameter

Approx. diameter > 8 to 12 mm: 5 x outer diameter

Approx. diameter > 12 mm: 6 x outer diameter

Test Voltage : 2500V

Cable Construction

Conductor Class 5 flexible plain / metal coated stranded according to EN 60228.

*Core insulation of thermoplastic halogen-free compound type TI7 to EN 50363-7.

Properties

Smoke density to acc. to EN 61034-2.

Halogen free acc. to EN 50525-1, EN 60754-1.

Corrosivity acc. to EN 60754-2.

Ozone resistant according to EN 60811-2-1 or HD 505.2.1.

Self-extinguishing and flame retardant according to EN 60332-1-2.

LSOH = Low Smoke Zero Halogen-Free.

Cable Design Parameters :

Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required: 01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - green/yellow, 07 - white, 08 - violet, 09 - brown, 10 - orange, 11 - pink, 12 - grey.
By adding the suffix (in place of 'c') for the conductor type required:
0 = Annealed Bare Copper (ABC), 1 = Annealed Tinned Copper (ATC).

	Part Number	Nominal Cross - Sectional Area (Sq. mm)	Nominal Thickness of Insulation (mm)	Mean Overall Diameter		Approx. Cable Weight (kg/km)
				Lower Limit (mm)	Upper Limit (mm)	
H05Z1-K	02050101xx7c	0.5	0.6	2.1	2.5	9.5
	02050102xx7c	0.75	0.6	2.2	2.7	12.5
	02050103xx7c	1	0.6	2.4	2.8	15.5
H07Z1-K	02050104xx7c	1.5	0.7	2.8	3.4	21.5
	02050105xx7c	2.5	0.8	3.4	4.1	33.5
	02050106xx7c	4	0.8	3.9	4.8	48
	02050107xx7c	6	0.8	4.4	5.3	67
	02050108xx7c	10	1.0	5.7	6.8	113
	02050109xx7c	16	1.0	6.7	8.1	171
	02050110xx7c	25	1.2	8.4	10.2	262
	02050111xx7c	35	1.2	9.7	11.7	360
	02050112xx7c	50	1.4	11.5	13.9	513
	02050113xx7c	70	1.4	13.2	16.0	705
	02050114xx7c	95	1.6	15.1	18.2	931
	02050115xx7c	120	1.6	16.7	20.2	1175
	02050116xx7c	150	1.8	18.6	22.5	1264
	02050117xx7c	185	2.0	20.6	24.9	1783
	02050118xx7c	240	2.2	23.5	28.4	2341

BS 6231 CK 90°C

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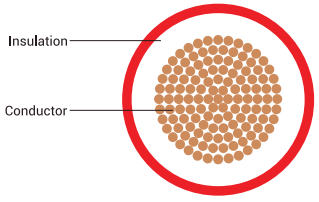

Application

High temperature, flame retardant cable designed for use in switch control, relay and instrumentation panels of power switchgear and for purposes such as internal connectors in rectifier equipment, motor starters and controllers.

Standard

BS6231 Type CK.

Technical Data

Voltage Rating : 600 / 1000V

Temperature Rating : 90°C (105°C for 15,000 hours)

Minimum Bending Radius :

Cable diameter ≤ 8 mm : 4 x outer diameter.

Approx. diameter > 8 to 12 mm: 5 x outer diameter.

Approx. diameter > 12 mm: 6 x outer diameter.

Test Voltage : 4000V

Construction

Conductor : Conductor Class 5 flexible plain/metal coated stranded according to EN 60228 cl. 5.

Insulation : PVC (Polyvinyl Chloride) TI3 to BS EN 50363-3.

Properties

PVC self-extinguishing and flame retardant according to EN 60332-1-2.

Cable Design Parameters :

Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required:
01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - green/yellow, 07 - white, 08 - violet, 09 - brown, 10 - orange, 11 - pink, 12 - grey.
By adding the suffix (in place of 'c') for the conductor type required:
0 = Annealed Bare Copper (ABC), 1 = Annealed Tinned Copper (ATC).

Part Number	Nominal Cross - Sectional Area (Sq. mm)	Nominal Thickness of Insulation (mm)	Mean Overall Diameter		Approx. Cable Weight (kg/km)
			Lower Limit (mm)	Upper Limit (mm)	
02060101xx3c	0.5	0.8	2.4	3.0	11
02060102xx3c	0.75	0.8	2.6	3.1	14
02060103xx3c	1	0.8	2.7	3.3	16
02060104xx3c	1.5	0.8	3.0	3.6	21
02060105xx3c	2.5	0.8	3.4	4.1	32
02060106xx3c	4	0.8	3.9	4.8	46
02060107xx3c	6	0.8	4.4	5.3	64

Part Number	Nominal Cross - Sectional Area (Sq. mm)	Nominal Thickness of Insulation (mm)	Mean Overall Diameter		Approx. Cable Weight (kg/km)
			Lower Limit (mm)	Upper Limit (mm)	
02060108xx3c	10	1.0	5.7	7.2	109
02060109xx3c	16	1.0	6.7	9.0	166
02060110xx3c	25	1.2	8.4	11.5	256
02060111xx3c	35	1.2	9.7	12.5	352
02060112xx3c	50	1.4	11.5	15.4	501
02060113xx3c	70	1.4	13.2	17.5	692
02060114xx3c	95	1.6	15.1	19.2	914
02060115xx3c	120	1.6	16.7	21.2	1155
02060116xx3c	150	1.8	18.6	23.9	1441
02060117xx3c	185	2.0	20.6	25.9	1754
02060118xx3c	240	2.2	23.5	28.9	2305

Note :
These cable are also catered with compliance to AWM, UL 1015 and CSA C22.2 No. 210-11 as Trirated cable.

CONTROL CABLES

CROSS SECTIONAL VIEW

RATNAFLEX MULTICORE (IS 694)

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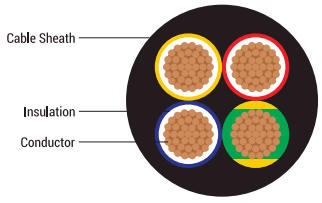

Application

PVC and FR PVC 70°C cables suitable for wiring in residential and commercial infrastructure.
HR PVC 85°C cables are suitable for wiring in residential and commercial infrastructure for a higher ambient temperature.
FR-LSH cables are suitable for wiring in public places like schools, hospitals, theatres, etc.

Technical Data

Approvals : IS 694 marked, FIA/TAC
Conductor : Electrolytic grade annealed copper Class 5 as per IS 8130
Standard Cable Colour : Black, grey & white
Voltage Rating : Up to and including 1100V
Packing : Standard packing of 100 mtr. in coil. Longer length available on request

Variants Available

Product Type/Legends	Specifications
RATNAFLEX-M	IS 694, IS 8130 Class 5, IS 5831 Type D for insulation & ST-3 & for sheathing
RATNAFLEX-M HR	IS 694, IS 8130 Class 5, IS 5831 Type C for insulation & ST-2 for sheathing
RATNAFLEX-M FR	IS 694, IS 8130 Class 5, IS 5831 Type D for insulation & ST-3 (FR) & for sheathing
RATNAFLEX-M HR FR	IS 694, IS 8130 Class 5, IS 5831 Type C for insulation & ST-2 (FR) for sheathing
RATNAFLEX-M FR-LSH	IS 694, IS 8130 Class 5, IS 5831 Type D for insulation & ST-3 (FR-LSH) for sheathing

Please complete the part numbers for these cables by adding the suffix (in place of 'xx') for the insulation colour required.	Kindly complete the part numbers for these cables by adding the suffix (in place of 'y') for the product type required.	Kindly complete the part numbers for these cables by adding the suffix (in place of 'z') for the sheath colour required.
06 - green-yellow earth core. We offer green/yellow earth core as our standard product. 00 - without green-yellow earth core (available on request).	1 - PVC 70°C, 2 - PVC FR 70°C, 3 - PVC HR 85°C, 4 - PVC HR 85°C + FR, 5 - PVC FR-LSH.	1 - black, 4 - grey, 5 - white.

Kindly add 'OU' after the part number, for the cables requred for outdoor application.

Cable Design Parameters :

Part Number	No. of Cores	Nominal Cross Sectional Area (Sq. mm)	Nominal Insulation Thickness (mm)	Max. D.C. Conductor Resistance at 20°C (Ω/km)	Nominal Thickness of Sheath	Maximum Overall Dimensions (mm)
03010101xxyz	1	0.5	0.60	39.0	0.9	4.3
03010102xxyz	2	0.5	0.60	39.0	0.9	6.9
03010103xxyz	3	0.5	0.60	39.0	0.9	7.3

Part Number	No. of Cores	Nominal Cross Sectional Area (Sq. mm)	Nominal Insulation Thickness (mm)	Max. D.C. Conductor Resistance at 20°C (Ω/km)	Nominal Thickness of Sheath	Maximum Overall Dimensions (mm)
03010104xxyz	4	0.5	0.60	39.0	0.9	8.0
03010105xxyz	5	0.5	0.60	39.0	0.9	8.7
03010106xxyz	1	0.75	0.60	26.0	0.9	4.5
03010107xxyz	2	0.75	0.60	26.0	0.9	7.3
03010108xxyz	3	0.75	0.60	26.0	0.9	7.7
03010109xxyz	4	0.75	0.60	26.0	0.9	8.4
03010110xxyz	5	0.75	0.60	26.0	0.9	9.2
03010111xxyz	1	1	0.60	19.5	0.9	4.7
03010112xxyz	2	1	0.60	19.5	0.9	7.6
03010113xxyz	3	1	0.60	19.5	0.9	8.1
03010114xxyz	4	1	0.60	19.5	0.9	8.8
03010115xxyz	5	1	0.60	19.5	1.0	9.6
03010116xxyz	1	1.5	0.60	13.3	0.9	5.4
03010117xxyz	2	1.5	0.60	13.3	0.9	8.9
03010118xxyz	3	1.5	0.60	13.3	0.9	9.4
03010119xxyz	4	1.5	0.60	13.3	1.0	10.4
03010120xxyz	5	1.5	0.60	13.3	1.0	11.4
03010121xxyz	1	2.5	0.70	7.98	1.0	6.2
03010122xxyz	2	2.5	0.70	7.98	1.0	10.3
03010123xxyz	3	2.5	0.70	7.98	1.0	10.9
03010124xxyz	4	2.5	0.70	7.98	1.0	12.0
03010125xxyz	5	2.5	0.70	7.98	1.0	13.2
03010126xxyz	1	4	0.80	4.95	1.0	6.8
03010127xxyz	2	4	0.80	4.95	1.0	11.6
03010128xxyz	3	4	0.80	4.95	1.0	12.4
03010129xxyz	4	4	0.80	4.95	1.0	13.6
03010130xxyz	5	4	0.80	4.95	1.1	15.3
03010131xxyz	1	6	0.80	3.30	1.1	7.5
03010132xxyz	2	6	0.80	3.30	1.1	13.0
03010133xxyz	3	6	0.80	3.30	1.2	13.8
03010134xxyz	4	6	0.80	3.30	1.2	15.5
03010135xxyz	1	10	1.00	1.91	1.3	9.4
03010136xxyz	2	10	1.00	1.91	1.3	16.5
03010137xxyz	3	10	1.00	1.91	1.4	17.7
03010138xxyz	4	10	1.00	1.91	1.4	19.5
03010139xxyz	1	16	1.00	1.21	1.4	10.9

Part Number	No. of Cores	Nominal Cross Sectional Area (Sq. mm)	Nominal Insulation Thickness (mm)	Max. D.C. Conductor Resistance at 20°C (Ω/km)	Nominal Thickness of Sheath	Maximum Overall Dimensions (mm)
03010140xxyz	2	16	1.00	1.21	1.4	19.4
03010141xxyz	3	16	1.00	1.21	1.4	20.6
03010142xxyz	4	16	1.00	1.21	1.4	23.0
03010143xxyz	1	25	1.20	0.780	1.4	13.6
03010144xxyz	2	25	1.20	0.780	1.4	23.8
03010145xxyz	3	25	1.20	0.780	1.5	25.6
03010146xxyz	4	25	1.20	0.780	1.6	28.5
03010147xxyz	1	35	1.20	0.554	1.6	15.5
03010148xxyz	2	35	1.20	0.554	1.6	27.2
03010149xxyz	3	35	1.20	0.554	1.6	29.3
03010150xxyz	4	35	1.20	0.554	1.7	32.7
03010151xxyz	1	50	1.40	0.386	2.0	18.1
03010152xxyz	2	50	1.40	0.386	2.0	32.0
03010153xxyz	3	50	1.40	0.386	2.0	34.6
03010154xxyz	4	50	1.40	0.386	2.0	38.6
03010155xxyz	1	70	1.40	0.272	2.2	20.8
03010156xxyz	2	70	1.40	0.272	2.2	36.8
03010157xxyz	3	70	1.40	0.272	2.2	39.6
03010158xxyz	4	70	1.40	0.272	2.2	44.3
03010159xxyz	1	95	1.60	0.206	2.4	23.6
03010160xxyz	2	95	1.60	0.206	2.4	41.8
03010161xxyz	3	95	1.60	0.206	2.4	47.0
03010162xxyz	4	95	1.60	0.206	2.4	50.2
03010163xxyz	1	120	1.60	0.161	2.5	26.0
03010164xxyz	2	120	1.60	0.161	2.5	46.2
03010165xxyz	3	120	1.60	0.161	2.5	51.0
03010166xxyz	4	120	1.60	0.161	2.5	55.7
03010167xxyz	3	150	1.80	0.129	2.6	54.8
03010168xxyz	4	150	1.80	0.129	2.6	62.1
03010169xxyz	3	185	2.00	0.106	2.8	61.2
03010170xxyz	4	185	2.00	0.106	2.8	68.5
03010171xxyz	3	240	2.20	0.0801	3.0	69.7
03010172xxyz	4	240	2.20	0.0801	3.0	77.9
03010173xxyz	3	300	2.40	0.0641	3.2	75.7
03010174xxyz	4	300	2.40	0.0641	3.2	84.4

CONTROL CABLE (IS 694)

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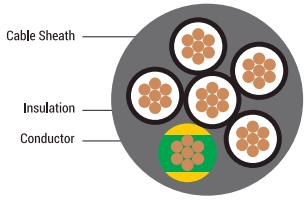

Application

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FR-LSH cables are suitable for wiring in public places like schools, hospitals, theatres, etc.

Technical Data

Approvals : IS 694 marked, FIA/TAC
Conductor : Electrolytic grade annealed copper Class-5 As per IS 8130, having uniform resistance properties
Core Colours: All black colour cores with continous white numbering, gn-yl core on outer most layer for earth if applicable
Standard Cable Colour : Black, grey & white
Voltage : Up to and including 1100V
Packing : Standard packing of 100 mtr. in coils. Longer length available on request

Variants Available

Product Type	Specifications
RATNAFLEX-M	IS 694, IS 8130 Class 5, IS 5831 Type D for insulation & ST-3 & for sheathing
RATNAFLEX-M HR	IS 694, IS 8130 Class 5, IS 5831 Type C for insulation & ST-2 for sheathing
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RATNAFLEX-M HR FR	IS 694, IS 8130 Class 5, IS 5831 Type C for insulation & ST-2 (FR) for sheathing
RATNAFLEX-M FR-LSH	IS 694, IS 8130 Class 5, IS 5831 Type D for insulation & ST-3 (FR-LSH) for sheathing

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Kindly add 'OU' after the part number, for the cables requred for outdoor application.

Cable Design Parameters :

Part Number	Nominal Cross Sectional Area (Sq. mm)	No. of Cores	Nominal Thickness of Insulation (mm)	Nominal Thickness of Sheath (mm)	Maximum Overall Dimensions (mm)
03020101xxyz	0.5	6	0.6	0.9	9.5
03020102xxyz	0.5	7	0.6	0.9	9.5
03020103xxyz	0.5	8	0.6	1.0	11.1

Part Number	Nominal Cross Sectional Area (Sq. mm)	No. of Cores	Nominal Thickness of Insulation (mm)	Nominal Thickness of Sheath (mm)	Maximum Overall Dimensions (mm)
03020104xxyz	0.5	9	0.6	1.0	11.8
03020105xxyz	0.5	10	0.6	1.0	12.0
03020106xxyz	0.5	11	0.6	1.0	12.0
03020107xxyz	0.5	12	0.6	1.0	12.4
03020108xxyz	0.5	13	0.6	1.0	13.1
03020109xxyz	0.5	14	0.6	1.1	13.1
03020110xxyz	0.5	15	0.6	1.1	13.5
03020111xxyz	0.5	16	0.6	1.1	13.8
03020112xxyz	0.5	17	0.6	1.1	14.6
03020113xxyz	0.5	18	0.6	1.1	14.6
03020114xxyz	0.5	19	0.6	1.1	14.6
03020115xxyz	0.5	20	0.6	1.2	15.4
03020116xxyz	0.5	21	0.6	1.2	15.4
03020117xxyz	0.5	22	0.6	1.2	16.3
03020118xxyz	0.5	23	0.6	1.2	16.3
03020119xxyz	0.5	24	0.6	1.2	17.1
03020120xxyz	0.5	25	0.6	1.2	17.1
03020121xxyz	0.75	6	0.6	1.0	10.0
03020122xxyz	0.75	7	0.6	1.0	10.0
03020123xxyz	0.75	8	0.6	1.0	11.8
03020124xxyz	0.75	9	0.6	1.1	12.4
03020125xxyz	0.75	10	0.6	1.1	12.7
03020126xxyz	0.75	11	0.6	1.1	12.7
03020127xxyz	0.75	12	0.6	1.1	13.1
03020128xxyz	0.75	13	0.6	1.1	13.8
03020129xxyz	0.75	14	0.6	1.1	13.8
03020130xxyz	0.75	15	0.6	1.2	14.3
03020131xxyz	0.75	16	0.6	1.2	14.6
03020132xxyz	0.75	17	0.6	1.2	15.4
03020133xxyz	0.75	18	0.6	1.2	15.4
03020134xxyz	0.75	19	0.6	1.2	15.4
03020135xxyz	0.75	20	0.6	1.3	16.3
03020136xxyz	0.75	21	0.6	1.3	16.3
03020137xxyz	0.75	22	0.6	1.3	17.3
03020138xxyz	0.75	23	0.6	1.3	17.3
03020139xxyz	0.75	24	0.6	1.3	18.2

Part Number	Nominal Cross Sectional Area (Sq. mm)	No. of Cores	Nominal Thickness of Insulation (mm)	Nominal Thickness of Sheath (mm)	Maximum Overall Dimensions (mm)
03020140xxyz	0.75	25	0.6	1.3	19.0
03020141xxyz	1.0	6	0.6	1.0	10.5
03020142xxyz	1.0	7	0.6	1.0	10.5
03020143xxyz	1.0	8	0.6	1.0	12.4
03020144xxyz	1.0	9	0.6	1.1	13.1
03020145xxyz	1.0	10	0.6	1.1	13.4
03020146xxyz	1.0	11	0.6	1.1	13.4
03020147xxyz	1.0	12	0.6	1.1	13.9
03020148xxyz	1.0	13	0.6	1.1	14.6
03020149xxyz	1.0	14	0.6	1.1	14.6
03020150xxyz	1.0	15	0.6	1.2	15.1
03020151xxyz	1.0	16	0.6	1.2	15.4
03020152xxyz	1.0	17	0.6	1.2	16.3
03020153xxyz	1.0	18	0.6	1.3	16.3
03020154xxyz	1.0	19	0.6	1.3	16.3
03020155xxyz	1.0	20	0.6	1.4	17.3
03020156xxyz	1.0	21	0.6	1.4	17.3
03020157xxyz	1.0	22	0.6	1.4	18.2
03020158xxyz	1.0	23	0.6	1.4	18.2
03020159xxyz	1.0	24	0.6	1.4	19.2
03020160xxyz	1.0	25	0.6	1.4	19.2
03020161xxyz	1.5	6	0.6	1.0	12.4
03020162xxyz	1.5	7	0.6	1.0	12.4
03020163xxyz	1.5	8	0.6	1.1	14.7
03020164xxyz	1.5	9	0.6	1.1	15.6
03020165xxyz	1.5	10	0.6	1.1	16.0
03020166xxyz	1.5	11	0.6	1.1	16.0
03020167xxyz	1.5	12	0.6	1.1	16.5
03020168xxyz	1.5	13	0.6	1.2	17.4
03020169xxyz	1.5	14	0.6	1.2	17.4
03020170xxyz	1.5	15	0.6	1.2	18.1
03020171xxyz	1.5	16	0.6	1.2	18.4
03020172xxyz	1.5	17	0.6	1.3	19.5
03020173xxyz	1.5	18	0.6	1.3	19.5
03020174xxyz	1.5	19	0.6	1.3	19.5
03020175xxyz	1.5	20	0.6	1.4	20.7

Part Number	Nominal Cross Sectional Area (Sq. mm)	No. of Cores	Nominal Thickness of Insulation (mm)	Nominal Thickness of Sheath (mm)	Maximum Overall Dimensions (mm)
03020176xxyz	1.5	21	0.6	1.4	20.7
03020177xxyz	1.5	22	0.6	1.4	21.9
03020178xxyz	1.5	23	0.6	1.4	21.9
03020179xxyz	1.5	24	0.6	1.4	23.0
03020180xxyz	1.5	25	0.6	1.4	23.0
03020181xxyz	2.5	6	0.7	1.1	14.5
03020182xxyz	2.5	7	0.7	1.1	15.5
03020183xxyz	2.5	8	0.7	1.2	17.3
03020184xxyz	2.5	9	0.7	1.3	18.3
03020185xxyz	2.5	10	0.7	1.3	18.7
03020186xxyz	2.5	11	0.7	1.3	18.7
03020187xxyz	2.5	12	0.7	1.3	19.4
03020188xxyz	2.5	13	0.7	1.3	20.5
03020189xxyz	2.5	14	0.7	1.3	20.5
03020190xxyz	2.5	15	0.7	1.4	21.3
03020191xxyz	2.5	16	0.7	1.4	21.7
03020192xxyz	2.5	17	0.7	1.4	23.0
03020193xxyz	2.5	18	0.7	1.4	23.3
03020194xxyz	2.5	19	0.7	1.4	23.8
03020195xxyz	2.5	20	0.7	1.4	24.4
03020196xxyz	2.5	21	0.7	1.5	25.0
03020197xxyz	2.5	22	0.7	1.5	25.8
03020198xxyz	2.5	23	0.7	1.5	26.3
03020199xxyz	2.5	24	0.7	1.5	27.2
03020200xxyz	2.5	25	0.7	1.5	27.9

JB-500

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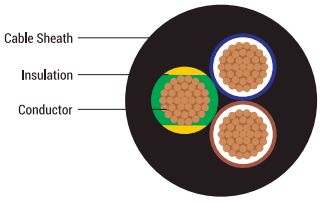

Application

For use in connections of household appliances, plant and machinery, wiring purposes and for manufacturing cords.

Standard

BS EN 50525-2-11, DIN EN 50525-2-11; VDE 0285-525-2-11, EN 50525-2-11.

Technical Data

Nominal Voltage : 300/500V (H05VV-F & H05VVH2-F); 300/300V (H03VV-F & H03VVH2-F)
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C. Fixed Installation : -30°C to +70°C
Minimum Bending Radius : Fixed installation 5 x cable ø
Test Voltage : 4000V
Breakdown Voltage : Min. 8000V

Cable Construction

Bare copper, fine wire conductors, as per EN 60228 Cl.5.
PVC core insulation TI2, to EN 50363-3.
Harmonised core colour to HD 308.
Cores stranded in layers with optimal lay-length.
PVC outer sheath TM2, to EN 50363-4.1.

H05VV-F is also available in oil resistant variant as H05VV5-F.
The outer sheath provided here is of special PVC, TM5 to BS EN 50363-4.1.

Properties

PVC self-extinguishing and flame retardant according to EN 60332-1-2.
Please complete the part numbers for these cables by adding the suffix (in place of 'z') for the sheath colour required,
1 - black (RAL 9005), 2 - grey (RAL 7001), 3 - white (RAL 9010). For Oil Resistant sheath kindly add 'OR' after the part nos.

Cable Design Parameters :

	Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)
H03VV-F	03030101001z	2 x 0.5	5.1
	03030102001z	2 x 0.75	5.5
	03030103001z	3 x 0.5	5.3
	03030104001z	3 G 0.5	5.3
	03030105001z	3 x 0.75	5.7
	03030106001z	3 G 0.75	5.7
	03030107001z	4 x 0.5	5.8

	Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)
	03030108001z	4 G 0.5	5.8
	03030109001z	4 x 0.75	6.3
	03030110001z	4 G 0.75	6.3
H03VVH2-F	03030111001z	2 x 0.5	5.1 X 3.2
	03030112001z	2 x 0.75	5.5 X 3.4
H05VVH2-F	03030113001z	2 x 0.75	6.3 X 4.0
	03030114001z	2 x 1	6.6 X 4.1
	03030115001z	2 x 1.5	7.7 x 4.7
H05VV-F	03030116001z	2 x 0.75	6.2
	03030117001z	2 x 1	6.4
	03030118001z	2 x 1.5	7.5
	03030119001z	2 x 2.5	9.1
	03030120001z	2 x 4	10.3
	03030121001z	3 G 0.75	6.6
	03030122001z	3 x 0.75	6.6
	03030123001z	3 G 1	6.9
	03030124001z	3 x 1	6.9
	03030125001z	3 G 1.5	8.1
	03030126001z	3 x 1.5	8.1
	03030127001z	3 G 2.5	9.7
	03030128001z	3 x 2.5	9.7
	03030129001z	3 G 4	11.2
	03030130001z	3 x 4	11.2
	03030131001z	4 G 0.75	7.1
	03030132001z	4 x 0.75	7.1
	03030133001z	4 G 1	7.5
	03030134001z	4 x 1	7.5
	03030135001z	4 G 1.5	9.1
	03030136001z	4 x 1.5	9.1
	03030137001z	4 G 2.5	10.7
	03030138001z	4 x 2.5	10.7
	03030139001z	4 G 4	12.2
	03030140001z	4 x 4	12.2
	03030141001z	5 G 0.75	8.0
	03030142001z	5 x 0.75	8.0
	03030143001z	5 G 1	8.4
	03030144001z	5 x 1	8.4

	Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)
	03030145001z	5 G 1.5	10.2
	03030146001z	5 x 1.5	10.2
	03030147001z	5 G 2.5	12.0
	03030148001z	5 x 2.5	12.0
	03030149001z	5 G 4	13.8
	03030150001z	5 x 4	13.8

Note :
*G = With Green/yellow Earth Core.
X = Without Green/yellow Earth Core.

Range Details:

Cable Type	Size Range		
	BASEC	DEMKO	VDE
H03VVH2-F	-	0.50...0.75 mm² x 2C	0.50...0.75 mm² x 2C
H05VVH2-F	0.75 . . . . 1.5 mm² x 2C	-	0.75...1 mm² x 2C
H05VV-F	0.75...4 mm² x 2...5C	0.75...4 mm² x 2...5C	0.75...4 mm² x 2...3C

JB 750

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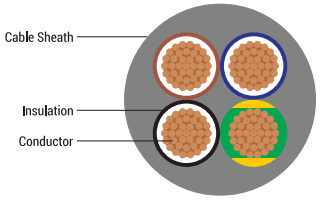

Application

For use in connections of household appliances and wiring purposes. It is also used in manufacture of cords.

Standard

Adapted to DIN VDE 0281, 0293, 0295 with insulation thickness for 1.0 kV type.

Technical Data

Nominal Voltage : U_o/U 450/750V
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C
Fixed Installation : -30°C to +70°C
Minimum Bending Radius : Flexing 7.5 x cable ø. Fixed Installation 4 x cable ø
Test Voltage : 4000V
Breakdown Voltage : Min. 8000V

Cable Construction

Bare copper, fine wire conductors, as per EN 60228 Cl.5.
Special PVC core insulation TI2, to EN 50363-3.
Harmonised core colour to HD 308.
For cores above 5 cores black core with continuous white numbering according to DIN VDE 0293.
Green-Yellow earth core in outer layer (3 cores and above).
Cores stranded in layers with optimal lay-length.
Special PVC outer sheath TM2, to EN 50363-4.1.
Colour Grey (RAL 7001).

Properties

PVC self-extinguishing and flame retardant according to EN 60332-1-2.

Cable Design Parameters :

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)
030400201205	2 x 2.5	9.1
030400311205	3G 2.5	9.9
030400301205	3 x 2.5	9.9
030400411205	4G 2.5	11.1
030400401205	4 x 2.5	11.1
030400511205	5G 2.5	12.4
030400501205	5 x 2.5	12.4
030400611205	6G 2.5	13.3

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)
030400711205	7G 2.5	14.6
030400200004	2 x 4	10.4
030400310004	3G 4	11.2
030400410004	4G 4	12.5
030400510004	5G 4	13.9
030400710004	7G 4	16.8
030401110004	11G 4	22.3
030400310006	3G 6	12.6
030400410006	4G 6	14.0
030400510006	5G 6	15.5
030400710006	7G 6	19.0
030400310010	3G 10	16.0
030400410010	4G 10	18.0
030400510010	5G 10	20.0
030400710010	7G 10	23.1
030400310016	3G 16	18.5
030400410016	4G 16	20.8
030400510016	5G 16	23.0
030400710016	7G 16	31.0
030400310025	3G 25	23.3
030400410025	4G 25	26.0
030400510025	5G 25	29.0
030400310035	3G 35	26.6
030400410035	4G 35	29.7
030400510035	5G 35	33.1
030400310050	3G 50	30.2
030400410050	4G 50	33.9
030400510050	5G 50	37.6
030400310070	3G 70	37.1
030400410070	4G 70	41.6
030400510070	5G 70	46.3
030400310095	3G 95	40.1
030400410095	4G 95	44.8
030400510095	5G 95	50.2
030400310120	3G 120	45.5
030400410120	4G 120	50.8
030400410150	4G 150	57.0
030400410185	4G 185	65.8

Note: *G = With Green/yellow earth core. X = Without Green/yellow earth core.

H03 / H05V2V2H2-F & H03 / H05V2V2-F PVC 90°C

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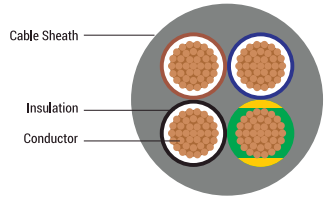

Application
For use in connections of household appliances and internal wiring purposes with high ambient temperatures and humid spaces

Standard
BS EN 50525-2-11.

Technical Data
Nominal Voltage : 300 / 500V (H05V2V2H2-F / H05V2V2-F); 300 / 300V (H03V2V2H2-F / H03V2V2-F)
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range :
Flexing -5°C to +90°C
Fixed Installation -30°C to +90°C
Fixed Installation 5 x cable ø
Test Voltage : 4000V
Breakdown Voltage : Min. 8000V

Cable Construction
Bare copper, fine wire conductors, as per EN 60228 Cl.5.
PVC core insulation TI3, to EN 50363-3.
Harmonised core colour to HD 308.
Cores stranded in layers with optimal lay-length.
PVC outer sheath TM3, to EN 50363-4.1

Properties
PVC self-extinguishing and flame retardant according to EN 60332-1-2.

Cable Design Parameters :
Please complete the part numbers for these cables by adding the suffix (in place of 'z') for the sheath colour required,
1 - black (RAL 9005), 2 - grey (RAL 7001), 3 - white (RAL 9010).

	Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)
H03V2V2-F	03050101001z	2 x 0.5	5.1
	03050102001z	2 x 0.75	5.5
	03050103001z	3 x 0.5	5.3
	03050104001z	3 G 0.5	5.3
	03050105001z	3 x 0.75	5.7
	03050106001z	3 G 0.75	5.7
	03050107001z	4 x 0.5	5.8
	03050108001z	4 G 0.5	5.8
	03050109001z	4 x 0.75	6.3
	03050110001z	4 G 0.75	6.3
	03050111001z	2 x 0.5	5.1 X 3.2
	03050112001z	2 x 0.75	5.5 X 3.4

	Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)
H05V2V2H2-F	03050113001z	2 x 0.75	6.3 X 4.0
	03050114001z	2 x 1.0	6.6 X 4.1
	03050115001z	2 x 1.5	7.7 x 4.7
H05V2V2-F	03050116001z	2 x 0.75	6.2
	03050117001z	2 x 1.0	6.5
	03050118001z	2 x 1.5	7.5
	03050119001z	2 x 2.5	9.1
	03050120001z	2 x 4	10.3
	03050121001z	3 x 0.75	6.6
	03050122001z	3 G 0.75	6.6
	03050123001z	3 x 1.0	6.9
	03050124001z	3 G 1.0	6.9
	03050125001z	3 x 1.5	8.1
	03050126001z	3 G 1.5	8.1
	03050127001z	3 x 2.5	9.9
	03050128001z	3 G 2.5	9.9
	03050129001z	3 x 4	11.2
	03050130001z	3 G 4	11.2
	03050131001z	4 x 0.75	7.2
	03050132001z	4 G 0.75	7.2
	03050133001z	4 x 1.0	7.7
	03050134001z	4 G 1.0	7.7
	03050135001z	4 x 1.5	9.0
	03050136001z	4 G 1.5	9.0
	03050137001z	4 x 2.5	10.8
	03050138001z	4 G 2.5	10.8
	03050139001z	4 x 4	12.2
	03050140001z	4 G 4	12.2
	03050141001z	5 x 0.75	8.0
	03050142001z	5 G 0.75	8.0
	03050143001z	5 x 1.0	8.3
	03050144001z	5 G 1.0	8.3
	03050145001z	5 x 1.5	10.0
	03050146001z	5 G 1.5	10.0
	03050147001z	5 x 2.5	12.0
	03050148001z	5 G 2.5	12.0
	03050149001z	5 x 4	13.7
	03050150001z	5 G 4	13.7

Note: *G = With Green/yellow earth core. X = Without Green/yellow earth core.

JB-YCY

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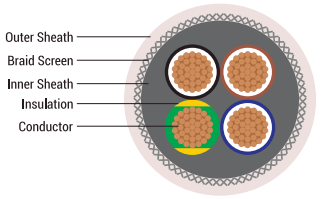

Application

For use as a data and control cable in machinery, computer systems etc. as well as a signal cable for electronics. The high level of screening ensures a high degree of interference protection. The dense screening assures disturbance-free transmission of all signals and impulses. The PVC-inner sheaths of these cables raise the mechanical strength. The applied clear transparent PVC outer sheath accentuates the optical view of the tinned copper braid. These cables are suitable for flexible use for medium mechanical stresses with free movements.

Standard

Adapted to DIN/BS EN 50525-2-51.

Technical Data

Nominal Voltage : U_o / U 300 / 500V up to 1.5 mm². U_o / U 450 / 750V at 4.0 mm² and above
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius: Flexing 20 x cable ø. Fixed installation 6 x cable ø
Test Voltage : 4000V
Breakdown Voltage : Min. 8000V

Cable Construction

Bare copper, fine wire conductors, bunch stranded EN 60228 Cl. 5.
Core insulation of TI2, EN 50363-3.
Cores colour coded as per JB/OB colour code.
Green/yellow earth core in outer layer (3 cores and above).
Cores stranded in layers with optimal lay-length.
Special PVC inner jacket.
Tinned copper, braided screen, approx 85% coverage.
Transparent special PVC outer sheath.
Core identification code : As per VDE 0293-302/HD 308 S2

Properties

PVC self-extinguishing and flame retardant according to EN 60332-1-2.
Mutual capacitance according to different cross-sections 0.5mm² to 2.5mm² core/core approx. 150 nF/km core/screen approx. 270 nF/km
EMC : Electromagnetic compatibility
To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

Cable Design Parameters :

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
030601010216	2 x 0.5	7.9	37	124
030601020116	3G 0.5	8.3	44	139
030601030116	4G 0.5	8.8	53	168
030601040116	5G 0.5	9.6	60	205
030601050116	7G 0.5	10.2	76	243
030601060216	2 x 0.75	8.3	44	140
030601070116	3G 0.75	8.7	54	160
030601080116	4G 0.75	9.5	66	198
030601090116	5G 0.75	10.1	78	239
030601100116	7G 0.75	10.8	99	286
030601110216	2 x 1	8.6	53	156
030601120116	3G 1	9.2	65	182
030601130116	4G 1	9.8	79	221
030601140116	5G 1	10.7	94	272
030601150116	7G 1	11.5	122	328
030601160216	2 x 1.5	9.7	66	198
030601170116	3G 1.5	10.2	87	231
030601180116	4G 1.5	11.1	106	286
030601190116	5G 1.5	12.4	129	368
030601200116	7G 1.5	13.2	165	442
030601210216	2 x 2.5	11.2	95	271
030601220116	3G 2.5	11.8	126	318
030601230116	4G 2.5	13.1	159	412
030601240116	5G 2.5	14.3	193	511
030601250116	7G 2.5	15.4	257	624
30601260116	4G 4	13.4	264	565
30601270116	5G 4	14.8	317	697
30601280116	4G 6	15.6	365	732
30601290116	5G 6	17.0	442	909
30601300116	3G 10	17.8	453	889
30601310116	4G 10	19.7	580	1125
30601320116	5G 10	21.6	711	1408
30601330116	3G 16	20.7	707	1274
30601340116	4G 16	22.6	917	1618
30601350116	5G 16	25.2	1128	2047

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
30601330116	3G 25	26.3	1064	1965
30601340116	4G 25	28.9	1386	2512
30601350116	5G 25	31.8	1708	3153
30601360116	3G 35	29.4	1453	2554
30601370116	4G 35	32.2	1900	3259
30601380116	5G 35	36.0	2347	4133
30601390116	3G 50	35.1	2048	3653
30601380116	4G 50	38.8	2688	4701
30601390116	4G 70	43.7	3732	6229
30601400116	4G 95	50.4	4915	8123
30601410116	4G 120	56.8	6198	10118
30601420116	4G 150	62.2	7600	12511
30601430116	4G 185	67.8	9334	15306

Note :

*G = With Green/yellow Earth Core.
X = Without Green/yellow Earth Core.

JB-YSY

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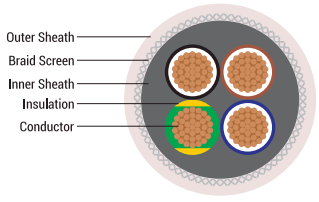

Application

JB-YSY cables are used as measuring and control cables in tool machinery, plant installation, power stations and in data equipment. The steel braid ensures best possible protection against mechanical damage. The galvanized coating on the steel wire braiding not only helps protect against corrosion, but also notably improves the soldering properties.

Standard

Adapted to DIN/BS EN 50525-2-51.

Technical Data

Nominal Voltage : U_0 / U 300 / 500V up to 1.5 mm². U_0/U 450/750V at 4.0 mm² and above
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C; Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing 20 x cable ø. Fixed installation 6 x cable ø
Test Voltage : 4000V
Breakdown Voltage : Min. 8000V

Cable Construction

Bare copper, fine wire conductors, to bunch stranded EN 60228 Cl. 5.
Core insulation of TI2, EN 50363-3.
Cores colour coded as per JB/OB colour code.
Green/Yellow earth core in outer layer (3 cores and above).
Cores stranded in layers with optimal lay-length.
Special PVC inner jacket.
Galvanised steel wire screening.
Special PVC outer jacket.
Colour transparent (also available in grey).
Core identification code : As per VDE 0293-302/HD 308 S2

Properties

*PVC self-extinguishing and flame retardant according to EN 60332-1-2.

Cable Design Parameters :

Please complete the part numbers for these cables by adding the suffix (in place of 'z') for the sheath colour required,
1 - black (RAL 9005), 2 - grey (RAL 7001), 3 - white (RAL 9010).

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
03070101021z	2 x 0.75	9.0	18	120
03070102011z	3G 0.75	9.4	27	138
03070103011z	4G 0.75	10.2	36	176
03070104011z	5G 0.75	10.9	44	204
03070105011z	7G 0.75	11.7	62	250
03070106011z	12G 0.75	14.4	107	398

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
03070107021z	2 x 1	9.3	24	129
03070108011z	3G 1	9.9	36	166
03070109011z	4G 1	10.6	47	196
03070110011z	5G 1	11.5	59	234
03070111011z	7G 1	12.3	83	290
03070112011z	25G 1	19.5	296	857
03070113021z	2 x 1.5	10.4	35	171
03070114011z	3G 1.5	10.9	52	205
03070115011z	4G 1.5	11.9	69	252
03070116011z	5G 1.5	13.1	87	307
03070117011z	7G 1.5	14.1	122	381
03070118011z	12G 1.5	17.3	208	618
03070119011z	18G 1.5	19.7	313	873
03070120011z	25G 1.5	22.6	434	1183
03070121011z	32G 1.5	24.7	556	1480
03070122021z	2 x 2.5	11.9	58	238
03070123011z	3G 2.5	12.5	87	285
03070124011z	4G 2.5	13.8	116	371
03070125011z	5G 2.5	15.0	145	442
03070126011z	7G 2.5	16.3	203	558
03070127021z	2 x 4	12.9	92	304
03070128011z	4G 4	15.0	184	477
03070129011z	5G 4	16.4	230	574
03070130011z	3G 6	15.2	207	492
03070131011z	4G 6	16.6	276	638
03070132011z	5G 6	18.1	345	770
03070133011z	4G 10	21.3	470	1042
03070134011z	5G 10	23.3	588	1270
03070135011z	4G 16	24.1	783	1479
03070136011z	5G 16	26.6	979	1858
03070137011z	4G 25	29.4	1218	2258
03070138011z	5G 25	32.6	1522	2831
03070139011z	4G 35	32.4	1715	2955
03070140011z	5G 35	36.0	2144	3711
03070141011z	4G 50	38.8	2461	4256

Note :

*G = With Green/yellow Earth Core.
X = Without Green/yellow Earth Core.

JB-BLACK 0.6/1 kV

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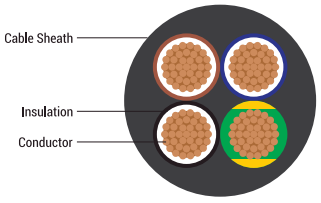

Application

For flexible use with medium and free movement without tensile stress or forced movements in dry, moist and wet rooms as well as outside (fixed installation). These cables are used for manufacturing machines, machine tools. Also used in conveyor belts and product lines.

Standard

Adapted to DIN VDE 0262, DIN VDE 0281 Part 13 with increased insulation thickness for 1 kV.

Technical Data

Nominal Voltage : U_0 / U 0.6 / 1 kV
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Occasional flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing 15 x cable ø. Fixed installation 4 x cable ø
Test Voltage : 4000V
Breakdown Voltage : Min. 8000V

Cable Construction

Bare copper, fine wire conductors, to EN 60228 Cl.5.
Core insulation of PVC, TI2 to EN 50363-3.
Core colour coded as per JB/OB colour coded.
Cores stranded in layers with optimal lay-length.
Jacket of TM2, EN 50363-4-1, color black RAL 9005.
Core identification code : As per VDE 0293-302/HD 308 S2

Properties

PVC self-extinguishing and flame retardant according to EN 60332-1-2.
UV & weather resistant according to ASTM G 154.
Ozone resistant according to EN 50396.

Cable Design Parameters :

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
030800200001	2 x 1	8.6	19	101
030800310001	3G 1	9.0	28	117
030800410001	4G 1	9.6	38	138
030800510001	5G 1	10.4	47	164
030800201105	2 x 1.5	9.6	28	129
030800311105	3G 1.5	10.1	42	152
030800411105	4G 1.5	10.8	56	181
030800511105	5G 1.5	11.7	69	216
030800201205	2 x 2.5	10.8	46	173

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
030800311205	3G 2.5	11.3	69	205
030800411205	4G 2.5	12.2	93	249
030800511205	5G 2.5	13.3	116	301
030800410004	4G 4	13.8	147	344
030800410006	4G 6	15.1	221	450
030800410010	4G 10	18.7	376	723
030800410016	4G 16	21.3	626	1058
030800410025	4G 25	26.2	974	1623
030800410035	4G 35	29.1	1372	2150
030800410050	4G 50	35.6	1968	3144
030800410070	4G 70	40.5	2747	4245
030800410095	4G 95	46.6	3663	5639
030800410120	4G 120	53.3	4639	7242

Note :

*G = With Green/yellow Earth Core.
X = Without Green/yellow Earth Core.

JZ-500

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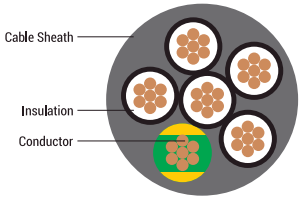

Application

These cables are used for flexible use for medium mechanical stresses with free movement without tensile stress of forced movements in dry, moist and wet rooms but not suitable for outdoor installation. Fit for measuring and control cables in tool machines, conveyor belts production lines in machinery production, in air-conditioning and steel production.

Standard

Requirement adapted to DIN VDE 0245, 0281, 0293, 0295.

Technical Data

Nominal Voltage : U_o / U 300 / 500V
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing 7.5 x cable ø. Fixed installation 4 x cable ø
Test Voltage : 4000V
Breakdown Voltage : Min. 8000V

Cable Construction

Bare copper, fine wire conductors, to EN 60228 Cl.5.
Core insulation of special PVC TI2 EN 50363-3.
Black core with continuous white numbering according to DIN VDE 0293.
Green/yellow earth core in the outer layer (3 cores and above).
Cores stranded in layers with optimal lay-length.
Outer sheath of special PVC, TM2 to EN 50363-4.1.
Colour grey (RAL 7001).

Properties

PVC self-extinguishing and flame retardant according to EN 60332-1-2.
JZ-500 is also available in oil resistant variant as JZ-500 OR. The outer sheath provided here is of special PVC, TM5 to EN 50363 -4.1.
For Oil Resistant sheath kindly add 'OR' after the part nos.

Cable Design Parameters :

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
030900211050	2 x 0.5	4.8	9.5	35
030900311050	3G 0.5	5.1	14.0	42
030900301050	3 x 0.5	5.1	14.2	42
030900411050	4G 0.5	5.6	19.0	51
030900401050	4 x 0.5	5.6	19.0	51
030900511050	5G 0.5	6.0	24.0	61
030900501050	5 x 0.5	6.0	24.0	61

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
030900611050	6G 0.5	6.6	28.5	74
030900711050	7G 0.5	6.7	33.5	80
030900701050	7 x 0.5	6.7	33.5	80
030900811050	8G 0.5	7.9	38.0	103
030900801050	8 x 0.5	7.9	38.0	103
030901011050	10G 0.5	8.8	47.5	130
030901211050	12G 0.5	8.9	57.0	140
030901201050	12 x 0.5	8.9	57.0	140
030901411050	14G 0.5	10.0	66.5	170
030901611050	16G 0.5	10.2	76.0	184
030901811050	18G 0.5	10.5	85.5	200
030902011050	20G 0.5	11.8	95.0	239
030902111050	21G 0.5	11.9	100.0	246
030902511050	25G 0.5	12.9	118.5	293
030903011050	30G 0.5	13.5	142.5	329
030903211050	32G 0.5	14.0	152.0	354
030903411050	34G 0.5	14.3	161.5	373
030904011050	40G 0.5	15.3	190.0	429
030904211050	42G 0.5	16.6	199.0	486
030905011050	50G 0.5	18.2	237.0	581
030905211050	52G 0.5	18.2	246.5	589
030906111050	61G 0.5	19.4	289.5	680
030906511050	65G 0.5	20.4	308.5	740
030908011050	80G 0.5	22.4	379.5	898
030910011050	100G 0.5	25.0	474.0	1119
030900201075	2 x 0.75	5.3	14.5	44
030900311075	3G 0.75	5.6	21.5	54
030900301075	3 x 0.75	5.6	21.5	54
030900411075	4G 0.75	6.1	28.5	66
030900401075	4 x 0.75	6.1	28.5	66
030900511075	5G 0.75	6.9	36.0	85
030900501075	5 x 0.75	6.9	36.0	85
030900611075	6G 0.75	7.4	43.0	100
030900601075	6 x 0.75	7.4	43.0	100
030900711075	7G 0.75	7.6	50.0	108
030900701075	7 x 0.75	7.6	50.0	108

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
030900811075	8G 0.75	9.4	57.0	150
030900801075	8 x 0.75	9.4	57.0	150
030900911075	9G 0.75	9.8	64.0	164
030901011075	10G 0.75	10.0	71.0	175
030901211075	12G 0.75	10.1	85.5	190
030901201075	12 x 0.75	10.1	85.5	190
030901411075	14G 0.75	10.7	100.0	215
030901511075	15G 0.75	11.3	107.0	238
030901811075	18G 0.75	11.9	128.0	273
030901911075	19G 0.75	12.3	135.0	288
030902011075	20G 0.75	13.0	142.5	315
030902111075	21G 0.75	13.2	149.5	327
030902511075	25G 0.75	14.6	178.0	396
030902711075	27G 0.75	14.8	192.0	416
030903211075	32G 0.75	15.7	228.0	477
030903411075	34G 0.75	15.7	242.0	491
030903711075	37G 0.75	16.1	263.0	521
030904011075	40G 0.75	16.6	284.5	559
030904111075	41G 0.75	17.4	292.0	599
030904211075	42G 0.75	17.7	299.0	613
030905011075	50G 0.75	19.2	356.0	725
030906111075	61G 0.75	20.3	434.0	846
030906511075	65G 0.75	21.4	462.5	922
030908011075	80G 0.75	22.9	569.0	1087
030910011075	100G 0.75	27.8	711.5	1494
030900200001	2 x 1	5.6	19.0	52
030900310001	3G 1	6.0	28.5	66
030900300001	3 x 1	6.0	28.5	66
030900410001	4G 1	6.8	38.0	86
030900400001	4 x 1	6.8	38.0	86
030900510001	5G 1	7.5	47.5	104
030900500001	5 x 1	7.5	47.5	104
030900610001	6G 1	8.3	57.0	128
030900710001	7G 1	8.9	66.5	148
030900700001	7 x 1	8.9	66.5	148
030900810001	8G 1	9.7	76.0	174

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
030900910001	9G 1	10.5	85.5	199
030901010001	10G 1	10.8	95.0	215
030901000001	10 x 1	10.8	95.0	215
030901210001	12G 1	11.1	114.0	239
030901200001	12 x 1	11.1	114.0	239
030901410001	14G 1	11.7	133.0	272
030901610001	16G 1	12.5	152.0	308
030901810001	18G 1	13.2	171.0	346
030901800001	18 x 1	13.2	171.0	346
030901910001	19G 1	13.5	180.5	363
030902010001	20G 1	14.0	190.0	388
030902000001	20 x 1	14.0	190.0	388
030902110001	21G 1	14.2	199.5	403
030902410001	24G 1	15.7	228.0	477
030902510001	25G 1	16.2	237.5	504
030902500001	25 x 1	16.2	237.5	504
030902610001	26G 1	16.2	246.5	512
030902710001	27G 1	16.4	256.0	528
030903010001	30G 1	16.6	284.5	561
030903410001	34G 1	18.1	322.5	652
030903610001	36G 1	18.1	341.5	668
030903710001	37G 1	19.1	351.0	719
030904010001	40G 1	19.6	379.5	767
030904000001	40 x 1	19.6	379.5	767
030904110001	41G 1	19.7	389.0	776
030904210001	42G 1	19.7	398.5	785
030905010001	50G 1	21.8	474.5	952
030905610001	56G 1	22.3	531.0	1027
030906110001	61G 1	23.1	578.5	1107
030906510001	65G 1	23.7	616.5	1175
030908010001	80G 1	26.4	759.0	1451
030910010001	100G 1	29.4	948.5	1803
030900201105	2 x 1.5	6.3	29.0	69
030900311105	3G 1.5	6.7	43.5	87
030900301105	3 x 1.5	6.7	43.5	87
030900411105	4G 1.5	7.3	58.0	109

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
030900401105	4 x 1.5	7.3	58.0	109
030900511105	5G 1.5	8.2	72.5	137
030900501105	5 x 1.5	8.2	72.5	137
030900611105	6G 1.5	8.9	86.7	162
030900711105	7G 1.5	9	101.0	176
030900701105	7 x 1.5	9	101.0	176
030900811105	8G 1.5	10.6	116.0	224
030900801105	8 x 1.5	10.6	116.0	224
030900911105	9G 1.5	11.5	130.0	259
030901011105	10G 1.5	11.7	145.0	276
030901111105	11G 1.5	12.0	159.0	299
030901211105	12G 1.5	12.1	173.5	311
030901201105	12 x 1.5	12.1	173.5	311
030901411105	14G 1.5	12.9	202.5	357
030901611105	16G 1.5	13.6	202.5	403
030901811105	18G 1.5	14.5	260.0	455
030902111105	21G 1.5	15.7	303.5	533
030902511105	25G 1.5	17.2	361.0	637
030902611105	26G 1.5	17.3	361.0	654
030903211105	32G 1.5	19.1	462.5	799
030903411105	34G 1.5	19.8	491.0	854
030904111105	41G 1.5	21.0	592.5	994
030905011105	50G 1.5	23.7	722.5	1240
030906111105	61G 1.5	25.2	881.5	1461
030906511105	65G 1.5	26.0	939.0	1550
030900201205	2 x 2.5	7.6	40.1	100
030900311205	3G 2.5	8.3	60.2	129
030900411205	4G 2.5	9.1	80.3	162
030900511205	5G 2.5	10.2	100.3	203
030900711205	7G 2.5	11.2	140.4	261
030901211205	12G 2.5	14.8	240.8	452
030901411205	14G 2.5	15.7	280.9	517
030901811205	18G 2.5	17.5	361.1	653
030902511205	25G 2.5	20.8	501.6	915
030903411205	34G 2.5	24.4	682.1	1253
030905011205	50G 2.5	29.4	1003.2	1831

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
030900310004	3G 4	9.9	96.0	192
030900410004	4G 4	10.8	128.0	241
030900510004	5G 4	12.1	159.5	301
030900710004	7G 4	13.3	223.5	390
030901110004	11G 4	17.6	351.0	649
030901210004	12G 4	18.1	383.0	696
030900310006	3G 6	11.7	144.0	277
030900410006	4G 6	13.0	191.5	354
030900510006	5G 6	14.5	239.5	441
030900710006	7G 6	16.0	335.0	574
030900310010	3G 10	14.2	244.5	436
030900410010	4G 10	15.5	326.0	548
030900510010	5G 10	17.1	407.5	676
030900710010	7G 10	19.0	570.5	892
030900410016	4G 16	18.8	543.0	860
030900510016	5G 16	21.0	678.5	1074
030900710016	7G 16	23.4	950.0	1424
030900410025	4G 25	23.4	844.5	1335
030900510025	5G 25	25.8	1055.5	1648
030900710025	7G 25	28.7	1478.0	2184
030900410035	4G 35	26.4	1189.0	1795
030900510035	5G 35	29.6	1486.5	2251

Note:

*G = Green/yellow earth core.

X = Without Green/yellow earth core (OZ).

*Important for assemblers: We supply any "desired length" as stranded cores without outer sheath, core insulation colour acc. to RAL 9005 with number combination acc. to customers requirement.

JZ-YCY

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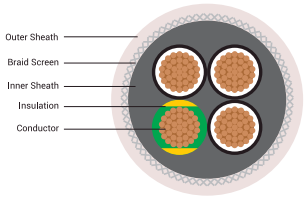

Application

For use as a data and control cable in machinery, computer systems etc. as well as a signal cable for electronics. The high level of screening ensures a high degree of interference protection. The screening density assures disturbance-free transmission of all signals and impulses.

Standard

Requirements adapted to DIN VDE 0245, 0281 Part 13.

Technical Data

Nominal Voltage : U_0 /U 300 / 500V

Insulation Resistance : Min. 20 GΩ x cm

Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C

Minimum Bending Radius : Flexing 10 x cable ø. Fixed installation 5 x cable ø

Test Voltage : 4000V

Breakdown Voltage : Min. 8000V

Cable Construction

Bare copper, fine wire conductors, to EN 60228 Cl.5.

Core insulation of PVC TI2 EN 50363-3.

Black Core with continuous white numbering to DIN VDE 0293.

Green/Yellow earth core in outer layer (3 cores and above).

Cores stranded in layers with optimal lay-length.

Special PVC inner jacket.

Tinned copper, braided screen, approx 85% coverage.

Transparent special PVC outer sheath.

Properties

The clear transparent PVC outer sheath accentuates the optical view of the tinned copper braid.

PVC self-extinguishing and flame retardant according to EN 60332-1-2.

JZ-YCY grey (RAL 7001) is available in oil resistant variant as JZ-YCY OR. The outer sheath provided here is of special PVC TM5 to BS EN 50363 -4.1.

For oil resistant sheath kindly add 'OR' after the part nos.

Mutual capacitance according to different cross-sections 0.5mm² to 2.5mm² core/core approx. 150 nF/km core/screen approx.

270 nF/km.

EMC : Electromaganetic compatibillity to optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

Cable Design Parameters :

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031000201050	2 x 0.5	7	21.6	68.2
031000311050	3G 0.5	7.3	27.6	78.0
031000301050	3 X 0.5	7.3	27.6	78.0
031000411050	4G 0.5	7.9	32.5	91.7
031000401050	4 X 0.5	7.9	32.5	91.7
031000511050	5G 0.5	8.4	38.7	105.7
031000501050	5 X 0.5	8.4	38.7	105.7
031000711050	7G 0.5	8.9	47.7	122.6
031000701050	7 X 0.5	8.9	47.7	122.6
031001211050	12G 0.5	11.3	75.2	198.2
031001201050	12 X 0.5	11.3	75.2	198.2
031001811050	18G 0.5	13.3	102.2	273.5
031002511050	25G 0.5	15.2	153.7	371.7
031003011050	30G 0.5	16.1	178.7	423.1
031004011050	40G 0.5	18.2	228.0	542.5
031000201075	2 x 0.75	7.4	27.5	79
031000311075	3G 0.75	7.9	36.2	95
031000301075	3 X 0.75	7.9	36.2	95
031000411075	4G 0.75	8.4	42.4	109
031000401075	4 X 0.75	8.4	42.4	109
031000511075	5G 0.75	8.9	48.7	123
031000501075	5 X 0.75	8.9	48.7	123
031000711075	7G 0.75	9.7	64.0	152
031000701075	7 X 0.75	9.7	64.0	152
031001211075	12G 0.75	12.3	101.1	246
031001201075	12 X 0.75	12.3	101.1	246
031001811075	18G 0.75	14.5	160.6	355
031001801075	18 X 0.0.75	14.5	160.6	355
031002511075	25G 0.75	16.6	214.1	472
031003411075	34G 0.75	18.9	279.0	615
031004001075	40 X 0.75	20.5	337.4	728
031004111075	41G 0.75	20.6	345.2	740
031000200001	2 x 1	7.9	32.0	91
031000310001	3G 1	8.2	42.2	105
031000300001	3 x 1	8.2	42.2	105
031000410001	4G 1	8.7	50.7	121

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031000400001	4 x 1	8.7	50.7	121
031000510001	5G 1	9.5	61.3	146
031000710001	7G 1	10.2	79.5	176
031001210001	12G 1	13.3	146.2	308
031001610001	16G 1	14.6	185.5	380
031001810001	18G 1	15.5	202.5	423
031002510001	25G 1	17.5	271.5	554
031003410001	34G 1	20.2	354.0	734
031004110001	41G 1	22.0	437.1	882
031005010001	50G 1	23.8	521.9	1044
031000201105	2 x 1.5	8.5	42.1	110
031000311105	3G 1.5	8.9	56.0	130
031000301105	3 x 1.5	8.9	56.0	130
031000411105	4G 1.5	9.6	69.1	155
031000401105	4 x 1.5	9.6	69.1	155
031000511105	5G 1.5	10.3	99.2	193
031000501105	5 x 1.5	10.3	99.2	193
031000711105	7G 1.5	11.3	124.6	237
031000701105	7 x 1.5	11.3	124.6	237
031001211105	12G 1.5	14.8	198.6	397
031001811105	18G 1.5	17.2	279.6	548
031002511105	25G 1.5	20.1	375.2	746
031003411105	34G 1.5	22.8	497.4	977
031004111105	41G 1.5	24.7	611.9	1168
031005011105	50G 1.5	27.1	730.1	1402
031000201205	2 x 2.5	9.9	61.2	154
031000311205	3G 2.5	10.3	99.1	193
031000411205	4G 2.5	11.3	121.1	234
031000511205	5G 2.5	12.6	146.4	289
031000711205	7G 1.5	13.9	192.3	364
031001211205	12G 2.5	17.6	304.4	585
031000200004	2 x 4	11.4	104.4	222
031000410004	4G 4	13.4	173.2	333
031000510004	5G 4	14.7	212.4	405
031000200006	2 x 6	13.6	141.6	312
031000410006	4G 6	15.8	250.2	474

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031000510006	5G 6	17.3	303.7	573
031000200010	2 x 10	16.4	220.4	468
031000310010	3G 10	17.4	308.7	579
031000410010	4G 10	19.0	395.2	715
031000510010	5G 10	21.2	482.7	884
031000710010	7G 10	23.2	653.4	1124
031000200016	2 x 16	18.6	367.3	672
031000410016	4G 16	22.2	657.4	1075
031000510016	5G 16	26.7	807.2	1433
031000410025	4G 25	28.7	984.1	1703
031000510025	5G 25	31.6	1210.5	2083
031000410035	4G 35	32	1352.0	2235
031000510035	5G 35	35.5	1670.1	2760

Note :

'G = With Green/yellow Earth Core.
X = Without Green/yellow Earth Core.(OZ).

JZ-YSY

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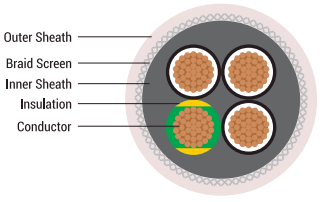

Application

These cables are used as measuring and control cables in tool machinery, plant installation, power stations and in data equipment. The braided screen offers best possible protection against mechanical damage. The galvanised coating on the steel wire braiding not only helps protect against corrosion, but also notably improves the soldering performance.

Standard

Adapted to DIN VDE 0245, 0281, 0293, 0295.

Technical Data

Nominal Voltage : U_0 / U 300 / 500V
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing 20 x cable ø. Fixed installation 6 x cable ø
Test Voltage : 4000V
Breakdown Voltage : Min. 8000V

Cable Construction

Bare copper, fine wire conductors, to EN 60228 Cl.5.
Core insulation of PVC TI2, EN 50363-3.
Black Core with continuous white numbering to DIN VDE 0293.
Green/Yellow earth core in outer layer (3 cores and above).
Cores stranded in layers with optimal lay-length.
Special PVC inner jacket.
Galvanized steel wire screening.
Special PVC outer jacket.
Colour transparent (also available in grey).

Properties

The clear transparent PVC outer sheath accentuates the optical view of the tinned copper braid.
PVC self-extinguishing and flame retardant according to EN 60332-1-2
JZ-YSY Grey(RAL 7001) is also available in oil resistant variant as JZ-YSY OR. The outer sheath provided here is of special PVC TM5 to BS EN 50363 -4.1.

Cable Design Parameters :

Please complete the part numbers for these cables by adding the suffix (in place of 'z') for the sheath colour required : 1-black (RAL 9005), 2 - grey (RAL 7001), 3 - white (RAL 9010).

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
03110101021z	2 x 0.5	7.8	8.4	91
03110102011z	3G 0.5	8.1	12.6	100
03110103011z	4G 0.5	8.5	16.8	111
03110104011z	5G 0.5	9.2	21.0	139

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
03110105011z	7G 0.5	9.7	29.4	155
03110106011z	10G 0.5	11.6	42.0	223
03110107011z	12G 0.5	11.9	50.4	237
03110108011z	14G 0.5	12.5	58.8	261
03110109011z	18G 0.5	13.9	75.5	319
03110110011z	21G 0.5	14.9	88.1	360
03110111011z	25G 0.5	15.6	104.9	397
03110112011z	30G 0.5	16.5	125.9	445
03110113011z	40G 0.5	18.8	167.9	588
03110114011z	61G 0.5	21.9	256.0	801
03110115021z	2 x 0.75	8.2	12.6	99
03110116011z	3G 0.75	8.5	18.9	111
03110117011z	4G 0.75	9.2	25.2	142
03110118011z	5G 0.75	9.7	31.5	157
03110119011z	7G 0.75	10.3	44.1	179
03110120011z	9G 0.75	12.4	56.7	254
03110121011z	12G 0.75	12.9	75.5	282
03110122011z	15G 0.75	14.1	94.4	335
03110123011z	18G 0.75	14.9	113.3	389
03110124011z	25G 0.75	17.0	157.4	512
03110125011z	34G 0.75	19.3	214.0	650
03110126011z	50G 0.75	22.8	314.8	905
03110127021z	2 x 1	8.5	16.8	109
03110128011z	3G 1	8.8	25.2	135
03110129011z	4G 1	9.5	33.6	155
03110130011z	5G 1	10.1	42.0	173
03110131011z	7G 1	11.0	58.8	207
03110132011z	8G 1	12.5	67.1	265
03110133011z	9G 1	13.2	75.5	291
03110134011z	12G 1	13.9	100.7	333
03110135011z	14G 1	14.4	117.5	362
03110136011z	18G 1	15.9	151.1	452
03110137011z	20G 1	16.8	167.9	500
03110138011z	25G 1	18.1	209.8	597
03110139011z	34G 1	20.5	285.4	761
03110140011z	41G 1	22.2	344.1	896
03110141011z	50G 1	24.2	419.7	1070
03110142011z	65G 1	27.2	545.6	1355

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
03110143021z	2 x 1.5	9.3	24.1	143
03110144011z	3G 1.5	9.7	36.1	161
03110145011z	4G 1.5	10.2	48.2	181
03110146011z	5G 1.5	11.1	60.2	213
03110147011z	7G 1.5	11.9	84.3	265
03110148011z	8G 1.5	14.0	96.3	330
03110149011z	12G 1.5	15.4	144.5	430
03110150011z	14G 1.5	15.9	168.5	469
03110151011z	18G 1.5	17.6	216.7	574
03110152011z	25G 1.5	20.3	300.9	771
03110153011z	32G 1.5	22.1	385.2	926
03110154011z	41G 1.5	24.9	493.6	1174
03110155011z	50G 1.5	27.1	601.9	1403
03110156011z	3G 2.5	11.1	60.2	211
03110157011z	4G 2.5	12.1	80.3	267
03110158011z	5G 2.5	13.2	100.3	314
03110159011z	7G 2.5	14.3	140.4	392
03110160011z	12G 2.5	18.2	240.8	626
03110161011z	18G 2.5	21.4	361.1	875
03110162011z	25G 2.5	24.4	501.6	1159
03110163011z	3G 4	12.7	95.7	295
03110164011z	4G 4	14.0	127.6	358
03110165011z	5G 4	15.1	159.5	420
03110166011z	7G 4	16.4	223.3	530
03110167011z	4G 6	16.2	191.4	498
03110168011z	5G 6	17.7	239.3	593
03110169011z	7G 6	19.2	335.0	749
03110170011z	4G 10	19.4	325.9	745
03110171011z	5G 10	21.5	407.3	908
03110172011z	7G 10	23.4	570.3	1147
03110173011z	4G 16	22.4	542.8	1086
03110174011z	5G 16	24.6	678.5	1324
03110175011z	4G 25	28.9	844.4	1704
03110176011z	5G 25	31.8	1055.5	2093
03110177011z	4G 35	32.2	1189.0	2247

Note :
'G = With Green/yellow Earth Core.
X = Without Green/yellow Earth Core. (OB).

JZ-CY

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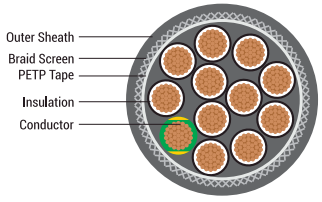

Application

For use as a data cable in control circuits, in tool-making and machine industries as well as a signal cable in computer systems and electronics. The more usual PVC inner sheath has been removed in the cable, thus reducing the total diameter of the cables considerably and thereby reducing the bending radius, total weight etc. The high covering percentage of the copper screening offers interference-free signal transfer etc. The dense screening assures disturbance-free transmission of all signals and impulses.

Standard

Adapted to DIN VDE 0245, 0281 Part 13.

Technical Data

Nominal Voltage : U_o / U 300 / 500V
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing 10 x cable ø. Fixed installation5 x cable ø
Test Voltage : Core/core 4000V. Core/screen 2000V
Breakdown Voltage : Min. 8000V

Cable Construction

Bare copper, fine wire conductors, to EN 60228 Cl.5.
Core insulation of special PVC TI2, EN 50363-3.
Black Core with continuous white numbering to DIN VDE 0293.
Green/yellow earth core in outer layer (3 cores and above).
Cores stranded in layers with optimal lay-length.
Tinned copper, braided screen, approx 85% coverage.
Outer Sheath of Special PVC, TM2 to DIN/BS EN 50363-4.1.
Colour grey (RAL 7001).

Properties

PVC self-extinguishing and flame retardant according to EN 60332-1-2.
JZ-CY grey (RAL 7001) is available in oil resistant variant as JZ-CY OR. The outer sheath provided here is of special PVC TM5 to BS EN 50363 -4.1.
For Oil Resistant sheath kindly add 'OR' after the part nos.
Mutual capacitance according to different cross-sections 0.5mm² to 2.5mm² core/core approx. 150 nF/km core/screen approx. 270 nF/km.
Coupling resistance : Max. 250 Ω/km.
EMC : Electromagnetic compatibility : To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

Cable Design Parameters :

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031200201050	2 x 0.5	5.8	18.8	44.9
031200311050	3G 0.5	6.1	24.7	55.0

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031200301050	3 x 0.5	6.1	24.7	55.0
031200411050	4G 0.5	6.5	29.2	63.4
031200401050	4 x 0.5	6.5	29.2	63.4
031200511050	5G 0.5	7	34.6	73.9
031200501050	5 x 0.5	7	34.6	73.9
031200711050	7G 0.5	7.5	45.1	90.6
031200701050	7 x 0.5	7.5	45.1	90.6
031201211050	12G 0.5	9.9	71.4	149.1
031201201050	12 x 0.5	9.9	71.4	149.1
031201811050	18G 0.5	11.5	100.1	205.6
031201801050	18 x 0.5	11.5	100.1	205.6
031202511050	25G 0.5	13.4	134.1	271.7
031202501050	25 x 0.5	13.4	134.1	271.7
031200201075	2 x 0.75	6.2	25.0	53.2
031200311075	3G 0.75	6.5	31.3	64.0
031200301075	3 x 0.75	6.5	31.3	64.0
031200411075	4G 0.75	7.0	39.0	77.0
031200401075	4 x 0.75	7.0	39.0	77.0
031200511075	5G 0.75	7.7	47.2	93.4
031200501075	5 x 0.75	7.7	47.2	93.4
031200711075	7G 0.75	8.3	62.0	116.4
031200701075	7 x 0.75	8.3	62.0	116.4
031201211075	12G 0.75	10.9	98.9	189.7
031201811075	18G 0.75	12.7	141.0	265.0
031202511075	25G 0.75	14.8	210.6	363.6
031202501075	25 x 0.75	14.8	210.6	363.6
031200200001	2 x 1	6.5	29.5	59.7
031200310001	3G 1	6.8	38.9	73.6
031200300001	3 x 1	6.8	38.9	73.6
031200410001	4G 1	7.3	49.1	89.0
031200400001	4 x 1	7.3	49.1	89.0
031200510001	5G 1	8.1	58.4	108.1
031200500001	5 x 1	8.1	58.4	108.1
031200710001	7G 1	8.8	77.2	136.8
031200700001	7 x 1	8.8	77.2	136.8
031201210001	12G 1	11.5	125.5	223.3

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031201810001	18G 1	13.9	180.0	328.9
031202510001	25G 1	15.9	266.1	439.8
031200201105	2 x 1.5	7.1	39.4	73.9
031200311105	3G 1.5	7.5	51.7	92.7
031200301105	3 x 1.5	7.5	51.7	92.7
031200411105	4G 1.5	8.2	66.2	115.9
031200401105	4 x 1.5	8.2	66.2	115.9
031200511105	5G 1.5	8.9	80.9	138.7
031200501105	5 x 1.5	8.9	80.9	138.7
031200711105	7G 1.5	9.9	108.0	182.3
031200701105	7 x 1.5	9.9	108.0	182.3
031201211105	12G 1.5	13.0	175.1	298.0
031201811105	18G 1.5	15.6	276.0	450.8
031202511105	25G 1.5	17.9	377.6	596.4
031203411105	34G 1.5	20.8	488.3	787.3
031200311205	3G 2.5	8.9	80.9	136.6
031200411205	4G 2.5	9.9	102.9	174.0
031200511205	5G 2.5	11.0	125.0	213.7
031200711205	7G 1.5	11.9	168.4	272.9
031201211205	12G 2.5	16.0	301.0	477.1
031201811205	18G 2.5	19.0	433.3	688.1
031202511205	25G 2.5	22.2	588.0	924.6
031200410004	4G 4	11.6	153.4	250.4
031200710004	7G 4	14.4	256.1	412.1
031200410006	4G 6	14.2	222.7	370.5
031200710006	7G 6	17.0	396.3	600.0
031200410010	4G 10	17.2	384.1	589.2
031200510010	5G 10	19.5	475.8	748.2
031200410016	4G 16	20.2	616.3	877.4
031200510016	5G 16	22.6	760.4	1093.1
031200410025	4G 25	25.1	937.4	1347.6
031200510025	5G 25	28.0	1160.0	1676.0
031200410035	4G 35	28.0	1300.4	1769.2

Note :
'G = With Green/yellow Earth Core.
X = Without Green/yellow Earth Core.

JZ-BLACK 0.6/1 kV

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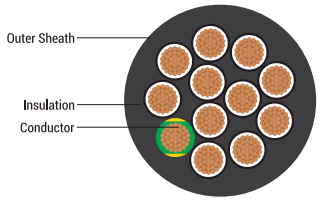

Application

Wiring cable in tool machinery, conveyor belts and production lines, plant engineering, Industrial machinery, air conditioning, steel production plants and rolling mills.

Standard

Adapted to DIN VDE 0262, DIN VDE 0281 Part 13 with increased insulation thickness for 1 KV.

Technical Data

Nominal Voltage : U_o / U 0.6 / 1kV
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing 15 x cable ø. Fixed installation 4 x cable ø
Test Voltage : 4000V
Breakdown Voltage : Min. 8000V

Cable Construction

Bare copper, fine wire conductors, as per EN60228 Cl. 5.
Special PVC core insulation TI2, to EN 50363-3.
Black Core with continuous white numbering to DIN VDE 0293.
Green/yellow earth core in outer layer (3 cores and above).
Cores stranded in layers with optimal lay-length.
Special PVC outer sheath TM2, to EN 50363-4-1.
Colour Black (RAL 9005).

Properties

PVC self-extinguishing and flame retardant according to IEC 60332-1-2.
UV & weather resistant according to ASTM G 154.
Ozone resistant according to EN 50396.

Cable Design Parameters :

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031300201075	2 x 0.75	8.3	13.0	90
031300311075	3G 0.75	8.7	19.6	103
031300301075	3 x 0.75	8.7	19.6	103
031300411075	4G 0.75	9.2	26.1	119
031300511075	5G 0.75	9.9	32.6	139
031300711075	7G 0.75	10.7	45.6	169
031301211075	12G 0.75	13.4	78.2	271
031301811075	18G 0.75	15.6	117.3	377

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031304111075	41G 0.75	23.2	267.3	840
031300200001	2 x 1	8.6	17.4	99.0
031300310001	3G 1	9.0	26.1	114.4
031300300001	3 x 1	9.0	26.1	114.4
031300410001	4G 1	9.6	34.8	134.5
031300400001	4 x 1	9.6	34.8	134.5
031300510001	5G 1	10.4	43.5	160.1
031300500001	5 x 1	10.4	43.5	160.1
031300710001	7G 1	11.4	60.8	199.8
031301210001	12G 1	14.5	104.3	328.2
031301810001	18G 1	16.5	156.5	443.2
031302510001	25G 1	19.7	217.3	626.9
031303410001	34G 1	22.5	295.5	828.0
031304110001	41G 1	24.4	356.4	981.3
031300201105	2 x 1.5	9.6	25.5	127
031300311105	3G 1.5	10.1	38.2	149
031300301105	3 x 1.5	10.1	38.2	149
031300411105	4G 1.5	10.8	50.9	176
031300511105	5G 1.5	11.7	63.7	210
031300711105	7G 1.5	12.6	89.1	257
031301211105	12G 1.5	16.1	152.8	425
031301411105	14G 1.5	17.0	178.3	481
031301811105	18G 1.5	18.8	229.2	598
031302511105	25G 1.5	21.7	318.3	807
031303411105	34G 1.5	24.9	407.4	1053
031305011105	50G 1.5	29.8	636.6	1553
031300211205	2G 2.5	10.8	42.4	169
031300311205	3G 2.5	11.3	63.7	200
031300411205	4G 2.5	12.2	84.9	242
031300511205	5G 2.5	13.3	106.1	292
031300711205	7G 2.5	14.4	148.5	363
031301211205	12G 2.5	18.7	254.6	615
031301411205	14G 2.5	19.8	297.1	699
031301811205	18G 2.5	22.0	382.0	876
031302511205	25G 2.5	25.8	530.5	1210
031300410004	4G 4	13.8	135.0	332

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031300510004	5G 4	15.1	168.7	403
031300710004	7G 4	16.4	236.2	507
031300410006	4G 6	15.1	202.4	432
031300510006	5G 6	16.8	253.1	537
031300710006	7G 6	18.2	354.3	679
031300410010	4G 10	18.7	344.7	692
031300510010	5G 10	20.7	430.8	855
031300410016	4G 16	21.3	574.1	1006
031300510016	5G 16	23.6	717.7	1245
031300710016	7G 16	26.2	1004.7	1637
031300410025	4G 25	26.2	893.1	1542
031300510025	5G 25	29.0	1116.3	1908
031300410035	4G 35	29.1	1257.6	2035
031300510035	5G 35	32.5	1572.0	2541
031300410050	4G 50	35.6	1804.4	2980
031300410070	4G 70	40.7	2549.7	4058
031300410095	4G 95	46.8	3399.7	5389
031300410120	4G 120	53.5	4306.2	6926

Note :
'G = With Green/yellow Earth Core.
X = Without Green/yellow Earth Core.

JZ-YCY BLACK 0.6/1 kV

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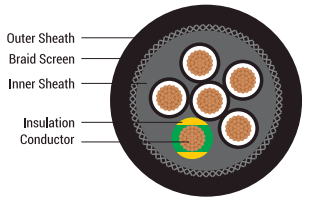

Application

Wiring cable in tool machinery, conveyor belts and production lines, plant engineering, Industrial machinery, air conditioning, steel production plants and rolling mills. The dense coverage of copper screening offers EMI compliance.

Standard

Adapted to DIN VDE 0262/12.95 and 0281 Part 13 with insulation thickness for 1 kV type.

Technical Data

Nominal Voltage : U_0 / U 0.6 / 1kV
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing 20 x cable ø. Fixed installation 6 x cable ø
Test Voltage : 4000V
Breakdown Voltage : Min. 8000V

Cable Construction

Bare copper, fine wire conductors, as per DIN VDE 0295 Cl. 5.
Special PVC core insulation TI2, to EN 50363-3.
Black Core with continuous white numbering to DIN VDE 0293.
Green/yellow earth core in outer layer (3 cores and above).
Cores stranded in layers with optimal lay-length.
PVC inner jacket, Black color.
Tinned copper, braided screen, approx 85% coverage.
Special PVC outer sheath TM2, to EN 50363-4.1.
Colour Black (RAL 9005).

Properties

PVC self-extinguishing and flame retardant according to IEC 60332-1-2.
UV & weather resistant according to ASTM G 154.
Ozone resistant according to EN 50396.

Cable Design Parameters :

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031400201075	2 x 0.75	10.5	34.4	150
031400311075	3G 0.75	10.9	40.9	165
031400301075	3 x 0.75	10.9	40.9	165
031400411075	4G 0.75	11.4	49.8	185
031400401075	4 x 0.75	11.4	49.8	185
031400511075	5G 0.75	12.1	60.0	212
031400501075	5 x 0.75	12.1	60.0	212

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031400711075	7G 0.75	12.9	74.9	247
031400701075	7 x 0.75	12.9	74.9	247
031401211075	12G 0.75	15.8	138.7	389
031401201075	12 x 0.75	15.8	138.7	389
031401811075	18G 0.75	18.0	185.5	510
031402511075	25G 0.75	20.7	243.4	676
031400200001	2 x 1	10.8	38.9	161
031400310001	3G 1	11.2	50.4	181
031400300001	3 x 1	11.2	50.4	181
031400410001	4G 1	11.8	59.4	203
031400400001	4 x 1	11.8	59.4	203
031400510001	5G 1	12.6	70.8	235
031400710001	7G 1	13.3	107.3	281
031401210001	12G 1	16.4	165.7	433
031401810001	18G 1	18.7	233.9	581
031402510001	25G 1	21.6	304.6	771
031400201105	2 x 1.5	11.8	50.3	196
031400311105	3G 1.5	12.3	62.4	219
031400301105	3 x 1.5	12.3	62.4	219
031400411105	4G 1.5	13.0	77.9	252
031400401105	4 x 1.5	13.0	77.9	252
031400511105	5G 1.5	13.9	93.4	293
031400711105	7G 1.5	15.0	143.3	366
031401211105	12G 1.5	18.7	222.3	572
031401811105	18G 1.5	21.8	309.0	785
031402511105	25G 1.5	25.1	411.1	1045
031400311205	3G 2.5	13.5	91.9	279
031400411205	4G 2.5	14.6	137.7	349
031400511205	5G 2.5	15.7	158.8	403
031400711205	7G 2.5	17.0	209.0	493
031401211205	12G 2.5	21.7	333.7	802
031400410004	4G 4	16.2	190.0	448
031400510004	5G 4	17.7	231.5	540
031400710004	7G 4	19	304.9	656
031400410006	4G 6	17.7	268.5	571
031400510006	5G 6	19.2	321.2	677

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031400710006	7G 6	21.2	435.0	864
031400410010	4G 10	21.7	425.5	880
031400510010	5G 10	23.0	521.9	1027
031400410016	4G 16	24.3	666.5	1219
031400510016	5G 16	26.7	820.1	1487
031400410025	4G 25	29.8	1007.0	1844
031400510025	5G 25	31.6	1242.1	2167
031400410035	4G 35	32.7	1384.4	2368
031400410050	4G 50	39.6	2032.2	3471
031400410070	4G 70	44.5	2824.2	4602
031400410095	4G 95	51.0	3706.2	6050
031400410120	4G 120	58.1	4650.3	7727

Note :
'G = With Green/yellow Earth Core.
X = Without Green/yellow Earth Core.

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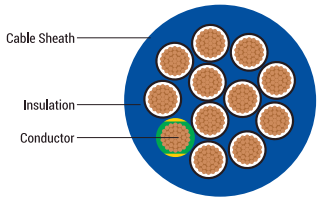

Application
Installation of intrinsically safe circuits.

Standard
Adapted to DIN EN 60079-14: VDE 0165 Part1.

Technical Data
Nominal Voltage : U_o / U 300 / 500V. < 50V AC < 75V DC
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing 15 x cable ø. Fixed installation 4 x cable ø
Test Voltage : 3000V

Cable Construction
Bare copper, fine wire conductors, to EN 60228 Cl.5.
Core insulation of special PVC TI2 EN 50363-3.
Black core with continuous white numbering according to DIN VDE 0293.
Green/Yellow earth core in outer layer (3 cores and above).
Cores stranded in layers with optimal lay-length.
Outer sheath of special PVC, TM2 to DIN/BS EN 50363-4.1.
Colour Blue (RAL 5015).

Properties
PVC self-extinguishing and flame retardant according to EN 60332-1-2.
Mutual capacitance: Core to core approx. 120 nF/km.

Cable Design Parameters :

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031500201075	2 x 0.75	5.3	14.5	44
031500301075	3 x 0.75	5.6	21.5	54
031500401075	4 x 0.75	6.1	28.5	66
031500501075	5 x 0.75	6.9	36.0	85
031501211075	12G 0.75	10.1	85.5	190
031501811075	18G 0.75	11.9	128.0	273
031502511075	25G 0.75	14.6	178.0	396
031500200001	2 x 1	5.6	19.0	52
031500300001	3 x 1	6.0	28.5	66
031500400001	4 x 1	6.8	38.0	86

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031500500001	5 x 1	7.5	47.5	104
031500700001	7 x 1	8.9	66.5	148
031501200001	12 x 1	11.1	114.0	239
031501800001	18 x 1	13.2	171.0	346
031500201105	2 x 1.5	6.3	29.0	69
031500301105	3 x 1.5	6.7	43.5	87
031500401105	4 x 1.5	7.3	58.0	109
031500501105	5 x 1.5	8.2	72.5	137
031500311105	3 G 1.5	6.7	43.5	87
031500411105	4 G 1.5	7.3	58.0	109
031500511105	5 G 1.5	8.2	72.5	137
031501811105	18G 1.5	14.5	260.0	455
031502511105	25G 1.5	17.2	361.0	637

Note :

'G = With Green/yellow Earth Core.
X = Without Green/yellow Earth Core.

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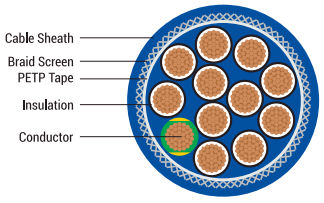

Application
Installation of intrinsically safe circuits.

Standard
Adapted to DIN EN 60079-14: VDE 0165 Part 1.

Technical Data
Nominal Voltage : U_o / U 300 / 500V. < 50V AC < 75V DC
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing 20 x cable ø. Fixed installation 6 x cable ø
Test Voltage : 3000V

Cable Construction
Bare copper, fine wire conductors, to DIN/BS EN 60228 Cl.5.
Core insulation of special PVC TI2 EN 50363-3.
Black core with continuous white numbering according to DIN VDE 0293.
Cores stranded in layers with optimal lay-length.
Plastic foil wrapping.
Tinned-copper braided screen, approx. 85% coverage.
Outer sheath of special PVC, TM2 to DIN/BS EN 50363-4.1.
Colour Blue (RAL 5015).

Properties
PVC self-extinguishing and flame retardant according to IEC 60332-1-2.
Mutual capacitance: Core to core approx. 140 nF/km core to screen approx. 185 nF/km.
Inductance: approx 0.68 mH/km.

Cable Design Parameters :

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031600201075	2 x 0.75	6.2	25.0	53.2
031600201075	3 x 0.75	6.5	31.3	64.0
031600201075	4 x 0.75	7.0	39.0	77.0
031600201075	4G 0.75	7.0	39.0	77.0
031600201075	5 x 0.75	7.7	47.2	93.4
031600201075	7 x 0.75	8.3	62.0	116.4
031600201075	12 x 0.75	10.9	98.9	189.7

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031600201075	18 x 0.75	12.7	141.0	265.0
031600201075	25 x 0.75	14.8	210.6	363.6
031600201075	2 x 1	6.5	29.5	59.7
031600201075	3 x 1	6.8	38.9	73.6
031600201075	4 x 1	7.3	49.1	89.0
031600201075	5 x 1	8.1	58.4	108.1
031600201075	7 x 1	8.8	77.2	136.8
031600201075	12 x 1	11.5	125.5	223.3
031600201075	18 x 1	13.9	180.0	328.9
031600201075	25 x 1	15.9	266.1	439.8
031600201075	2 x 1.5	7.1	39.4	73.9
031600201075	3 x 1.5	7.5	51.7	92.7
031600201075	4 x 1.5	8.2	66.2	115.9
031600201075	5 x 1.5	8.9	80.9	138.7
031600201075	7 x 1.5	9.9	108.0	182.3
031600201075	12 x 1.5	13.0	175.1	298.0
031600201075	18 x 1.5	15.6	276.0	450.8
031600201075	25 x 1.5	17.9	377.6	596.4

Note :
X = Without Green/yellow Earth Core (OZ).

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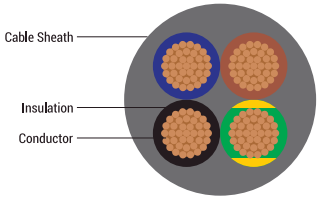

Application
Halogen-free cables for airports railway station, plant engineering and Industrial machinery

Standard
Adapted to EN 50525-3-11

Technical Data
Nominal Voltage : U_0 / U 450 / 750V
Temperature Range : Flexing -15°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing approx. 15 x cable ø. Fixed installation approx. 4 x cable ø
Test Voltage : 3000V

Cable Construction
Bare copper, fine wire conductors, to EN 60228 Cl. 5.
Core insulation of halogen-free compound TI6 to EN 50363-7.
Colour coded to DIN VDE 0293-308.
Green/Yellow earth core in outer layer.
Cores stranded in layers with optimal lay-length.
Halogen-Free sheath compound TM7, to EN 50363-8.
Outer jacket colour grey (RAL 7001).
LSOH :Low Smoke Zero Halogen-Free.

Properties
Flame test to IEC 60332-1-2.
No flame propagation according to IEC 60332-3-24 (flame spread on Vertical cable or wire bundle).
Halogen free according to IEC 60754-1.
Corrosive gas evolution to IEC 60754-2.

Cable Design Parameters :

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031700311105	3 G 1.5	8.2	38.2	110
031700411105	4 G 1.5	8.9	50.9	135
031700511105	5 G 1.5	10.0	63.7	169
031700311205	3G 2.5	10.0	63.7	169
031700411205	4G 2.5	10.9	84.9	209
031700511205	5G 2.5	12.0	106.1	256
031700310004	3G 4	11.2	101.2	231
031700410004	4G 4	12.5	135.0	295
031700510004	5G 4	13.9	168.7	366

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031700410006	4G 6	14.0	202.4	398
031700510006	5G 6	15.5	253.1	492
031700410010	4G 10	17.4	344.7	642
031700510010	5G 10	19.4	430.8	800
031700410016	4G 16	20.2	574.1	959
031700510016	5G 16	22.5	717.7	1194
031700410025	4G 25	25.1	893.1	1486
031700510025	5G 25	28.1	1116.3	1860
031700410035	4G 35	28.6	1257.6	2013
031700510035	5G 35	32.1	1572.0	2525
031700410050	4G 50	33.9	1804.4	2860
031700410070	4G 70	39.2	2549.7	3940
031700410095	4G 95	44.8	3399.7	5205
031700410120	4G 120	50.3	4306.2	6579

Note :
*G = With Green/yellow Earth Core.

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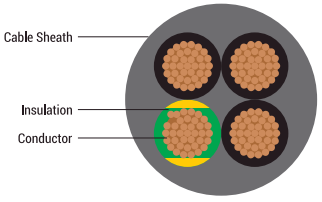

Application

Halogen-free cables for airports railway station, plant engineering and Industrial machinery, in EMC sensitive instruments

Standard

Adapted to EN 50525-3-11.

Technical Data

Nominal Voltage : U_0 / U 300 / 500V
Temperature Range : Flexing -15°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing approx. 10 x cable ø. Fixed installation approx. 4 x cable ø
Test Voltage : 4000V

Cable Construction

Bare copper, fine wire conductors, to EN 60228 Cl. 5.
Core insulation of halogen-free compound TI6 to EN 50363-7.
Black colour with white numbers DIN VDE 0293.
Green/Yellow earth core in outer layer.
Cores stranded in layers with optimal lay-length.
Halogen-free sheath compound TM7, to EN 50363-8.
Outer jacket colour grey (RAL 7001).
LSOH = Low Smoke Zero Halogen-Free.

Properties

Flame test to IEC 60332-1-2.
No flame propagation according to IEC 60332-3-24 (flame spread on Vertical cable or wire bundle).
Halogen free according to IEC 60754-1.
Corrosive gas evolution to IEC 60754-2.

Cable Design Parameters :

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031800201050	2 x 0.5	4.8	8.7	34
031800311050	3G 0.5	5.1	13.0	41
031800301050	3 x 0.5	5.1	13.0	41
031800411050	4G 0.5	5.6	17.4	50
031800401050	4 x 0.5	5.6	17.4	50
031800511050	5G 0.5	6.0	21.7	60
031800711050	7G 0.5	6.7	30.4	78

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031801211050	12G 0.5	8.9	52.2	136
031800201075	2 x 0.75	5.3	13.0	43
031800311075	3G 0.75	5.6	19.6	53
031800301075	3 x 0.75	5.6	19.6	53
031800411075	4G 0.75	6.1	26.1	65
031800401075	4 x 0.75	6.1	26.1	65
031800511075	5G 0.75	6.9	32.6	83
031800501075	5 x 0.75	6.9	32.6	83
031800711075	7G 0.75	7.6	45.6	105
031800701075	7 x 0.75	7.6	45.6	105
031800911075	9G 0.75	9.8	58.7	160
031801211075	12G 0.75	10.1	78.2	185
031801811075	18G 0.75	11.9	117.3	264
031802511075	25G 0.75	14.6	163.0	385
031800200001	2 x 1	5.6	17.4	51
031800310001	3G 1	6.0	26.1	64
031800300001	3 x 1	6.0	26.1	64
031800410001	4G 1	6.8	34.8	84
031800400001	4 x 1	6.8	34.8	84
031800510001	5G 1	7.5	43.5	101
031800710001	7G 1	8.9	60.8	143
031800810001	8G 1	9.7	69.5	169
031801210001	12G 1	11.1	104.3	231
031801410001	14G 1	11.7	121.7	262
031801810001	18G 1	13.2	156.5	334
031802510001	25G 1	16.2	217.3	488
031804110001	41G 1	19.7	356.4	749
031800201105	2 x 1.5	6.3	25.5	67
031800311105	3G 1.5	6.7	38.2	84
031800301105	3 x 1.5	6.7	38.2	84
031800411105	4G 1.5	7.3	50.9	105
031800511105	5G 1.5	8.2	63.7	132
031800711105	7G 1.5	9.0	89.1	169
031800811105	8G 1.5	10.6	101.9	216
031800911105	9G 1.5	11.5	114.6	250
031801211105	12G 1.5	12.1	152.8	299

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031801411105	14G 1.5	12.9	178.3	344
031801811105	18G 1.5	14.5	229.2	437
031802511105	25G 1.5	17.2	318.3	612
031803411105	34G 1.5	19.8	432.9	820
031800201205	2 x 2.5	7.6	42.4	103
031800311205	3G 2.5	8.3	63.7	134
031800411205	4G 2.5	9.1	84.9	168
031800511205	5G 2.5	10.2	106.1	210
031800711205	7G 2.5	11.2	148.5	271
031801211205	12G 2.5	14.8	254.6	469
031800410004	4G 4	10.8	135.0	250
031800510004	5G 4	12.1	168.7	312
031800710004	7G 4	13.3	236.2	405
031800410006	4G 6	13.0	202.4	367
031800510006	5G 6	14.5	253.1	458
031800710006	7G 6	16.0	354.3	596
031800410010	4G 10	15.5	344.7	570
031800510010	5G 10	17.1	430.8	703
031800410016	4G 16	18.8	574.1	896
031800510016	5G 16	21.0	717.7	1119
031800410025	4G 25	23.4	893.1	1391
031800510025	5G 25	25.8	1116.3	1717
031800410035	4G 35	26.4	1257.6	1872

Note :
'G = With Green/yellow Earth Core.
X = Without Green/yellow Earth Core.

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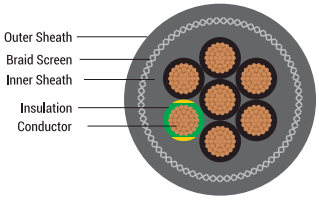

Application

Halogen-free cables for airports railway station, plant engineering and Industrial machinery, in EMC sensitive instruments

Standard

Adapted to EN 50525-3-11.

Technical Data

Nominal Voltage : U_o / U 300 / 500V
Temperature Range : Flexing -15°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing approx. 15 x cable ø. Fixed installation approx. 6 x cable ø
Test Voltage : 4000V

Cable Construction

Bare copper, fine wire conductors, to EN 60228 Cl. 5.
Core insulation of halogen-free compound TI6 to EN 50363-7.
Black colour with white numbers DIN VDE 0293.
Green/Yellow earth core in outer layer.
Cores stranded in layers with optimal lay-length.
Halogen free inner sheath in Grey.
Tinned-copper braided screen, approx. 85% coverage.
Halogen-free sheath compound TM7, to EN 50363-8.
Outer jacket colour grey (RAL 7001).
LSOH = Low Smoke Zero Halogen-Free.

Properties

Flame test to IEC 60332-1-2.
No flame propagation according to IEC 60332-3-24 (flame spread on Vertical cable or wire bundle).
Halogen free according to IEC 60754-1.
Corrosive gas evolution to IEC 60754-2.

Cable Design Parameters :

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031900201050	2 x 0.5	7.0	22.1	72
031900311050	3G 0.5	7.3	28.4	82
031900301050	3 X 0.5	7.3	28.4	82
031900411050	4G 0.5	7.9	33.5	97
031900401050	4 X 0.5	7.9	33.5	97
031900511050	5G 0.5	8.4	39.9	111
031900711050	7G 0.5	8.9	49.4	129

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031901211050	12G 0.5	11.3	78.0	208
031900201075	2 x 0.75	7.6	28.2	86
031900311075	3G 0.75	7.9	36.1	99
031900301075	3 X 0.75	7.9	36.1	99
031900411075	4G 0.75	8.4	43.9	114
031900401075	4 X 0.75	8.4	43.9	114
031900511075	5G 0.75	8.9	50.5	130
031900501075	5 X 0.75	8.9	50.5	130
031900711075	7G 0.75	9.8	66.4	163
031900701075	7 X 0.75	9.8	66.4	163
031901211075	12G 0.75	12.3	105.4	258
031901811075	18G 0.75	14.5	167.0	372
031902511075	25G 0.75	16.6	223.0	493
031900200001	2 x 1	7.9	33.0	96
031900310001	3G 1	8.2	43.7	111
031900300001	3 X 1	8.2	43.7	111
031900410001	4G 1	8.7	52.6	127
031900400001	4 X 1	8.7	52.6	127
031900510001	5G 1	9.5	63.6	153
031900710001	7G 1	10.5	82.9	192
031901210001	12G 1	13.3	151.9	322
031901810001	18G 1	15.5	211.0	444
031902510001	25G 1	17.7	283.3	586
031904110001	41G 1	22.0	456.5	923
031900201105	2 x 1.5	8.5	43.5	116
031900311105	3G 1.5	8.9	58.1	136
031900301105	3 X 1.5	8.9	58.1	136
031900411105	4G 1.5	9.6	71.9	163
031900511105	5G 1.5	10.6	102.6	209
031900711105	7G 1.5	11.3	129.4	247
031901211105	12G 1.5	14.8	206.9	416
031901411105	14G 1.5	0.0	232.9	185
031901811105	18G 1.5	17.2	292.1	575
031902511105	25G 1.5	20.1	392.5	783
031900311205	3G 2.5	10.4	102.5	204
031900411205	4G 2.5	11.4	125.7	248

Part Number	No. of Cores and Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
031900511205	5G 2.5	12.6	152.2	302
031900711205	7G 1.5	13.9	200.4	382
031901211205	12G 2.5	17.6	318.2	613
031900410004	4G 4	13.4	180.6	350
031900510004	5G 4	14.7	221.6	426
031900710004	7G 4	16.2	292.6	537
031900410006	4G 6	15.8	261.2	497
031900510006	5G 6	17.3	317.6	601
031900710006	7G 6	18.8	426.2	754
031900410010	4G 10	19.0	414.0	753
031900510010	5G 10	21.2	506.2	932
031900410016	4G 16	22.2	688.7	1128
031900510016	5G 16	24.4	846.4	1377
031900410025	4G 25	27.0	1032.9	1690
031900410035	4G 35	30.7	1420.6	2257
031900410050	4 G 50	36.5	2009.2	3205
031900410070	4 G 70	41.6	2788.5	4319
031900410095	4 G 95	47.8	3656.7	5691

Note :
'G = With Green/yellow Earth Core.
X = Without Green/yellow Earth Core.

NOTES

DATA & COMMUNICATION CABLES

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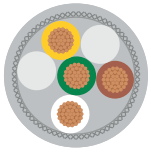

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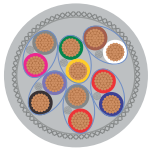

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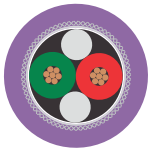

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CROSS SECTIONAL VIEW

LiYY

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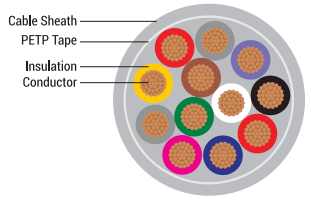

Application

These are special PVC data cables used for flexible use with free movement without tensile stress of forced movements in dry, moist and wet rooms but not suitable for open air, wherever the construction requirements call for a minimum outer diameter.

Technical Data

Standard : Based on VDE 0812
Nominal Voltage : 0.14 mm² = 350 V; >/= 0.25 mm² = 500 V
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : For flexible use 10 x cable ø
Test Voltage : Up to 0.25 mm² = 1200 V. From 0.34 mm² = 2000 V
Breakdown Voltage : Up to 0.25 mm² = 2400 V. From 0.34 mm² = 4000 V

Cable Construction

Bare copper, fine wire conductors, bunch stranded DIN VDE 0295 cl. 5, EN 60228 cl. 5.
Special PVC core insulation TI2, to EN 50363-3.
Conductor make-up for
0.14 mm² = 8 x 0.10 mm.
0.25 mm² = 14 x 0.15 mm.
0.34 mm² = 19 x 0.15 mm.
Core colours as per DIN 47100.
Cores stranded in layers with optimal lay-length.
Special PVC outer sheath TM2, to EN 50363-4.1.
Colour grey (RAL 7032).

Properties

PVC self-extinguishing and flame retardant according to EN 60332-1-2.
Capacitance (approx. Value)
up to 0.5 mm² - 120 nF/km
above 0.5 mm² - 160 nF/km.
Inductance approx. 0.65 mH/km.

Cable Design Parameters :

Part Number	No. of Cores & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050100201014	2 x 0.14	3.2	2.8	14
050100301014	3 x 0.14	3.2	4.1	15
050100401014	4 x 0.14	3.5	5.5	19
050100501014	5 x 0.14	4.0	6.9	24

Part Number	No. of Cores & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050100701014	7 x 0.14	4.3	9.7	29
050100801014	8 x 0.14	4.6	11.1	34
050101001014	10 x 0.14	5.3	13.8	44
050101201014	12 x 0.14	5.6	16.6	50
050101401014	14 x 0.14	5.9	19.4	56
050101601014	16 x 0.14	6.2	22.1	63
050102001014	20 x 0.14	6.5	27.7	72
050102501014	25 x 0.14	7.6	34.6	95
050103601014	36 x 0.14	8.7	49.8	129
050103701014	37 x 0.14	8.9	51.2	134
050104001014	40 x 0.14	9.5	55.3	150
050105001014	50 x 0.14	10.5	69.2	182
050105601014	56 x 0.14	11.0	77.5	204
050100201025	2 x 0.25	3.8	4.8	21
050100301025	3 x 0.25	3.9	7.3	23
050100401025	4 x 0.25	4.3	9.7	29
050100501025	5 x 0.25	4.8	12.1	37
050100701025	7 x 0.25	5.2	16.9	45
050100801025	8 x 0.25	5.7	19.4	53
050101001025	10 x 0.25	6.4	24.2	67
050101201025	12 x 0.25	6.7	29.0	76
050101401025	14 x 0.25	7.1	33.9	86
050101601025	16 x 0.25	7.5	38.7	97
050101801025	18 x 0.25	7.9	43.6	108
050102001025	20 x 0.25	9.1	48.4	136
050102501025	25 x 0.25	9.9	60.5	163
050103001025	30 x 0.25	10.3	72.6	183
050103201025	32 x 0.25	10.5	77.5	191
050103601025	36 x 0.25	11.1	87.1	214
050103701025	37 x 0.25	11.3	89.6	222
050104001025	40 x 0.25	11.5	96.8	233
050105001025	50 x 0.25	12.9	121.0	314
050100201034	2 x 0.34	4.2	6.7	26
050100301034	3 x 0.34	4.4	10.1	31
050100401034	4 x 0.34	4.9	13.4	39
050100501034	5 x 0.34	5.3	16.8	46

Part Number	No. of Cores & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050100701034	7 x 0.34	5.9	23.5	60
050100801034	8 x 0.34	6.3	26.9	68
050101001034	10 x 0.34	7.2	33.6	88
050101201034	12 x 0.34	7.6	40.3	100
050101401034	14 x 0.34	8.0	47.1	113
050101601034	16 x 0.34	8.4	53.8	126
050101801034	18 x 0.34	8.9	60.5	142
050102001034	20 x 0.34	9.8	67.2	167
050102101034	21 x 0.34	9.8	70.6	169
050102501034	25 x 0.34	11.2	84.1	214
050103001034	30 x 0.34	11.6	100.9	239
050103601034	36 x 0.34	12.6	121.0	284
050104001034	40 x 0.34	13.5	134.5	322
050105001034	50 x 0.34	15.1	168.1	410
050100201050	2 x 0.5	4.8	8.7	34
050100301050	3 x 0.5	5.1	13.0	41
050100401050	4 x 0.5	5.7	17.4	52
050100501050	5 x 0.5	6.2	21.7	62
050100601050	6 x 0.5	6.7	26.1	73
050100701050	7 x 0.5	7.4	30.4	80
050100801050	8 x 0.5	8.0	34.8	102
050101001050	10 x 0.5	8.8	43.5	125
050101201050	12 x 0.5	9.1	52.2	139
050101401050	14 x 0.5	10.0	60.8	166
050101601050	16 x 0.5	10.0	69.5	178
050102001050	20 x 0.5	11.2	86.9	222
050102501050	25 x 0.5	13.4	108.6	265
050103001050	30 x 0.5	14.4	130.4	309
050104001050	40 x 0.5	17.2	173.8	432
050100201075	2 x 0.75	5.2	13.0	42
050100301075	3 x 0.75	5.5	19.6	51
050100401075	4 x 0.75	6.2	26.1	66
050100501075	5 x 0.75	6.8	32.6	80
050100701075	7 x 0.75	8.1	45.6	103
050100801075	8 x 0.75	8.9	52.2	131
050101001075	10 x 0.75	9.6	65.2	156

Part Number	No. of Cores & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050101201075	12 x 0.75	9.9	78.2	178
050101601075	16 x 0.75	11.6	104.3	232
050102001075	20 x 0.75	12.6	130.4	286
050102501075	25 x 0.75	14.0	163.0	362
050100200001	2 x 1	5.5	19.2	56
050100300001	3 x 1	6.0	29.0	71
050100500001	5 x 1	7.3	43.5	98.0
050100201105	2 x 1.5	6.5	25.5	70
050100301105	3 x 1.5	6.9	38.2	87
050100401105	4 x 1.5	7.8	50.9	113

LiYY (TP)

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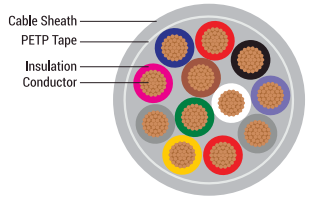

Application

LiYY (TP) is applicable in the short runs and tight spaces, where the main requirements are smaller outer diameter and bending radii. These cables ideally meets these requirements.

Technical Data

Standard : Based on VDE 0812
Nominal Voltage (Not for power application) : 0.14 mm² = 350 V; >/= 0.25 mm² = 500 V
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : For flexible use 10 x cable ø
Test Voltage : Up to 0.25 mm² = 1200 V. From 0.34 mm² = 2000 V
Breakdown Voltage : Up to 0.25 mm² = 2400 V
From 0.34 mm² = 4000 V

Cable Construction

Bare copper, fine wire conductors, to DIN/BS EN 60228 cl.5.
Conductor make-up for
0.14 mm² = 18 x 0.10 mm.
0.25 mm² = 14 x 0.15 mm.
0.34 mm² = 19 x 0.15 mm.
Core insulation of special PVC TI2 EN 50363-3.
Core colours as per DIN 47100.
Pairs stranded in layers with optimal lay-length.
Outer sheath of special PVC, TM2 to EN 50363-4.1.
Colour grey (RAL 7032).

Properties

PVC self-extinguishing and flame retardant according to EN 60332-1-2.
Capacitance (approx. Value)
Up to 0.5 mm² - 120 nF/km
Above 0.5 mm² - 160 nF/km
Inductance : Approx. 0.65 mH/km

Cable Design Parameters :

Part Number	No. of Pairs & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050200221014	2 x 2 x 0.14	4.9	5.1	26.8
050200321014	3 x 2 x 0.14	5.0	7.7	31.6
050200421014	4 x 2 x 0.14	5.5	10.3	38.6

Part Number	No. of Pairs & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050200521014	5 x 2 x 0.14	6.0	12.8	45.2
050200621014	6 x 2 x 0.14	6.4	15.4	51.8
050201021014	10 x 2 x 0.14	7.7	25.7	76.8
050201221014	12 x 2 x 0.14	8.3	30.8	88.8
050201621014	16 x 2 x 0.14	9.3	41.0	112.5
050200221025	2 x 2 x 0.25	6.2	9.0	40.2
050200321025	3 x 2 x 0.25	6.3	13.5	48.8
050200421025	4 x 2 x 0.25	7.0	18.0	60.6
050200621025	6 x 2 x 0.25	8.1	26.9	83.3
050200821025	8 x 2 x 0.25	9.1	35.9	105.2
050201021025	10 x 2 x 0.25	10.0	44.9	126.6
050200221050	2 x 2 x 0.5	7.3	18.2	59.1
050200321050	3 x 2 x 0.5	7.4	27.4	74.3
050200421050	4 x 2 x 0.5	8.3	36.5	93.7
050200821050	8 x 2 x 0.5	11.0	73.0	168.1
050201021050	10 x 2 x 0.5	12.1	91.2	204.3
050200221075	2 x 2 x 0.75	7.8	27.4	71.9
050200321075	3 x 2 x 0.75	7.9	41.0	92.3
050200421075	4 x 2 x 0.75	8.9	54.7	117.3
050200821075	8 x 2 x 0.75	11.9	109.5	214.0
050201021075	10 x 2 x 0.75	13.0	136.8	261.2

LiYCY

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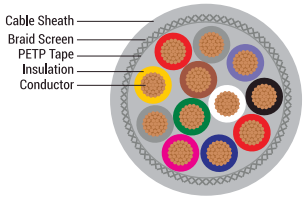

Technical Data

Standard : Based on VDE 0812
Nominal Voltage (Not for power application) : 0.14 mm² = 350 V; >/= 0.25 mm² = 500 V
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing 15 x cable ø. Fixed installation 6 x cable ø
Test Voltage : 0.14 mm² : 1200 V; > 0.14 mm² : 1500 V.
Capacitance (approx. Value)
Up to 0.5 mm²
C/C = 120 nF/km. C/S = 160 nF/km.
0.75 mm² to 1.5 mm²
C/C = 160 nF/km. C/S = 240 nF/km.
Inductance : Approx. 0.65 mH/km

Cable Construction

Bare copper, fine wire conductors, to DIN/BS EN 60228 cl.5.
Special PVC core insulation TI2, to EN 50363-3.
Conductor make-up for
0.14 mm² = 18 x 0.1 mm.
0.25 mm² = 14 x 0.15 mm.
0.34 mm² = 19 x 0.15 mm.
Colour coded to DIN 47100.
Cores stranded in layers with optimal lay-length.
Tinned copper braided screen, approx 85% coverage.
Special PVC outer sheath TM2, to EN 50363-4.1.
Colour grey (RAL 7032).

Properties

Overall braid minimizes electrical interference.
Flame retardant to EN 60332-1-2.
Smaller dimension screened cables are suitable for use in computer systems, instrumentation technology office equipment, balance, etc.

Cable Design Parameters :

Part Number	No. of Cores & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050300201014	2 x 0.14	4.1	10.2	15
050300301014	3 x 0.14	4.3	12.2	18
050300401014	4 x 0.14	4.6	14.6	21

Part Number	No. of Cores & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050300501014	5 x 0.14	4.9	16.8	23
050300701014	7 x 0.14	5.2	20.8	28
050300801014	8 x 0.14	5.7	23.5	32
050301001014	10 x 0.14	6.3	28.4	38
050301201014	12 x 0.14	6.5	31.5	41
050301401014	14 x 0.14	6.8	35.2	45
050301501014	15 x 0.14	7.1	36.9	48
050301601014	16 x 0.14	7.1	39.0	50
050301801014	18 x 0.14	7.4	42.7	54
050302001014	20 x 0.14	7.8	46.8	59
050302101014	21 x 0.14	7.8	47.9	60
050302501014	25 x 0.14	8.6	56.0	69
050302801014	28 x 0.14	8.7	60.7	74
050303001014	30 x 0.14	9.2	64.3	79
050303201014	32 x 0.14	9.5	68.2	84
050303601014	36 x 0.14	9.8	74.9	91
050304001014	40 x 0.14	10.2	81.1	98
050304401014	44 x 0.14	10.9	89.0	108
050305001014	50 x 0.14	11.4	99.3	119
050300201025	2 x 0.25	4.4	13.1	19.0
050300301025	3 x 0.25	4.6	16.5	22.7
050300401025	4 x 0.25	5.0	19.8	26.6
050300501025	5 x 0.25	5.3	23.4	31.0
050300701025	7 x 0.25	5.7	29.4	37.6
050300801025	8 x 0.25	6.2	33.9	43.2
050301001025	10 x 0.25	6.9	40.3	51.0
050301201025	12 x 0.25	7.1	46.4	57.5
050301401025	14 x 0.25	7.5	52.1	63.8
050301501025	15 x 0.25	7.8	55.5	67.9
050301601025	16 x 0.25	7.8	57.9	70.3
050301801025	18 x 0.25	8.2	64.5	77.6
050302001025	20 x 0.25	8.8	70.2	85.2
050302101025	21 x 0.25	8.8	72.7	87.6
050302501025	25 x 0.25	9.7	85.4	102.2
050302801025	28 x 0.25	10.2	93.5	111.2
050303001025	30 x 0.25	10.2	98.4	116.1

Part Number	No. of Cores & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050303201025	32 x 0.25	11.0	104.7	123.2
050303601025	36 x 0.25	11.8	115.7	134.9
050304001025	40 x 0.25	11.3	126.8	146.9
050305001025	50 x 0.25	12.9	154.6	179.0
050306101025	61 x 0.25	13.6	184.0	209.9
` 050300201034	2 x 0.34	4.9	16.9	24
050300301034	3 x 0.34	5.1	20.4	28
050300401034	4 x 0.34	5.6	25.0	33
050300501034	5 x 0.34	6	29.2	38
050300701034	7 x 0.34	6.6	37.6	47
050300801034	8 x 0.34	7.6	43.0	54
050301001034	10 x 0.34	8.0	51.9	64
050301201034	12 x 0.34	8.4	59.0	72
050301401034	14 x 0.34	8.9	67.0	81
050301501034	15 x 0.34	9.2	72.1	86
050301601034	16 x 0.34	9.4	75.1	89
050301801034	18 x 0.34	9.9	83.3	98
050302001034	20 x 0.34	10.7	91.3	107
050302101034	21 x 0.34	10.8	94.9	111
050302501034	25 x 0.34	11.6	111.4	131
050302801034	28 x 0.34	12.0	123.0	143
050303001034	30 x 0.34	12.3	129.7	150
050303201034	32 x 0.34	12.9	137.9	159
050303601034	36 x 0.34	13.4	153.2	176
050304001034	40 x 0.34	14.4	167.5	191
050305001034	50 x 0.34	15.9	205.6	232
050300201050	2 x 0.5	5.4	19.1	27
050300301050	3 x 0.5	5.8	24.6	33
050300401050	4 x 0.5	6.4	30.2	40
050300501050	5 x 0.5	6.8	35.8	46
050300601050	6 x 0.5	7.4	42.1	53
050300701050	7 x 0.5	7.6	46.5	58
050300801050	8 x 0.5	8.3	52.5	65
050301001050	10 x 0.5	9.4	64.7	81
050301201050	12 x 0.5	9.7	73.8	90
050301401050	14 x 0.5	10.4	83.5	101

Part Number	No. of Cores & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050301601050	16 x 0.5	11.1	93.7	112
050301801050	18 x 0.5	11.6	103.8	123
050301901050	19 x 0.5	11.7	108.7	128
050302001050	20 x 0.5	12.6	114.3	135
050302401050	24 x 0.5	13.7	134.9	159
050302501050	25 x 0.5	13.9	139.4	164
050302701050	27 x 0.5	14.0	149.3	174
050303001050	30 x 0.5	14.6	163.2	189
050300201075	2 x 0.75	6.2	25.0	34
050300301075	3 x 0.75	6.4	32.4	42
050300401075	4 x 0.75	7.0	40.4	51
050300501075	5 x 0.75	7.6	48.7	61
050300701075	7 x 0.75	8.5	63.8	77
050300801075	8 x 0.75	9.2	72.3	88
050301001075	10 x 0.75	10.5	88.5	107
050301201075	12 x 0.75	10.9	102.4	122
050301801075	18 x 0.75	13	146.1	170
050302501075	25 x 0.75	15.5	198.2	227
050303001075	30 x 0.75	16.8	232.3	263
050300200001	2 x 1	6.5	30.7	41
050300300001	3 x 1	6.9	40.3	52
050300400001	4 x 1	7.5	50.7	63
050300500001	5 x 1	8.3	61.3	75
050300700001	7 x 1	9.0	80.6	96
050301000001	10 x 1	11.4	112.5	134
050301200001	12 x 1	11.7	131.3	153
050301800001	18 x 1	13.4	188.7	216
050302500001	25 x 1	16.2	255.3	290
050300201105	2 x 1.5	7.5	63.0	88.0
050300301105	3 x 1.5	8.0	76.0	100.0
050300401105	4 x 1.5	8.7	98.0	126.0
050300501105	5 x 1.5	9.6	116.0	160.0
050300601105	6 x 1.5	10.6	140.0	192.0
050300701105	7 x 1.5	10.7	152.0	208.0
050300801105	8 x 1.5	11.7	172.0	244.0
050301001105	10 x 1.5	13.5	193.0	315.0

Part Number	No. of Cores & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050301201105	12 x 1.5	14.0	254.0	338.0
050301401105	14 x 1.5	15.0	272.0	383.0
050301601105	16 x 1.5	15.7	285.0	424.0
050301901105	19 x 1.5	17.1	387.0	506.0
050302401105	24 x 1.5	19.5	448.0	690.0
050302701105	27 x 1.5	19.8	506.0	781.0
050303701105	37 x 1.5	23.6	682.0	941.0

LiYCY (TP)

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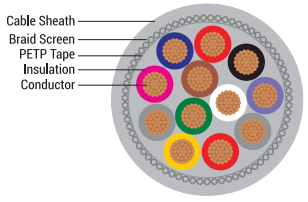

Application

The high level of screening reduces substantially the effects of electrical disturbances. These cables are used for data & signal transmission.

Technical Data

Standard : Based on VDE 0812
Nominal Voltage (Not for power application) : 0.14 mm² = 350 V; >/= 0.25 mm² = 500V
Insulation Resistance : Min. 20 GΩ x cm
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing 15 x cable ø. Fixed installation 6 x cable ø
Test Voltage : 0.14 mm² : 1200 V; > 0.14 mm² : 1500 V
Capacitance (approx. Value)
Up to 0.5 mm²
C/C = 120 nF/km. C/S = 160 nF/km
0.75 mm² to 1.5 mm²
C/C = 160 nF/km. C/S = 240 nF/km
Inductance : Approx. 0.65 mH/km

Cable Construction

Bare copper, fine wire conductors, to DIN/BS EN 60228 cl.5.
Conductor make-up for
0.14 mm² = 18 x 0.1 mm.
0.25 mm² = 14 x 0.15 mm.
0.34 mm² = 19 x 0.15 mm.
Special PVC core insulation TI2, to EN 50363-3.
Colour coded to DIN 47100, but without colour repetition, refer table 2.2.
Cores stranded in pair with optimal lay-length.
Cores stranded in layers with optimal lay-length.
Tinned copper braided screen, approx 85% coverage.
Special PVC outer sheath TM2, to EN 50363-4.1.
Sheath colour grey (RAL 7032).

Properties

Overall braid minimizes electrical interference.
Flame retardant to EN 60332-1-2.
Smaller dimension screened cables are suitable for use in computer systems, instrumentation technology office equipment, balance, etc.

Cable Design Parameters :

Part Number	No. of Pairs & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050400221014	2 x 2 x 0.14	5.4	5.2	38.4
050400321014	3 x 2 x 0.14	5.5	7.8	43.3
050400421014	4 x 2 x 0.14	6.0	10.5	52.0
050400621014	6 x 2 x 0.14	6.9	15.7	67.8
050400821014	8 x 2 x 0.14	7.6	20.9	82.4

Part Number	No. of Pairs & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050401021014	10 x 2 x 0.14	8.2	26.2	96.8
050401221014	12 x 2 x 0.14	8.8	31.4	110.4
050401621014	16 x 2 x 0.14	9.8	41.9	137.7
050402021014	20 x 2 x 0.14	10.7	52.3	162.1
050402521014	25 x 2 x 0.14	11.7	65.4	194.5
050400221025	2 x 2 x 0.25	6.6	9.2	55.4
050400321025	3 x 2 x 0.25	6.7	13.7	64.4
050400421025	4 x 2 x 0.25	7.4	18.3	78.4
050400621025	6 x 2 x 0.25	8.6	27.5	104.3
050400821025	8 x 2 x 0.25	9.6	36.6	129.1
050401021025	10 x 2 x 0.25	10.5	45.8	153.5
050401221025	12 x 2 x 0.25	11.3	54.9	177.1
050401621025	16 x 2 x 0.25	12.7	73.2	222.6
050402521025	25 x 2 x 0.25	15.3	114.4	322.3
050400221034	2 x 2 x 0.34	6.8	12.4	60.3
050400321034	3 x 2 x 0.34	6.9	18.6	70.8
050400421034	4 x 2 x 0.34	7.6	24.8	86.6
050400621034	6 x 2 x 0.34	8.9	37.3	116.9
050400821034	8 x 2 x 0.34	9.9	49.7	145.5
050401021034	10 x 2 x 0.34	10.8	62.1	173.6
050401221034	12 x 2 x 0.34	11.6	74.5	200.3
050401621034	16 x 2 x 0.34	13.0	99.4	254.1
050402521034	25 x 2 x 0.34	15.8	155.3	370.8
050400221050	2 x 2 x 0.5	7.8	18.6	78.5
050400321050	3 x 2 x 0.5	7.9	27.9	93.9
050400421050	4 x 2 x 0.5	8.8	37.2	115.7
050400621050	6 x 2 x 0.5	10.3	55.8	157.7
050400821050	8 x 2 x 0.5	11.5	74.4	198.6
050401221050	12 x 2 x 0.5	13.6	111.6	276.4
050401621050	16 x 2 x 0.5	15.4	148.8	353.4
050400221075	2 x 2 x 0.75	8.3	27.9	92.5
050400321075	3 x 2 x 0.75	8.4	41.9	113.2
050400421075	4 x 2 x 0.75	9.4	55.8	141.4
050400521075	5 x 2 x 0.75	10.2	69.8	168.4
050400621075	6 x 2 x 0.75	11.0	83.7	195.3
050400821075	8 x 2 x 0.75	12.3	111.6	248.0
050401221075	12 x 2 x 0.75	14.6	167.4	348.3
050400220001	2 x 2 x 1	9.1	37.2	111.7
050400320001	3 x 2 x 1	9.3	55.8	138.9
050400420001	4 x 2 x 1	10.3	74.4	175.1
050400520001	5 x 2 x 1	11.3	93.0	209.4

Li2YCY (TP)

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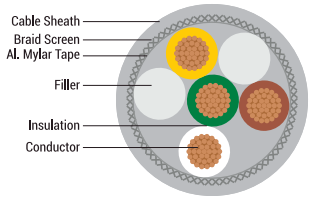

Application

These data cables with twisted pairs are used in particular for the interference-free transmission of data and signals over longer distances. The high transmission rate are suitable for RS 422 and RA 485 interfaces. These cables are suitable for fixed for fixed installations as well as for flexing Application, for free movement without forced motion and without tensile stress , in dry and moist environments, though not for outdoor Application (sheath colour grey).
The version ... Yv, colour black with reinforced outer sheath, is suitable for installation in the ground.

Technical Data

Standard : Based on VDE 0812
Operating top level Voltage : Max. 250 V (not for purpose of high current and power installation)
Test Voltage : Core/core 2000 V. Core/screen 1000 V
Insulation Resistance : Min. 5000 GΩ x cm
Mutual Capacitance : Max. 60 nF/km
Characteristic Impedance : 100 Ohm ±15
Cross-talk Attenuation : Upto 1 MHz min. 50 dB. Upto 10 MHz min. 40 dB
Inductance : Approx. 0.65 mH/km
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C
Minimum Bending Radius : Flexing 15 x cable ø. Fixed installation 6 x cable ø

Cable Construction

Bare copper stranded wires, 7-wires
Conductor make-up for
0.22 mm² = 7 x 0.20 mm
0.34 mm² = 7 x 0.25 mm
0.5 mm² = 7 x 0.30 mm
Conductor resistance (loop) at 20°C
0.22 mm² = 186 Ω/km (max.)
0.34 mm² = 115 Ω/km (max.)
0.5 mm² = 78.5 Ω/km (max.)
Metal coated copper is also offered on request.
Core insulation of PE (Polyethyelene).
Core colours as per DIN 47100.
Cores stranded in pair with optimal lay-length.
Pair stranded in layers with optimal lay-length.
Plastic coated aluminium foil wrap.
Tinned copper braided screen, approx 85% coverage.
Special PVC outer sheath TM2, to EN 50363-4.1.
Sheath colour grey (RAL 7032).
Type ..... Yv with reinforced outer sheath of PVC for underground laying.
Also available in armour on request.

Properties

Flame retardant to EN 60332-1-2.
The twisted-pair lay-up prevents electrical unbalances within the cable and this thus effectively suppresses cross-talking effects.

Cable Design Parameters :

	Part Number	No. of Pairs & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
Li-2YCYv (TP) Black	050600221050	2 x 2 x 0.5	9.4	18.2	95.8
	050600321050	3 x 2 x 0.5	9.5	27.2	111.8
	050600421050	4 x 2 x 0.5	10.6	36.3	136.6
	050600821050	8 x 2 x 0.5	14.0	72.6	230.7
	050601021050	10 x 2 x 0.5	15.3	90.8	274.1
	050600221075	2 x 2 x 0.75	10.0	27.6	112.9
	050600321075	3 x 2 x 0.75	10.2	41.4	134.2
	050600421075	4 x 2 x 0.75	11.4	55.2	166.2
	050600821075	8 x 2 x 0.75	15.1	110.5	284.5
	050601021075	10 x 2 x 0.75	16.6	138.1	342.8
	050600220001	2 x 2 x 1	10.7	37.3	129.3
	050600320001	3 x 2 x 1	10.9	56.0	159.9
	050600420001	4 x 2 x 1	12.2	74.6	197.6
	050600820001	8 x 2 x 1	16.2	149.2	344.8
	050601020001	10 x 2 x 1	17.8	186.5	413.5

Cable Design Parameters :

	Part Number	No. of Pairs & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
Li-2YCY (TP) Grey	050500221022	2 x 2 x 0.22	8.1	8.1	67.3
	050500321022	3 x 2 x 0.22	8.2	12.1	76.7
	050500421022	4 x 2 x 0.22	9.2	16.1	93.4
	050500821022	8 x 2 x 0.22	12.0	32.3	153.9
	050501021022	10 x 2 x 0.22	13.2	40.4	181.7
	050500121034	2 x 2 x 0.34	8.6	12.6	78.0
	050500221034	3 x 2 x 0.34	8.7	18.9	89.8
	050500321034	4 x 2 x 0.34	9.7	25.2	109.6
	050500421034	8 x 2 x 0.34	12.9	50.4	185.2
	050500821034	10 x 2 x 0.34	14.1	63.1	218.8
	050500221050	2 x 2 x 0.5	9.1	18.2	89.1
	050500321050	3 x 2 x 0.5	9.2	27.2	105.1
	050500421050	4 x 2 x 0.5	10.3	36.3	129.1
	050500821050	8 x 2 x 0.5	13.7	72.6	220.8
	050501021050	10 x 2 x 0.5	15.0	90.8	263.2
	050500221075	2 x 2 x 0.75	9.7	27.6	105.8
	050500321075	3 x 2 x 0.75	9.9	41.4	127.0
	050500421075	4 x 2 x 0.75	11.1	55.2	158.2
	050500821075	8 x 2 x 0.75	14.8	110.5	273.8
	050501021075	10 x 2 x 0.75	16.3	138.1	331.1
	050500220001	2 x 2 x 1	10.4	37.3	121.7
	050500320001	3 x 2 x 1	10.6	56.0	152.2
	050500420001	4 x 2 x 1	11.9	74.6	189.0
	050500820001	8 x 2 x 1	15.9	149.2	333.3
	050501020001	10 x 2 x 1	17.5	186.5	400.9
Li-2YCYv (TP) Black	050600221022	2 x 2 x 0.22	8.4	8.1	73.2
	050600321022	3 x 2 x 0.22	8.5	12.1	82.7
	050600421022	4 x 2 x 0.22	9.5	16.1	100.0
	050600821022	8 x 2 x 0.22	12.3	32.3	162.6
	050601021022	10 x 2 x 0.22	13.5	40.4	191.3
	050600221034	2 x 2 x 0.34	8.9	12.6	84.2
	050600321034	3 x 2 x 0.34	9.0	18.9	96.2
	050600421034	4 x 2 x 0.34	10.0	25.2	116.7
	050600821034	8 x 2 x 0.34	13.2	50.4	194.5
	050601021034	10 x 2 x 0.34	14.4	63.1	229.0

Li2YCY PiMF-CY

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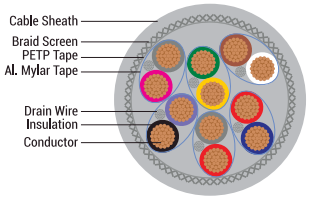

Application

Absolute disturbance-free data transfer both for installed terminals in all areas of medicine and data technology. Also suitable for use in machine tool and steel producing industries, traffic signal systems, assembly lines and food processing.

Technical Data

Standard : PE insulated cable for computer insulation
Nominal Voltage: Max. 250 V (not for purpose of high current and power installation)
Test Voltage : Core / core 2000 V. Core / screen 1000V
Insulation Resistance : Min. 5000 GΩ x cm
Mutual Capacitance
0.22 mm² max., 70 nF/km
0.34 mm² max., 70 nF/km
0.5 mm² max., 75 nF/km
1 mm² max., 85 nF/km
Inductance : Approx. 0.4 mH/km
Cross-Talk Attenuation : Min. 80 dB up to 1 MHZ
Characteristic Impedance at : f>1 MHz : approx. 85 Ω
Minimum Bending Radius : Fixed 10 x cable ø
Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C

Cable construction

Bare copper, fine 7- wire conductors.
Conductor make-up for
0.22 mm² = 7 x 0.20 mm
0.34 mm² = 7 x 0.25 mm
0.5 mm² = 7 x 0.30 mm
0.75 mm² = 7 x 0.37 mm
1 mm² = 7 x 0.43 mm
Conductor Resistance (loop) at 20°C
0.22 mm² = 186 Ω/km (max.)
0.34 mm² = 115 Ω/km (max.)
0.5 mm² = 78.5 Ω/km (max.)
0.75 mm² = 78.5 Ω/km (max.)
1 mm² = 36.2 Ω/km (max.)
PE Core insulation Colour code as per DIN 47100.
PiMF : (pair in metal foil) cores twisted in pairs, foil wrapped plastic coated aluminium foil and copper drain-wire tinned, 100% coverage.
PiMFs are stranded in layer.
Core wrapping with plastic tapes.
Overall copper screened braiding, 85 % coverage.
Special PVC outer sheath TM2, to EN 50363-4.1.
Colour grey (RAL 7032).

Properties

Flame retardant to EN 60332-1-2.

The twisted-pair lay-up prevents electrical unbalances within the cable and this thus effectively suppresses cross-talking effects.

Cable Design Parameters :

Part Number	No. of Pairs & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
050700221022	2 x 2 x 0.22	8.0	7.9	75.5
050700321022	3 x 2 x 0.22	8.3	11.9	95.7
050700421022	4 x 2 x 0.22	9.3	15.8	126.9
050700821022	8 x 2 x 0.22	12.4	31.7	286.5
050701021022	10 x 2 x 0.22	13.8	39.6	397.7
050700221034	2 x 2 x 0.34	8.5	12.4	90.1
050700321034	3 x 2 x 0.34	8.8	18.5	119.8
050700421034	4 x 2 x 0.34	9.9	24.7	161.4
050700821034	8 x 2 x 0.34	13.2	49.5	389.0
050701021034	10 x 2 x 0.34	14.7	61.8	547.8
050700221050	2 x 2 x 0.5	9.0	17.8	106.3
050700321050	3 x 2 x 0.5	9.3	26.7	146.1
050700421050	4 x 2 x 0.5	10.4	35.6	202.6
050700521050	5 x 2 x 0.5	11.4	44.5	267.7
050700821050	8 x 2 x 0.5	14.1	71.2	522.7
050701021050	10 x 2 x 0.5	15.6	89.0	730.7
050700220001	2 x 2 x 1	10.3	35.6	137.7
050700320001	3 x 2 x 1	10.6	53.4	187.0
050700420001	4 x 2 x 1	12.0	71.2	254.3
050701020001	10 x 2 x 1	17.7	163.2	808.3

BUS J-Y(St)Yh 2 x 2 x 0.8

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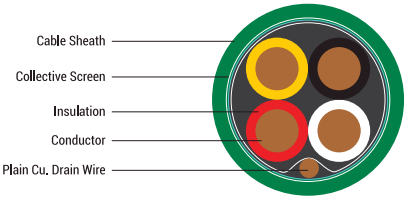

Application

The EIB-BUS cable is used for the transmission of bus signals for intelligent automation systems in buildings. To install and operate a building's management systems requires a wide range of technologies of different complexities. The control, monitoring and optimization of the various functions and services include heating and cooling, ventilation, lighting, indicator boards, blinds and often even the management of electric appliances. The basic control technologies have been in existence for some time. Systems are available in various degrees of complexity, ranging from the timer-controlled water heater or thermo static radiator valves (TRVs), to the so-called "intelligent houses" which manage, according to prearranged efficiency criteria, everything from safety and security systems to air conditioning, and from lighting and ventilation systems to telematic services and domestic appliances.

Technical Data

Based on KNX standard.
Operating Top Level Voltage : Max. 250V (not for purpose of high, current and power installation)
Temperature Range : Flexing -5°C to +50°C
Fixed installation -30°C to +70°C
Minimum Bending Radius : 7.5 x cable ø
Test Voltage : 4000V

Cable Construction

Annealed Bare copper solid wire.
Core insulation of PVC.
Pair colours :
Circuit 1 - Red and Black.
Circuit 2 - White and Yellow.
Cores twisted to star-quad.
Drain wire : Annealed bare copper, Cl. 1.
Core wrapping with foil.
Special PVC outer sheath.
Sheath colour : Green.

Properties

Mutual capacitance : Max. 100 nF/km.
Capacitance unbalance : Max. 200 pF/100m.
Characteristic impedance : 100 Ω ± 15.
Conductor resistance (loop) at 20°C: 73.2 Ω/km
Flame retardant to IEC 60332-1-2.
These cables can be laid over, in, or below the plaster, in pipes and pipe ducts, in dry, moist and wet areas as well as outside, provided they are protected against direct exposure to the sun. Wiring together with power supply cables is possible without limitation.

Cable Design Parameters :

Part Number	No. of Pairs x Nominal Cross-Section (mm²)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
011000221080	2 x 2 x 0.8 mm	7.2 ± 0.5 mm	20.0	68.0

BUS C (Y) 1 X 2 X 0.64

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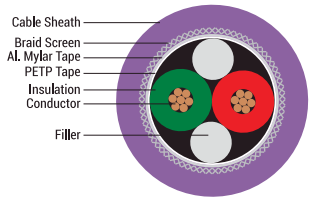


Application

This system cable is used to interconnect L2-BUS components. This cable is an economical solution for the cell and field area. For the information exchange between different automation systems as well as for communication with the connected decentralized field units, serial field bus systems are used. The types mentioned here are suitable for indoor laying and are equipped with a special PVC sheath.

Technical Data

Standard : Adapted to DIN 19245 & EN 50170

Operating Top Level Voltage : Max. 250 V (not for purpose of high current and power installation)

Insulation Resistance : Min. 5000 GΩ x cm

Temperature Range : Flexing -5°C to +70°C. Fixed installation -30°C to +70°C

Minimum Bending Radius : Flexing 12 x cable ø. Fixed installation 6 x cable ø

Test Voltage : 1500V

Mutual Capacitance : Approx. 35 nF/km

Characteristic Impedance : 100 Ohm ± 15

Inductance : Approx. 0.65 mH/km

Conductor Resistance (loop) at 20°C : 110 Ω/km

Cable Construction

Bare copper stranded wires, 7-wires.

Core insulation of PE (Polyethyelene).

Core colours - red & green.

Cores stranded in pair with optimal lay-length.

Core wrapping with foil.

Tinned copper braided screen, approx 85% coverage.

Special PVC outer sheath TM2, to EN 50363-4.1.

Sheath colour : violet

Properties

Flame retardant to IEC 60332-1-2.

Cable Design Parameters :

Part Number	No. of Pairs & Nominal Cross Sectional Area (Sq. mm)	Approx. Cable Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
50800121064	1 x 2 x 0.64 mm	8.2 ± 0.5 mm	22	98.0

APPENDIX

Appendix

Core Identification for Colour Coded Low-Voltage Cables

VDE 0293-302/HD 308 S2.

For making cores in multi and several core cables for use in electrical systems and distribution systems.

For the supply of permanently secured or portable supplies and for portable equipment cables.

Number of Cores	Cables with Protective Conductor (Code J or G)	Cables without Protective Conductor (Code O or X)	Cables with Concentric Conductor
2	-	BU/BN	BU/BN
3	GNYE/BN/BU	BN/BK/GY	BN/BK/GY
3a	-	BU/BN/BK	BU/BN/BK
4	GNYE/BN/BK/GY	BU/BN/BK/GY	BU/BN/BK/GY
4a	GNYE/BU/BN/BK	-	-
5	GNYE/BU/BN/BK/GY	BU/BN/BK/GY/BK	BU/BN/BK/GY/BK
6 and above	GNYE/BK (with printed numbers)	BK (with printed numbers)	BK (with printed numbers)

Colour Code for Power Cables as per VDE 0293 (Old)

(Colour codes are listed in IEC 60757).

For making cores in multicores in multi and several core cables for connecting portable consumers.

Number of Cores	Cables with Green/Yellow Core (Harmonised)	Cables with Green/Yellow Core (Currently not yet Harmonised)	Cables with Concentric Conductor
2	-	BU/BN	-
3	GNYE/BN/BU	BU/BN/BK	-
3	-	BU/BN/BK	-
4	GNYE/BK/BU/BN	BU/BN/BK/GY	-
5	GNYE/BK/BU/BN/BK	BU/BN/BK/GY/BK	-
6 and above	GNYE/further core in BK with printed numbers, starting from the inside with 1 GNYE in the outer layer	BK (with printed numbers)	-

Colour Codes for Fixed Installation

For making cores in multi- and several- core cables and in multi-core cables for fixed installation

Number of Cores	Cables with Green/Yellow Core (Harmonised)	Cables with Green/Yellow Core (Currently not Yet Harmonised)	Cables with Concentric Conductor
2	-	BK/BU	BK/BU
3	GNYE/BN/BU	BN/BU/BK	BK/BU/BN
3	-	BN/BK/BU	-
4	GNYE/BK/BU/BN	BK/BN/BU/BK	BK/BU/BN/BK
5	GNYE/BK/BU/BN/BK	BK/BN/BU/BK/BK	-
6 and above	GNYE/further core in BK with printed numbers, starting from the inside with 1 GNYE in the outer layer	Cores in BK with printed numbers, starting from the inside with 1	Cores in BK with printed numbers, starting from the inside with 1

Colour Codes as per IS 694

Number of Cores	Cable for Fixed Installation	Cables for Flexible Use
2	RD/BK	RD/BK
3	RD/YL/BL	RD/BK/GNYE
3a	-	RD/YL/BL
4	RD/YL/BL/BK	RD/YL/BL/GNYE
4a	-	RD/YL/BL/BK
5	-	RD/YL/BL/BK/GY
6 and above	-	BK (with printed numbers)

Colour Codes for Twisted Pair as per DIN 47100

Each pair has an a-core and a b-core. The marking is repeated for the first time as from 23 pairs, and for the second time as from 45 pairs. The cores in pair from 6 to 22 are provided with bi colour strip with the first mentioned as major colour.

Pair No.	Colour of a-core	Colour of b-core	Pair No.	Colour of a-core	Colour of b-core
1	white	brown	13	white/black	brown/black
2	green	yellow	14	grey/green	yellow/grey
3	grey	pink	15	pink/green	yellow/pink
4	blue	red	16	green/blue	yellow/blue
5	black	violet	17	green/red	yellow/red
6	grey/pink	red/blue	18	green/black	yellow/black
7	white/green	brown/green	19	grey/blue	pink/blue
8	white/yellow	yellow/brown	20	grey/red	pink/red
9	white/grey	grey/brown	21	grey/black	pink/black
10	white/pink	pink/brown	22	blue/black	red/black
11	white/blue	brown/blue	23-44	see 1 -22	see 1-22
12	white/red	brown/red	45-66	see 1 -22	see 1-22

Colour Codes for Cores as per DIN 47100

(but differs from DIN as the core colour after 44th core shall be bi-colour insulation with the ring colour being the last).

Core No.	Colour	Core No.	Colour	Core No.	Colour	Core No.	Colour	Core No.	Colour
1	white	14	brown/green	27	grey/green	40	pink/red	53	white/grey/black
2	brown	15	white/yellow	28	yellow/grey	41	grey/black	54	grey/brown/black
3	green	16	yellow/brown	29	pink/green	42	pink/black	55	white/pink/black
4	yellow	17	white/grey	30	yellow/pink	43	blue/black	56	pink/brown/black
5	grey	18	grey/brown	31	green/blue	44	red/black	57	white/blue/black
6	pink	19	white/pink	32	yellow/blue	45	white/brown/black	58	brown/blue/black
7	blue	20	pink/brown	33	green/red	46	yellow/green/black	59	white/red/black
8	red	21	white/blue	34	yellow/red	47	grey/pink/black	60	brown/red/black
9	black	22	brown/blue	35	green/black	48	red/blue/black	61	black/white
10	violet	23	white/red	36	yellow/black	49	white/green/black		
11	grey/pink	24	brown/red	37	grey/blue	50	brown/green/black		
12	red/blue	25	white/black	38	pink/blue	51	white/yellow/black		
13	white/green	26	brown/black	39	grey/red	52	yellow/brown/black		

Max. DC Conductor Resistance for Copper Conductor

Max. DC Conductor resistance as per EN 60228/DIN VDE 0295/IS 8130 for conductor made of soft-annealed copper.

Nominal Cross-Section (mm²)	Max. D.C. Conductor resistance at 20°C (Ω/km)			
	Tin Coated Copper Conductor		Plain Copper Conductor	
	Class 2	Class 5+6	Class 2	Class 5+6
0.08	-	250.0	-	243.0
0.14	-	142.0	-	138.0
0.25	-	82.0	-	79.0
0.34	-	59.0	-	57.0
0.38	-	52.8	-	48.5
0.5	36.7	40.1	36	39.0
0.75	24.8	26.7	24.5	26.0
1	18.2	20.0	18.1	19.5
1.5	12.2	13.7	12.1	13.3
2.5	7.56	2.21	7.41	7.98
4	4.70	5.09	4.61	4.95
6	3.11	3.39	3.08	3.30
10	1.84	1.95	1.83	1.91
16	1.16	1.24	1.15	1.21
25	0.734	0.795	0.727	0.780
35	0.529	0.565	0.524	0.554
50	0.391	0.393	0.387	0.386
70	0.270	0.277	0.268	0.272
95	0.195	0.210	0.193	0.206
120	0.154	0.165	0.153	0.161
150	0.126	0.132	0.124	0.129
185	0.100	0.108	0.0991	0.106
240	0.0762	0.0817	0.0754	0.0801
300	0.0607	0.0654	0.0601	0.0641
400	0.0475	-	0.0470	-
500	0.0369	-	0.0366	-
630	0.0286	-	0.0283	-
800	0.0224	-	0.0221	-
1000	0.0177	-	0.0176	-

Note:
* 0.08 Sq. mm to 0.38 Sq. mm as per DIN VDE 0295 (Class 5/6)
* In accordance to
- IS 8130, Class 1, Plain and tin coated copper max up to and including 150 Sq. mm and 16 Sq. mm respectively- IEC 60228, Class 1, Plain and tin coated copper max up to and including 400 Sq. mm and 16 Sq. mm respectively- IS 8130, Class 2, Plain and tin coated copper from 1 Sq. mm to 1000 Sq. mm
- IEC 60228, Class 2, Plain and tin coated copper from 0.5 Sq. mm to 1000 Sq. mm
- IS 8130 and IEC 60228, Class 5 and 6, Plain and tin coated copper up to and including 630 Sq. mm and 300 Sq. mm respectively

Conductor Stranding (Metric)

Cross-Section (mm^2)	Multiwire Conductor	Several-wire Conductor	Fine-Wire Conductor	Extra-Fine Wire Conductor			
Class of Conductor	Class-2	Class-2	Class-5	Class-6	Class-6	Class-6	Class-6
0.14	-	-	8 x 0.15	18 x 0.10	18 x 0.1	36 x 0.07	72 x 0.05
0.25	-	-	14 x 0.15	32 x 0.10	32 x 0.1	65 x 0.07	128 x 0.05
0.34	-	7 x 0.25	19 x 0.15	42 x 0.10	42 x 0.1	88 x 0.07	174 x 0.05
0.38	-	7 x 0.27	19 x 0.16	19 x 0.16	64 x 0.1	100 x 0.07	194 x 0.05
0.5	7 x 0.30	7 x 0.30	16 x 0.20	28 x 0.15	96 x 0.1	131 x 0.07	256 x 0.05
0.75	7 x 0.37	7 x 0.37	24 x 0.20	42 x 0.15	128 x 0.1	195 x 0.07	384 x 0.05
1	7 x 0.43	7 x 0.43	32 x 0.20	56 x 0.15	192 x 0.1	260 x 0.07	512 x 0.05
1.5	7 x 0.52	7 x 0.52	30 x 0.25	84 x 0.15	320 x 0.1	392 x 0.07	768 x 0.05
2.5	7 x 0.67	19 x 0.41	50 x 0.25	140 x 0.15	512 x 0.1	651 x 0.07	1280 x 0.05
4	7 x 0.85	19 x 0.52	56 x 0.30	224 x 0.15	768 x 0.1	1040 x 0.07	-
6	7 x 1.05	19 x 0.64	84 x 0.30	192 x 0.20	1280 x 0.1	1560 x 0.07	-
10	7 x 1.35	49 x 0.51	140 x 0.30	320 x 0.20	2048 x 0.1	2600 x 0.07	-
16	7 x 1.7	49 x 0.65	126 x 0.40	512 x 0.20	3200 x 0.1	-	-
25	7 x 2.13	84 x 0.62	196 x 0.40	800 x 0.20	-	-	-
35	7 x 2.52	133 x 0.58	276 x 0.40	1120 x 0.20	-	-	-
50	19 x 1.83	133 x 0.69	396 x 0.40	705 x 0.30	-	-	-
70	19 x 2.17	189 x 0.69	360 x 0.50	990 x 0.30	-	-	-
95	19 x 2.52	259 x 0.69	480 x 0.50	1340 x 0.30	-	-	-
120	37 x 2.03	336 x 0.67	608 x 0.50	1690 x 0.30	-	-	-
150	37 x 2.27	392 x 0.69	750 x 0.50	2123 x 0.30	-	-	-
185	37 x 2.52	464 x 0.69	931 x 0.50	1470 x 0.40	-	-	-
240	37 x 2.87	627 x 0.70	1200 x 0.50	1905 x 0.40	-	-	-
300	61 x 2.50	790 x 0.70	1500 x 0.50	2385 x 0.40	-	-	-
400	61 x 2.89	-	2013 x 0.50	-	-	-	-
500	61 x 3.23	-	2562 x 0.50	-	-	-	-
630	91 x 2.97	-	3416 x 0.50	-	-	-	-

Current Rating Conversion Factor for Deviating Ambient Temperature

Conversion factors, used to the current ratings data in tables of the following pages.

Conversion factors for Deviating Ambient Temperature

Permissible Operating Temperature	40°C	60°C	70°C	80°C	85°C	90°C
Ambient Temperature°C	Conversion Factors					
10	1.73	1.29	1.22	1.18	1.17	1.15
15	1.58	1.22	1.17	1.14	1.13	1.12
20	1.41	1.15	1.12	1.1	1.09	1.08
25	1.22	1.08	1.06	1.05	1.04	1.04
30	1.00	1.00	1.00	1.00	1.00	1.00
35	0.71	0.91	0.94	0.95	0.95	0.96
40	-	0.82	0.87	0.89	0.90	0.91
45	-	0.71	0.79	0.84	0.85	0.87
50	-	0.58	0.71	0.77	-	0.82
55	-	0.41	0.61	0.71	-	0.76
60	-	-	0.5	0.63	-	0.71
65	-	-	0.35	0.55	-	0.65
70	-	-	-	0.45	-	0.58
75	-	-	-	0.32	-	0.5
80	-	-	-	-	-	0.41
85	-	-	-	-	-	0.29

Conversion Temperature for Heat-Resistant Cables

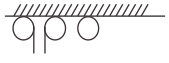
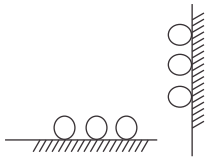
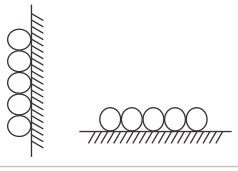
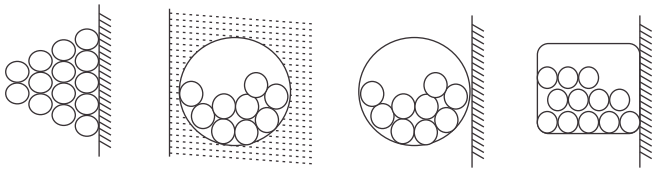
Permissible Operating Temperature	80°C	90°C	110°C	135°C	180°C
Ambient Temperature°C	Conversion Factors				
bis 50	1.00	1.00	1.00	1.00	1.00
55	0.91	0.94	1.00	1.00	1.00
60	0.82	0.87	1.00	1.00	1.00
65	0.71	0.79	1.00	1.00	1.00
70	0.58	0.71	1.00	1.00	1.00
75	0.41	0.61	1.00	1.00	1.00
80	-	0.50	1.00	1.00	1.00
85	-	0.35	0.91	1.00	1.00
90	-	-	0.82	1.00	1.00
95	-	-	0.71	1.00	1.00

Conversion Temperature for Heat-Resistant Cables

Permissible Operating Temperature	80°C	90°C	110°C	135°C	180°C
Ambient Temperature°C	Conversion Factors				
100	-	-	0.58	0.94	1.00
105	-	-	0.41	0.87	1.00
110	-	-	-	0.79	1.00
115	-	-	-	0.71	1.00
120	-	-	-	0.61	1.00
125	-	-	-	0.50	1.00
130	-	-	-	0.35	1.00
135	-	-	-	-	1.00
140	-	-	-	-	1.00
145	-	-	-	-	1.00
150	-	-	-	-	1.00
155	-	-	-	-	0.91
160	-	-	-	-	0.82
165	-	-	-	-	0.71
170	-	-	-	-	0.58
175	-	-	-	-	0.41

Current Rating Conversion Factor for Different Installation Method

Current rating conversion factor for grouping on the wall, on the floor, in insulation tubes or in conduit and under the ceiling.

Number of multicore cables or number of a.c. or 3-phase circuits of single core cable.	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20
Installation method	Correction factors														
One layer under the ceiling with contact 	0,95	0,81	0,72	0,68	0,66	0,64	0,63	0,62	0,61	0,61	0,61	0,61	0,61	0,61	0,61
One layer under the ceiling, with a space equal to the outer diameter d 	0,95	0,85	0,85	0,85	0,85	0,85	0,85	0,85	0,85	0,85	0,85	0,85	0,85	0,85	0,85
One layer on the wall or on the floor with a space equal to the outer diameter d 	1,00	0,94	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90
One layer on the wall or on the floor with contact 	1,00	0,85	0,79	0,75	0,73	0,72	0,72	0,71	0,70	0,70	0,70	0,70	0,70	0,70	0,70
Bunched directly on the wall, on the floor, in insulating tubes or trunking or in the wall 	1,00	0,80	0,70	0,65	0,60	0,57	0,54	0,52	0,50	0,48	0,45	0,43	0,41	0,39	0,38

O Symbol for one single core or one multicore cable

Notes:

When these factors are to be applied of power ratings, the same type of cables and with equal loaded cores in the same installation method shall correspond. At the same time the cross-section are permitted to differ maximum one grade of cross-section.

If the actual horizontal-space between the adjacent cables is more than double of the outer diameter, no reduction factor is nesessary.

The same reduction factors are to be applied for grouping of two or three-core or multicore cables. For a system consisting of two or as well as three-core cables, firstly the total number of cables will be assumed as the number of circuits. For that the applicable factor is to be used either in the tables for two-cores loaded cables or the tables for three-cores loaded cables. If the grouping of single core cables consist of n loaded single core cables, the rating factor shall be considered for n/2 or n/3 circuits and applied to the current carrying capacity of two or three loaded cores.

Current Rating Conversion Factor for Different Numbers of Loading Cores in Multicore Cables

(Conversion factors for multicore cables with cross-section up to 10 mm²).

Number of Loaded Cores	Conversion Factros
5	0.75
7	0.65
10	0.55
14	0.5
19	0.45
24	0.4
40	0.35
61	0.30

Current Rating Conversion Factor for Reeled Cables

Number of layers on drums	1	2	3	4	5
Conversion factors	0.80	0.61	0.49	0.42	0.38

Note : For spiral-reeling the conversion factor 0.80.

Current Rating - Single Core Cables for Flexible Application as per IS 694

(for electric panels and switchboards for voltage up to and including 1100V).

Nominal Cross-Section Area of Conductor (mm^2)	Max. Current Capacity (A) for Class 5 Conductor
0.5	5
0.75	8
1	13
1.5	17
2.5	24
4	30
6	38
10	52
16	70
25	88
35	112
50	146
70	216
95	262
120	310
150	355
185	415
240	500
300	550

Current Rating & Voltage Drop for Stranded Multicore Cables as per IS 694

(for fixed wiring for voltage up to and including 1100V).

Nominal Cross-Section Area of Conductor (mm^2)	2 Core & 3 Core Cable for Single Phase AC/DC		3 Core & 4 Core Cable for Three Phase AC	
	Max. Current Capacity (A)	Voltage Drop (mV/A/m)	Max. Current Capacity (A)	Voltage Drop (mV/A/m)
1	14	40	13	35
1.5	19	27	18	23
2.5	26	16	24	14
4	32	10	30	8.8
6	41	6.8	39	5.9
10	54	4	50	3.5
16	74	2.6	68	2.2
25	94	1.6	85	1.4
35	118	1.2	105	1.0
50	146	0.97	130	0.84
70	219	0.7	195	0.62
95	280	0.59	246	0.48
120	326	0.48	284	0.42

Current Rating & Voltage Drop for Flexible Multicore Cables as per IS 694

(for flexible application especially in electric panels and switchboard wiring for voltage up to and including 1100V).

Nominal Cross-Section Area of Conductor (mm^2)	2 Core & 3 Core Cable for Single Phase AC/DC		3 Core & 4 Core Cable for Three Phase AC	
	Max. Current Capacity (A)	Voltage Drop (mV/A/m)	Max. Current Capacity (A)	Voltage Drop (mV/A/m)
0.5	5	83	4	72
0.75	8	56	7	48
1	13	40	12	35
1.5	17	27	16	23
2.5	24	16	22	14
4	30	10	28	8.8
6	38	6.8	36	5.9
10	52	4	48	3.5
16	70	2.6	64	2.2
25	88	1.6	80	1.4
35	112	1.2	100	1.0
50	146	0.97	130	0.84
70	216	0.7	192	0.62
95	262	0.59	230	0.48
120	310	0.48	270	0.42
150	355	0.38	305	0.34
185	415	0.34	360	0.3
240	500	0.28	430	0.26
300	550	0.22	470	0.18

Current Rating Conversion Factor for Deviating Ambient Temperature (IS 694)

Multiply the current carrying capacity of the cable by the factors given below for various ambient temperature.

Ambient Temperature (°C)	Derating Factor
30	1.09
40	1.00
45	0.78
50	0.70
55	0.60
60	0.48

Current Rating for H05V-K / H07V-K/H05Z1-K / H07Z1-K

Nominal Cross-Section Area of Conductor (mm²)	Installation in Thermally Insulated Walls		Installation in Insulating Tubes (on a wall)		In Free Air
Number of Loaded Cores Cross-section, (mm²)	2	3	2	3	1
	Current ratings in Ampere (A)				
1.5	14.5	13.5	17.5	15.5	24
2.5	19.5	18	24	21	32
4	26	24	32	28	42
6	34	31	41	36	54
10	46	42	57	50	73
16	61	56	76	68	98
25	80	73	101	89	129
35	99	89	125	110	158
50	119	108	151	134	198
70	151	136	192	171	245
95	182	164	232	207	292
120	210	188	269	239	344
150	240	216	-	-	391
185	273	245	-	-	448
240	320	286	-	-	528

Note : Conversion factors for deviating ambient temperature, grouping, installation under the ceiling, multicore cables and insulated wires - see Table 4-1. 5-1 & 5-2 in accordance to DIN VDE 0298 Part 4.

Current rating for H05V2-K / H07V2-K / BS 6231 / Trirated cable

Nominal Cross-Section Area (mm²)	Max. Current Rating (A)	Voltage Drop (mV/A/m)
0.50	11	46.0
0.75	14	31.0
1.00	17	22.0
1.50	21	15.0
2.50	30	9.1
4.00	41	5.7
6.00	53	3.8
10.00	75	2.2
16.00	100	1.4
25.00	136	0.9
35.00	167	0.6

Current ratings are based on a conductor operating temperature of 85°C and an ambient air temperature of 45°C and assumes single cable isolated in free air.

Current Rating conversion factor for H05V2-K / H07V2-K / BS 6231 / Trirated cable

Multiply the current carrying capacity of the cable by the factors given below for various ambient temperature.

Ambient Temperature (°C)	Derating Factor
45°C	1.0
50°C	0.97
55°C	0.90
60°C	0.82
65°C	0.73
70°C	0.63
75°C	0.52

Where cables are to be grouped, the following factors should be applied :

Number of Cables in Group	Reduction Factor
2	0.80
3	0.70
4	0.65
5	0.60
6	0.56
7	0.53
8	0.50

Current Rating - H05Z-K / H07Z-K / H05Z-R / H07Z-R / 6491B

Current Carrying Capacity (Amperes)

Conductor Cross-Sectional area	Reference Method A (Enclosed in Conduits in Thermally Insulating Wall, etc.)		Reference Method B (Enclosed in Conduits on a Wall or in Trunking, etc.)		Reference Method C (Clipped Direct)		Reference Method F (in Free Air or on Perforated Cable Tray etc. Horizontal or Vertical etc.) Touching			Reference Method G (in free air) Spaced by One Cable Diameter	
	2 Cable, Single-Phase A.C. or D.C.	3 or 4 Cables, Three-Phase A.C	2 Cable, Single-Phase A.C. or D.C.	3 or 4 Cables, Three-Phase A.C.	2 Cable, Single-Phase A.C. or D.C. Flat and Touching	3 or 4 Cables, Three-Phase A.C. Flat and Touching or Trefoil	2 Cable, Single-Phase A.C. or D.C. Flat	3 Cables. Three-Phase A. C. Flat	3 Cables, Three-Phase A. C. Trefoil	2 Cable, Single-Phase A.C.or D.C. or 3 Cables. Three-Phase A. C. Flat	
										Horizontol	Vertical
1	2	3	4	5	6	7	8	9	10	11	12
(mm^2)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
1	14	13	17	15	19	17.5	-	-	-	-	-
1.5	19	17	23	20	25	23	-	-	-	-	-
2.5	26	23	31	28	34	31	-	-	-	-	-
4	35	31	42	37	46	41	-	-	-	-	-
6	45	40	54	48	59	54	-	-	-	-	-
10	61	54	75	66	81	74	-	-	-	-	-
16	81	73	100	88	109	99	-	-	-	-	-
25	106	95	133	117	143	130	161	141	135	182	161
35	131	117	164	144	176	161	200	176	169	226	201
50	158	141	198	175	228	209	242	216	207	275	246
70	200	179	253	222	293	268	310	279	268	353	318
95	241	216	306	269	355	326	377	342	328	430	389
120	278	249	354	312	413	379	437	400	383	500	454
150	318	285	393	342	476	436	504	464	444	577	527
185	362	324	449	384	545	500	575	533	510	661	605
240	424	380	528	450	644	590	679	634	607	781	719
300	486	435	603	514	743	681	783	736	703	902	833
400	-	-	683	584	868	793	940	868	823	1085	1008
500	-	-	783	666	990	904	1083	998	946	1253	1169
630	-	-	900	764	1130	1033	1254	1151	1088	1454	1362
800	-	-	-	-	1288	1179	1358	1275	1214	1581	1485
1000	-	-	-	-	1443	1323	1520	1436	1349	1775	1671

Ambient temperature: 30°C Conductor operating temperature: 90°C

Notes:

1 Where a conductor operates at a temperature exceeding 70°C it must be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see Regulation 512.1.2).

2 Where cables in this table are connected to equipment or accessories designed to operate at a temperature not exceeding 70°C, the current ratings given in the equivalent table for 70°C thermoplastic insulated cables (Table 4DIA) must be used (see also Regulation 523.1).

3 The above table is in accordance with Table 4E1A of the 17th Edition of IEE Wiring Regulations.

Voltage Drop - H05Z-K / H07Z-K / H05Z-R / H07Z-R / 6491B

Voltage Drop (per ampere per meter).

Conductor Cross-Sectional area	2 Cable D.C.	2 Cables, Single-Phase A.C.									3 or 4 Cables, Three-Phase A.C.									
		Reference Method A & B (Enclosed in Conduit or Trunking)			Reference Methods C, F & G (Clipped Direct, on Tray or in Free Air)						Reference Method A & B (Enclosed in Conduit or Trunking)			Reference Method C, F & G (Clipped Direct, on Tray or in Free Air)						
					Cable Touching			Cable Spaced						Cables Touching, Trefoil			Cables Touching, Flat			Cables Spaced*, Flat		
1	2	3			4			5			6			7			8			9		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)		
1	46	46			46			46			40			40			40			40		
1.5	31	31			31			31			27			27			27			27		
2.5	19	19			19			19			16			16			16			16		
4	12	12			12			12			10			10			10			10		
6	7.9	7.9			7.9			7.9			6.8			6.8			6.8			6.8		
10	4.7	4.7			4.7			4.7			4.0			4.0			4.0			4.0		
16	2.9	2.9			2.9			2.9			2.5			2.5			2.5			2.5		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.85	1.85	0.31	1.90	1.85	0.190	1.85	1.85	0.28	1.85	1.6	0.27	1.65	1.6	0.165	1.6	1.6	0.190	1.6	1.60	0.27	1.65
35	1.35	1.35	0.29	1.35	1.35	0.180	1.35	1.35	0.27	1.35	1.15	0.25	1.15	1.15	0.155	1.15	1.15	0.180	1.15	1.15	0.26	1.2
50	0.99	1.00	0.29	1.05	0.99	0.180	1.00	0.99	0.27	1.00	0.87	0.25	0.90	0.86	0.155	0.87	0.86	0.180	0.87	0.86	0.26	0.89
70	0.68	0.70	0.28	0.75	0.68	0.175	0.71	0.68	0.26	0.73	0.6	0.24	0.65	0.59	0.150	0.61	0.59	0.175	0.62	0.59	0.25	0.65
95	0.49	0.51	0.27	0.58	0.49	0.170	0.52	0.49	0.26	0.56	0.44	0.23	0.5	0.43	0.145	0.45	0.43	0.170	0.46	0.43	0.25	0.49
120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.39	0.25	0.47	0.35	0.23	0.42	0.34	0.140	0.37	0.34	0.165	0.38	0.34	0.24	0.42
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.32	0.25	0.41	0.29	0.23	0.37	0.28	0.140	0.31	0.28	0.165	0.32	0.28	0.24	0.37
185	0.25	0.27	0.26	0.37	0.26	0.165	0.30	0.25	0.25	0.36	0.23	0.23	0.32	0.22	0.140	0.26	0.22	0.165	0.28	0.22	0.24	0.33
240	0.190	0.21	0.26	0.33	0.20	0.160	0.25	0.195	0.25	0.31	0.185	0.22	0.29	0.170	0.140	0.22	0.170	0.165	0.24	0.170	0.24	0.29
300	0.155	0.175	0.25	0.31	0.160	0.160	0.22	0.155	0.25	0.29	0.150	0.22	0.27	0.140	0.140	0.195	0.135	0.160	0.21	0.135	0.24	0.27
400	0.120	0.140	0.25	0.29	0.130	0.155	0.20	0.125	0.24	0.27	0.125	0.22	0.25	0.110	0.135	0.175	0.110	0.160	0.195	0.110	0.24	0.26
500	0.093	0.120	0.25	0.28	0.105	0.155	0.185	0.098	0.24	0.26	0.100	0.22	0.24	0.090	0.135	0.160	0.880	0.160	0.180	0.085	0.24	0.25
630	0.072	0.100	0.25	0.27	0.086	0.155	0.175	0.078	0.24	0.25	0.088	0.21	0.23	0.074	0.135	0.150	0.710	0.160	0.170	0.680	0.23	0.24
800	0.056		-		0.072	0.150	0.170	0.064	0.24	0.25		-		0.062	0.130	0.145	0.059	0.155	0.165	0.055	0.23	0.24
1000	0.045		-		0.063	0.150	0.165	0.054	0.24	0.24		-		0.055	0.130	0.140	0.050	0.155	0.165	0.047	0.23	0.24

Conductor Operating Temperature: 90°C.

r = Resistive Component.

x = Reactive Component.

z = Impedance Value.

*Spacings larger than those specified in Method 12 (see table 4A of the 17th Edition of IEE Wiring Regulations) will result in larger volt drop.

The above table is in accordance with Table 4E1B from the 17th Edition of IEE Wiring Regulations.

Current Rating - JB-500 / H03 / H05V2V2H2-F & H03 / H05V2V2-F / JB-H

Conductor Cross-Sectional Area (mm²)	Current-Carrying Capacity	
	Single-Phase A.C. (A)	Three-Phase A.C. (A)
0.5	3	3
0.75	6	6
1	10	10
1.25	13	-
1.5	16	16
2.5	25	20
4	32	25

The above table is in accordance with Table 4F3A of the 17th Edition of IEE Wiring Regulations.

Voltage Drop for JB-500 / H03 / H05V2V2H2-F & H03 / H05V2V2-F / JB-H

Conductor Cross-Sectional Area (mm²)	Current-Carrying Capacity	
	Single-Phase A.C. (mV/A/m)	Three-Phase A.C. (mV/A/m)
0.5	93	80
0.75	62	54
1	46	40
1.25	37	-
1.5	32	27
2.5	19	16
4	12	10

Conductor operating temperature: 60°C*

*The tabulated values above are for 60°C thermoplastic or thermosetting insulated flexible cords.
For other types of flexible cords they are to be multiplied by the following factors: for thermoplastic or thermoset insulation at 90°C: 1.09, at 105°C: 1.31.
The above table is in accordance with Table 4F3B of the 17th Edition of IEE Wiring Regulations.

Current rating conversion factor for JB-500 / H03 / H05V2V2-F & H03 / H05V2V2-F / JB-H

Multiply the current carrying capacity of the cable by the factors given below for various ambient temperature.

Ambient Temperature (°C)	Reduction Factor
35	0.91
40	0.82
45	0.71
50	0.58
55	0.41

Current Rating - JB-750, JB-BK 0.6 / 1.0 kV, JZ-BK 0.6 / 1.0 kV

Current Carrying Capacity (Amperes)

Conductor Cross Sectional Area	Reference Method A (Enclosed in Conduits in Thermally Insulated Wall, etc.)		Reference Method B (Enclosed in Conduits on a Wall or in Trunking, etc.)		Reference Method C (Clipped Direct)		Reference Method E (in Free Air or on Perforated Cable Tray etc. Horizontal or Vertical)	
	1 Two-Core Cable*, Single-Phase A.C. or D.C.	1 Three-Core Cable*, or 1 Four-Core Cable, Three-Phase A.C.	1 Two-Core Cable*, Single-Phase A.C. or D.C.	1 Three-Core Cable*, or 1 Four-Core Cable, Three-Phase A.C.	1 Two-Core Cable*, Single-Phase A.C. or D.C.	1 Three-Core Cable*, or 1 Four-Core Cable, Three-Phase A.C.	1 Two-Core Cable*, Single-Phase A.C. or D.C.	1 Three-Core Cable*, or 1 Four-Core Cable, Three-Phase A.C.
1	2	3	4	5	6	7	8	9
(mm^2)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
1	11	10	13	11.5	15	13.5	17	14.5
1.5	14	13	16.5	15	19.5	17.5	22	18.5
2.5	18.5	17.5	23	20	27	24	30	25
4	25	23	30	27	36	32	40	34
6	32	29	38	34	46	41	51	43
10	43	39	52	46	63	57	70	60
16	57	52	69	62	85	76	94	80
25	75	68	90	80	112	96	119	101
35	92	83	111	99	138	119	148	126
50	110	99	133	118	168	144	180	153
70	139	125	168	149	213	184	232	196
95	167	150	201	179	258	223	282	238
120	192	172	232	206	299	259	328	276
150	219	196	258	225	344	299	379	319
185	248	223	294	255	392	341	434	364
240	291	261	344	297	461	403	514	430
300	334	298	394	339	530	464	593	497
400	-	-	470	402	634	557	715	597

Ambient Temperature: 30°C Conductor Operating Temperature: 70°C

The above table is in accordance with DIN VDE 0298 Part 4.

Voltage Drop - JB-750, JB-BK 0.6 / 1.0 kV, JZ-BK 0.6 / 1.0 kV

Voltage Drop (per ampere per meter)

Conductor Cross-Sectional Area	2 Cables D.C.	Two Core Cables, Single-Phase A.C.			Three or Four Core Cables, Three-Phase A.C.		
1	2	3			4		
(mm²)	(mV/A/m)	(mV/A/m)			(mV/A/m)		
1	44	44			44		
1.5	29	29			29		
2.5	18	18			18		
4	11	11			11		
6	7.3	7.3			7.3		
10	4.4	4.4			4.4		
16	2.8	2.8			2.8		
		r	x	z	r	x	z
25	1.75	1.75	0.170	1.75	1.50	0.145	1.5
35	1.25	1.25	0.165	1.25	1.10	0.145	1.1
50	0.93	0.93	0.165	0.94	0.80	0.140	0.81
70	0.63	0.63	0.160	0.65	0.55	0.140	0.57
95	0.46	0.47	0.155	0.50	0.41	0.135	0.43
120	0.36	0.38	0.155	0.41	0.33	0.135	0.35
150	0.29	0.30	0.155	0.34	0.26	0.130	0.29
185	0.23	0.25	0.150	0.29	0.21	0.130	0.25
240	0.18	0.190	0.150	0.24	0.17	0.130	0.21
300	0.145	0.155	0.145	0.21	0.14	0.130	0.185
400	0.105	0.115	0.145	0.185	0.10	0.125	0.160

Types of Abbreviations

CONTROL CABLES 1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ x8☐	HARMONISED CABLES 1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ x8☐ 9☐	TELEPHONE CABLES AND LEADS 1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ x8☐ 9☐ 10☐
1. BASIC TYPE	**1. BASIC TYPE**	**1. BASIC TYPE**
N-VDE STANDARD	H - Harmonised Type	A - Outside Cable
(N) OR X - as per VDE Standard	A - National Typer	G - Mine Cable
2. INSULATION MATERIAL	**2. RATED VOLTAGE**	J - Installation Cable
Y - Thermoplastic Resins	01 - 100/100V	Li - Rubber Sheathed Cable
X - Crosslinked Thermoplastic Resins	03 - 300/300V	S - Jumper Cable
G - Elastomers	05 - 300/500V	**2. ADDITIONAL INFORMATION**
HX - Halogen Free Material	07 - 450/750V	B - Lightning Protection Make Up
3. CABLE DESIGNATION	**3. INSULATION MATERIAL**	J - Installation Cable Induction Protection
A - Cored Cable	V - PVC	E - Electronics
D - Solid Wire	V2 - PVC + 90°C	**3. INSULATION MATERIAL**
AF - Fine Wired Cored Cable	V3 - PVC Cold Flexible	Y - PVC
F - Socket Core	B - Ethylenepropylene Rubber	2Y - Polyethylene
L - Fluorescent Tube Cable	E - Polyethylene PE	O2Y - Cellular PE
LH - Connecting Cable Light Mechanical Load	X - XLPE, Crosslinked Polyethylene	5Y - PTFE
MH - Connecting Cable Medium Mechanical Load	R - Rubber	6Y - FEP
SH - Connecting Cable Heavy Mechanical Load	S - Silicon Rubber	7Y - ETFE
SSH - Connecting Cable Special Load	**4. OUTER/INNER SHEATH MATERIAL**	P - Paper
SL - Control Cable/Welding Cable	V - PVC	**4. MAKE UP FEATURES**
S - Control Cable	V2 - PVC + 90°C	F - Petroleum Jelly Filling
LS - Light Control Cable	V3 - PVC Cold Flexible	L - Aluminium Sheath
FL - Flat Cable	V5 - PVC with Enchanced Oil Resistance	LD - Corrugated AL Sheath
Si - Silicone Cable	R - Rubber	(L) - Aluminium Strip
Z - Twin Cable	N - Chloroprene Rubber	(ST) - Metal Foil Screen
GL - Glass Filament	Q - Polyurethane	(K) - Copper Strip Screen
Li - Stranded Core to VDE 0812	J - Glass Fiber Braid	(C) - Copper Braid Screen
LiF - Stranded Core to VDE 0812 Superfined Wire	T - Textile braid	(Z) - Steel Wire Braid
4. SPECIAL FEATURES	**5. SPECIAL FEATURES**	W - Corrugated Steel Sheath
T - Support Wire	C4 - Copper Screen Braiding	M - Lead Sheath
O - Enchanced Oil Resistance	H - Flat Cable, Separable	Mz - Special Lead Sheath
U - Flame Retardant	H2 - Flat Cable, Non Separable	b - Armouring
w - Heat Resistant, Weather Resistant	H6 - Flat Cable, Non Separable for Lifts	c - Jute Sheath + Ground
	H8 - Helical/Spiral Cable	E - Ground Layer + Strip

CONTROL CABLES 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ x8 ☐	HARMONISED CABLES 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ x8 ☐ 9 ☐	TELEPHONE CABLES AND LEADS 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ x8 ☐ 9 ☐ 10 ☐
5. SHEATH MATERIAL	**6. CONDUCTOR TYPE**	**6. NUMBER OF ELEMENTS**
Same as given in Insulation Material	U - Single Wire	..number of stranding elements/cores
FE - Insulation re	R - Multiwire	**7. STRANDING ELEMENTS PAIRS**
C - Screen Braiding	K - Fine Wire (Static)	1 - Single core
D - Screening as Envelope with Copper Wire	F - Fine Wire (Flexible)	2 - Pair
S - Steel Wire Braid as Mechanical Protection	h - Superfine Wire	**8. CONDUCTOR DIAMETER**
5. SHEATH	Y - Tinsel Wire	... in mm
Y -Thermoplastic Resin	D - Fine Wire Core for Welding Cable	**9. STRANDING ELEMENTS**
X - Crosslinked Thermoplastic Resins	E - Superfine Core for Welding Cable	F - Star Quad (Railway)
G - Elastomers	**7. NUMBER OF CORES**	St - Star Quad (Phantom)
HX - Halogen Free Material	**8. PROTECTIVE CONDUCTOR**	Stl - Star Quad (Trunk Cable)
P - PUR (Polyurethane)	X - Without Protective Conductor	StIII - Star Quad (Local Cable)
6. PROTECTIVE CONDUCTOR	G - With Protective Conductor	TF - Star Quad for TF
O - Without Protective Conductor	**9. CONDUCTOR CROSS SECTION**	S - Signal Cable (Railway)
J - Without Protective Conductor	..mm^2	PiMF - Screened Pair in Metal Foil
7. NUMBER OF CORES	**Example- H05 VV-F**	**10. TYPE OF STRANDING**
8. CONDUCTOR CROSS SECTION		Lg - Twisted in Layers
..mm^2		Bd - Twisted in Bundles
Example- NHSTOUU		**Example- A2Y(L)2Y 6X2X0.8 Bd**

Cable Handling & Storage Guideline

Although RR Kabel's cables are durable & high quality products relatively unaffected by ambient conditions, they should be handled and stored properly to avoid incidental damage.

Reel Handling:

Upon receipt, and before acceptance of a shipment, all reels should be inspected for evidence of damage during shipment.

This damage would include broken flanges, damaged wrapping or lagging, interlocked flanges, reels broken loose from their ties or blocking, etc. Any signs of such damage should immediately be reported to the carrier. If the protective wrapping or lagging is removed to inspect for possible damage during shipment, it should be replaced prior to placing the reel into long term storage.

Unloading of reels from the delivery truck must be accomplished in a manner that prevents the transfer equipment from coming into contact with either the cable itself or the protective covering over the reel. A crane may be used to lift reels using a steel shaft of sufficient strength placed through the arbor holes. The shaft must be lifted using a spreader bar to prevent the lifting cable or chain from pressing against the reel flanges (see Figure 1). The force exerted by improperly positioned slings has been known to break reel flanges, resulting in damage to the cable.

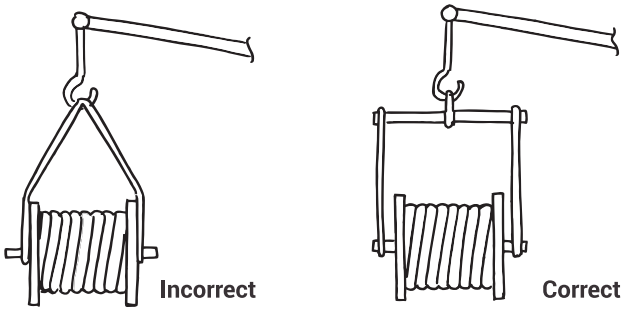


Figure-1

If a fork lift truck is used, the forks must be placed at a 90° angle to the flanges, and must be long enough to make contact with both flanges (see Figure 2). Under no circumstances should the forks make direct contact with the cable or protective covering.

Some facilities may have an inclined ramp available for unloading reels. This ramp must be wide enough to contact both reel flanges with an adequate safety margin. The method used to stop the reel should ensure that the cable or protective covering does not come into contact with any solid object, and that the force transmitted to the reel flanges is not sufficient to damage them.

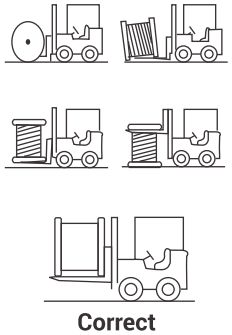


Figure-2

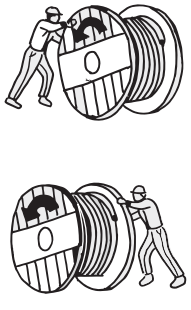


Figure-3

Reels must not be dropped from the delivery vehicle to the ground under any circumstances. When a reel is rolled from one point to another, care must be taken to see that the reel does not straddle objects such as rocks, pipes, or wooden blocks which could damage the cable or protective covering. A reel should always be rolled in the direction indicated by arrows stenciled on the reel. By doing so, you will ensure that the reel is rolled in such a direction as to tighten the cable on the reel. Rolling in the other direction will tend to loosen the turns of cable on the reel (see Figure 3). This can result in turns crossing over one another and subsequently causing kinks in the cable as it is removed from the reel

Storage Conditions:

Reels should be stored in an area reserved for this purpose. The location must be accessible to forklifts and trucks, but removed from areas of constant traffic. If available space prohibits separation, suitable barriers should be erected to prevent damage from moving equipment. Reels must be stored in an area where they cannot be damaged by falling objects, chemical spills including oil and grease, open flames or welding operations, and excessive heat.

It is also advisable to secure the designated area to prevent theft or vandalism. Whenever possible, reels should be stored indoors to provide maximum protection. If the cable must be stored outside, the reels should be placed on a hard, well-drained surface that will prevent the reel flanges sinking into it and allowing the weight of cable and reel to rest on the cable surface. It is recommended, but not required, that cable intended for storage longer than six months have overhead protection or be covered with a suitable material such as canvas or opaque polyethylene to avoid prolonged exposure to sunlight.

If a portion of the cable is used, the open end of the cable remaining on the reel should immediately be re-sealed in a manner equivalent to the factory seal to prevent the entrance of moisture. After re-sealing, the cut end should be fixed to the inside edge of the reel flange to prevent the end from extending beyond the flanges during reel movement.

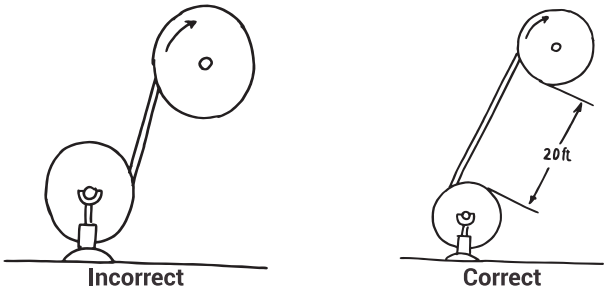


Figure-4

Reels should always be stored with their flanges vertical. They must not be stored on their sides or stacked one on top of another. Care should be taken that reels cannot roll into one another, so that the flange of one reel hits the surface of cable on another reel. If necessary, reel flanges should be chocked to prevent movement.

Removal of Cable from Reel:

Considerable care must be exercised in uncoiling or unreeling flexing cables since their performance is substantially influenced by the way in which they are handled. Reverse bending or twisting can cause internal

damage which can adversely affect the life of the cable. Reels should be placed on jacks or stands with a bar through the arbor holes. This will allow the reel to be turned easily, and the cable to be paid -out. Cables can be paid-out from the bottom or the top of the reel, but if they are to be removed from a shipping reel to be installed on another reel, they should be paid-out in such a manner as to follow the natural cast in the cable. Reverse bending should be avoided (see Figure 4). If possible, the distance between pay-off reel and take-up reel should be at least 20 feet to allow the cable to straighten before it is taken up on the application reel. Cable in coils should be handled in a similar manner. This can be achieved by supporting the coil in a vertical plane and rotating it by hand as the cable is carefully uncoiled (see Figure 5).

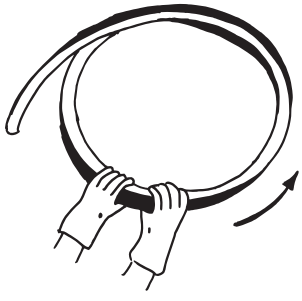
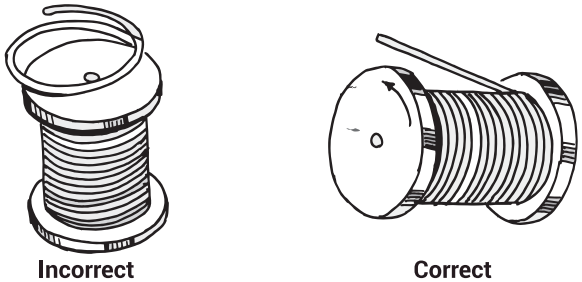


Figure-5

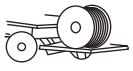
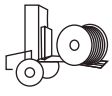
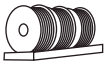
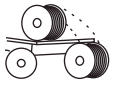
The cable should never be pulled over the flange of a reel, or pulled off the side of a coil, since this will introduce a twist in the cable (see Figure 6).



Incorrect **Correct**

Figure-6

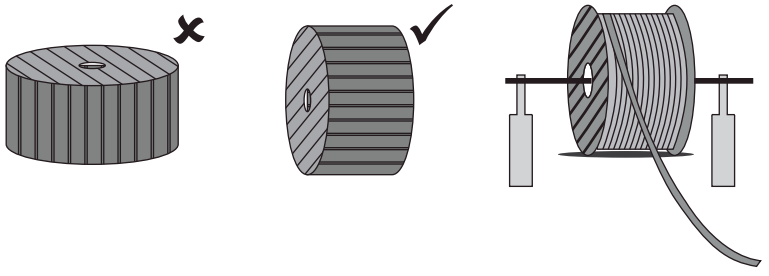
Cable Handling Summary:

YES	NO
 Cradle both reel flanges between forks	 Do not lift by top flanges Cable or reel will be damaged
 Reels can be hoisted with a shaft extended through both flanges	 Use a spreader bar, to prevent bending the reek flanges and mashing the cable
 Place spacers under the bottom flanger and between reels to createa space to insert the forks.	 Opened heavy reels. Will often arrive damaged. Refuse or receive subject to inspection for hidden damage.
 Lower reels from truck hydrilla gate, hoist or lift, LOWER CAREFULLY	 Never allow forks to touch cable surface or reel wrap.
 Always load with flanges on edge and chock and block securely.	 Never drop reels.

Remove all nails and staples from reel flanges before moving a reel before moving a reel, and avoid all objects that could crush damage or impact the cable while it is being moved. NEVER use the cable as a means to move a reel. When re-reeling, observe recommended bending radii, use swivels to prevent twisting and avoid overruns.

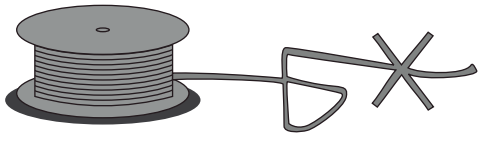
Cable Laying Guideline

For laying of cable, special care is to be taken to prevent sharp bending, kinking and twisting. Cable should be unwound from drum by proper mounting the cable drum on a cable wheel stand. Making sure that the spindle is strong enough to carry the weight without bending and that it is lying horizontally in the bearings so as to prevent the drum creeping to one side or the other while it is rotating.

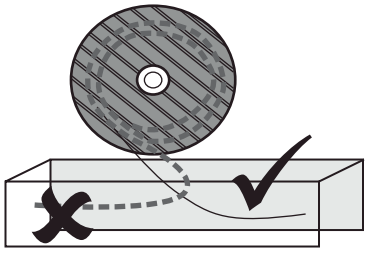


Provision should be made to avoid further rolling & buckling of the cable. A simple wooden plank can serve this purpose.

Cable must be pulled from the top only.



This is the incorrect way of pulling the cable & will cause kinks & twist in cable. **Shall be avoided.**



Cable must not be pulled across hard and sharp objects to avoid damage to the cable.

Cable must be laid in ducts or trenches as shown.

The technical data mentioned in this book has been derived to have the best product in place. Having known that Innovation has always been the base for R R Kabel products, the technical data would vary from time to time. Hence, current details should always be checked with R R Kabel for accuracy.

REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
RoHS = Restriction of Hazardous Substances | CE = Conformité Européenne
ISI = Indian Standards Institute

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KĀBEL

Building Wires

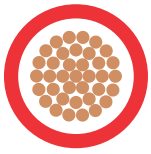
R R Kabel is a part of R R Global, which is one of the leading conglomerates in the electrical sector. Working with determination to produce products with best technologies, R R Kabel has always made the latest advances in wire design and engineering. Today, R R Kabel offers the latest and widest range of premium wires & cables for various residential, commercial, industrial and infrastructure purposes.

For us at R R Kabel think wires are not just objects, we believe that wires play the role of nerves in the body. When you believe this, you have designers, engineers, fabricators, and other partners who need to have incredible design and commitment to pursue and create a product that can be trusted, and relied upon.

We believe that the future of design lies with innovation that instigates one to push boundaries, eliminate borders between sciences. The materials we use may sometimes be unique, sometimes experimental, many are collaborations but they all represent extraordinary research and dedication by engineers, designers and visionaries.

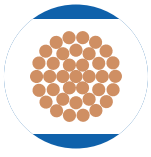
R R Kabel is constantly emerging with new marketing and technical perspectives that are globally significant, we are aiming to create significance of our multi-faceted range when designing making it better environment and the customers.

BUILDING WIRES



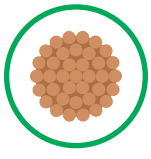
Product Name
Superex HR FR

Page No.
6



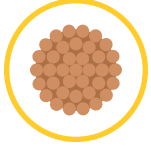
Product Name
Flamex FR LSH

Page No.
7



Product Name
Unilay HR FR

Page No.
8



Product Name
Firex HFFR

Page No.
9

Product Name
Ratna Co-X

Page No.
10 - 11

Product Name
Ratnacom

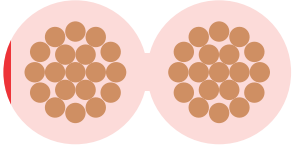
Page No.
12 - 13

Product Name
Ratnalan Cat 5e / 6

Page No.
14 - 15

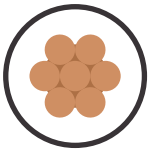
Product Name
CCTV Camera Cable

Page No.
16



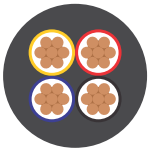
Product Name
Speaker Wire

Page No.
17



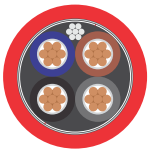
Product Name
Fixed Wire (IS 694)

Page No.
18 - 19



Product Name
Multicore Fixed Wire (IS 694)

Page No.
20 - 22



Product Name
Fire Alarm Cable

Page No.
23 - 25

CROSS SECTIONAL VIEW

IMPORTANT

• 42% of total fires occur due to POOR electrical installations.
• To ensure safety of your premises, make sure that the right MCB / ELCB are installed with **GOOD QUALITY WIRES**

WHAT TO LOOK OUT FOR IN YOUR BUILDING WIRES

1. Quality of Conductor

The wires should be made of electrolytic i.e. pure copper. This ensures that the current carrying capacity of the wire is optimum. Look for a wire that has the Copper Purity hologram on the pack.

2. Quality of Insulation

Copper heats up when electricity passes through it. This can cause melting and fusing of the insulation. In case of short circuit or fire, good insulation makes all the difference.

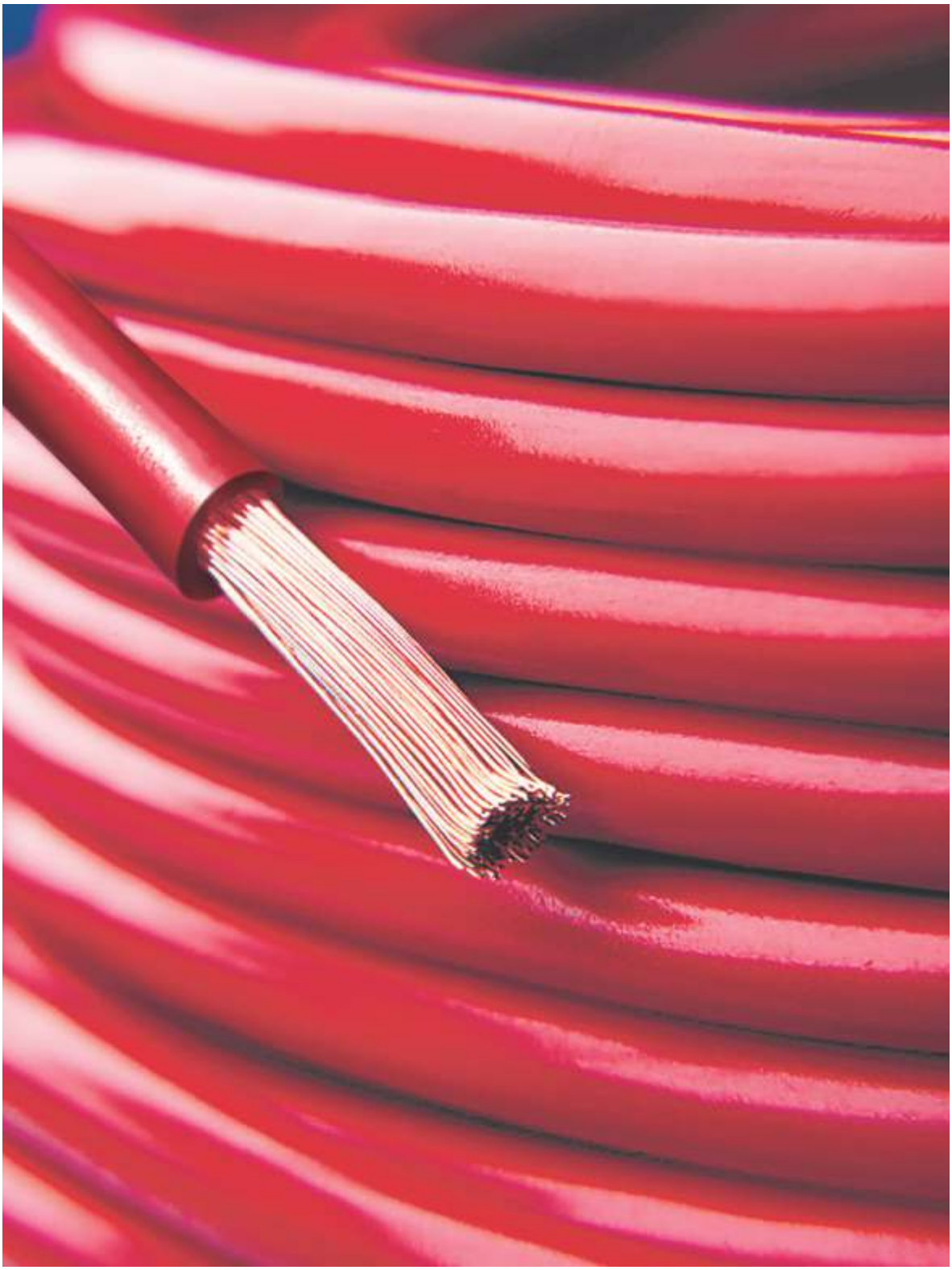
It fights the spread of fire and toxic smoke.
Good quality insulation protects wires, protects your home.

Check if the wire is -

• ISI Marked
• CE Marked
• REACH & RoHS compliant (means environment friendly)
• Minimum with HR FR insulation

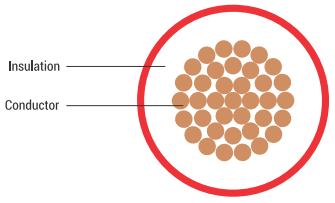
3. Resistance of the Wire

Resistance is a measure, which determines the amount of safe electric current a wire can safely carry. Hence all conductors used in cables should necessarily conform to the resistance parameters.



SUPEREX HR FR

REACH I RoHS I CE



India's 1st REACH and RoHS Compliant Cable | Heat Resistant and Flame Retardant Cable.

Application

Suitable for wiring in all types of residential and commercial infrastructure, where fire and electrical safety is utmost important.

Technical Data

Approvals : IS 694 marked, FIA/TAC

Voltage Grade : Up to and including 1100 V

Conductor : Thin strands of electrolytic copper are multi-drawn for uniformity of resistance, dimension and flexibility. The strands are twisted with high precision to impart circularity for the conductor.

Insulation : Specially formulated heat resistant & flame retardant PVC insulation is used. The HR FR property retards the propagation of flame without compromising safety.

Insulation Conformity : IS 5831, Type C - HR 85°C + FR

Colours : Red, yellow, blue, black, green, grey & white

Marking : The cables are printed with marking of 'SUPEREX HR FR' upto 4 Sq. mm & "RR KABEL HR FR" for size 6 Sq. mm and onwards.

Packing : 90 mtr. coil is packed in protective cartons. Project packing of 180 mtr. also available.

Cable Design Parameters

Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required:
01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - grey, 07 - white.

Part Number	Nominal Cross Sectional Area (Sq. mm)	Nominal Insulation Thickness (mm)	Number *Nominal Dia. of Strands	Approx. Overall Diameter (mm)	Max. DC Conductor Resistance at 20°C (Ω/km)	Current Rating (Amps)	
						Casing	Concealed
01010101xx40	1	0.7	14/0.3	2.7	18.1	14	13
01010102xx40	1.5	0.7	22/0.3	3.0	12.1	18	16
01010103xx40	2.5	0.8	36/0.3	3.7	7.41	24	20
01010104xx40	4	0.8	56/0.3	4.1	4.95	30	26
01010105xx40	6	0.8	84/0.3	4.6	3.30	38	33
01010106xx40	10	1.0	140/0.3	7.0	1.91	52	45
01010107xx40	16	1.0	126/0.4	8.1	1.21	70	60

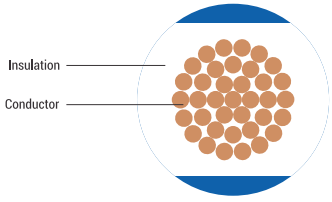
*Conductor as per IS 8130

Properties

Test	Test Method	Values
Limited Oxygen Index	IS 10810 P-58	> 29%
Limited Temp. Index	IS 10810 P-64	>250 °C

FLAMEX FR-LSH

REACH I RoHS I CE



India's 1st REACH and RoHS Compliant Cable | Flame Retardant Low Smoke Low Halogen.

Application

Suitable for use in conduit and for fixed, protected installation particularly suitable for wiring in fire and explosion prone areas, chemical factories, densely wired areas, public buildings, schools, hospitals, commercial complexes, theatres, etc.

Technical Data

Approvals : IS 694 marked, FIA/TAC.

Voltage Grade : Up to and including 1100V.

Conductor : Thin strands of electrolytic copper are multi-drawn for uniformity of resistance, dimension and flexibility.

Insulation : Specially formulated flame retardant low smoke low halogen compound to restrict the spread of flames in fire situation. The smoke emitted by the burning cable is considerably low compared to traditional cables. This ensures improved visibility for evacuation of trapped victims and facilitates fire fighting operation.

Insulation Conformity : IS 5831 Type A/D FR-LSH 70°C.

Colours : Entire cable has white base and a double strip of red or yellow or blue or black or green or grey running along the cable length.

Marking : The cables are printed with the marking of 'FLAMEX FR-LSH'.

Packing : 90 mtr. coils packed in protective cartons. Project coils of 180 mtr. also available.

Cable Design Parameters

Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required:
01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - grey.

Part Number	Nominal Cross Sectional Area (Sq. mm)	Nominal Insulation Thickness (mm)	Number *Nominal Dia. of Strands	Approx. Overall Diameter (mm)	Max. DC Conductor Resistance at 20°C (Ω/km)	Current Rating (Amps)	
						Casing	Concealed
01020101xx50	1	0.7	14/0.3	2.7	18.1	14	13
01020102xx50	1.5	0.7	22/0.3	3.0	12.1	18	16
01020103xx50	2.5	0.8	36/0.3	3.7	7.41	24	20
01020104xx50	4**	0.8	56/0.3	4.1	4.95	30	26

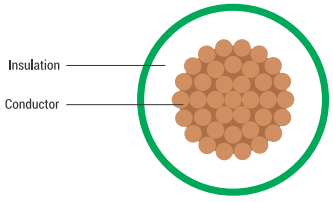
*Conductor as per IS 8130. **Insulation Type D as per IS 5831.

Properties

Test	Test Method	Values
Limited Oxygen Index	IS 10810 P - 58	> 29%
Limited Temperature Index	IS 10810 P - 64	> 250°C
Smoke Density (Light Absorption)	IS 13360 P - 6/Sec 9	< 60%
Acid Gas Generation	IS 10810 P - 59	< 20%

UNILAY HR FR

REACH I RoHS I CE



India's 1st Heat Resistant and Flame Retardant REACH and RoHS Compliant Cable with Unilay Conductor.
No Loose Lontacts, No Broken Ends | No Sparking and Overheating.

Application

Suitable for use in conduit and for fixed, protected installation, ideal for high density wiring.

Technical Data

Approvals : IS 694 marked, FIA / TAC

Voltage Grade : Up to and including 1100 V

Conductor : Thin strands of electrolytic copper are multi-drawn for uniformity of resistance, dimension and flexibility. The drawn strands are uni-laid with high precision and compacted. Thus forming a perfectly circular conductor which enables reduction in overall diameter for space saving in high density wiring.

Conductor Speciality : The strands do not get cut when stripping the insulation. The conductor offers perfect contact at pins, terminals and sockets. Thus, eliminating spot heating and sparking.

Insulation : Specially formulated heat resistant & flame retardant PVC insulation is used. The HR FR property retards the propagation of flame without compromising safety.

Insulation Conformity : IS 5831, Type C - HR 85°C + FR

Colours : Red, yellow, blue, black, green, grey & white

Marking : The cables are printed with marking of 'RR UNILAY HR FR'

Packing : 90 mtr. coils packed in protective cartons

Cable Design Parameters

Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required:
01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - grey, 07 - white.

Part Number	Nominal Cross Sectional Area (Sq. mm)	Nominal Insulation Thickness (mm)	Number *Nominal Dia. of Strands	Approx. Overall Diameter (mm)	Max. DC Conductor Resistance at 20°C (Ω/km)	Current Rating (Amps)	
						Casing	Concealed
01030101xx40	1	0.7	37/0.20	2.6	19.5	12	11
01030102xx40	1.5	0.7	37/0.22	3.0	13.3	16	15
01030103xx40	2.5	0.8	61/0.22	3.6	7.98	23	19
01030104xx40	4	0.8	61/0.30	4.1	4.95	30	26

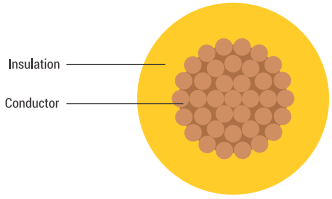
*Conductor as per IS 8130

Properties

Test	Test Method	Values
Limited Oxygen Index	IS 10810 P-58	> 29%
Limited Temp. Imndex	IS 10810 P-64	>250°C

FIREX HFFR

REACH I RoHS I CE



India's 1st Fire-Safe Cable with HFFR Insulation and Unilay Conductor

Halogen Free Flame Retardant Cable - Non -Toxic and Non - Corrosive | Does not Propagate Flame and Fire

Application

Wiring in all installations where fire safety is of utmost importance like schools, theaters, commercial complexes, apartments, high rise buildings, laboratories, etc.

Technical Data

Voltage Grade : Up to and including 1100 V

Conductor : Thin strands of electrolytic copper are multi-drawn for uniformity of resistance, dimension and flexibility. The drawn strands are uni-laid with high precision and compacted. Thus forming a perfectly circular conductor which enables reduction in overall diameter for space saving in high density wiring.

Conductor Speciality : The strands do not get cut when stripping the insulation. The conductor offers perfect contact at pins, terminals and sockets. Thus, eliminating spot heating and sparking.

Insulation : Specially formulated grade of halogen free flame retardant (HFFR) compound is used. The insulation does not burn readily. It does not melt and drip, smoke is negligible, transparent, non-toxic. The victims trapped in fire do not suffocate and this facilitate fire fighting operations. Unlike PVC, the smoke emitted is non-corrosive.

Insulation Conformity : IEC 60332-1 & 3, IEC 60754-1 & 2.

Colours : Red, yellow, blue, black, green, grey and white.

Marking : The cables are printed with marking of 'FIREX HFFR' upto 4 Sq. mm & "RR KABEL HFFR" for size 6 Sq. mm and onwards.

Packing : 90 mtr. coils packed in protective cartons.

Cable Design Parameters

Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required:

01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - grey, 07 - white.

Part Number	Nominal Cross Sectional Area (Sq. mm)	Nominal Insulation Thickness (mm)	Number *Nominal Dia. of Strands	Approx. Overall Diameter (mm)	Max. DC Conductor Resistance at 20°C (Ω/km)	Current Rating (Amps)	
						Casing	Concealed
01040101xx70	1	0.7	37/0.20	2.6	19.5	12	11
01040102xx70	1.5	0.7	37/0.22	3.0	13.3	16	15
01040103xx70	2.5	0.8	61/0.22	3.6	7.98	23	19
01040104xx70	4	0.8	61/0.30	4.1	4.95	30	26
01040105xx70	6#	0.8	84/0.30	4.6	3.30	38	33

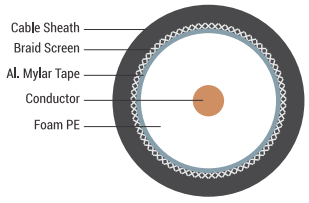
*Conductor as per IEC 60228. #Traditionally bunched conductor. **For the sizes 6 Sq. mm, the marking is 'RR KABEL HFFR'.

Properties

Test	Test Method	Values
Limited Oxygen Index	ASTM - D 2863	> 32%
Limited Temperature Index	ASTM - D 2863	> 250°C
Smoke Density (Light Absorption)	ASTM - D 2843	< 10%
Acid Gas Generation	IEC - 60754 - 1	< 5%

RATNA CO-X

RoHS



Application

High quality co-axial for cable TV network for notch free attenuation values over wide range of frequencies. The special jacketing offers increased life even in rugged conditions.

Technical Data

Conductor : The central conductor is made of solid electrolytic grade annealed plain copper conductor, which has distinct advantages over traditional copper conductor.

Insulation : The insulation provided over the conductor is of foam PE which acts as a dielectric.

Screen : Aluminium mylar tape is provided over the insulated conductor to shield the conductor and ensure disturbance free transmission of signals.

Braiding : The braiding is generally provided with 60% coverage of ATC (Annealed Tinned Copper) / Al alloy.

Marking : The cables are marked 'RATNA CO-X'.

Cable Design Parameters:

Construction Details		Cable Type		
		RG 59 F	RG 6 F*	RG 11 F
Part Number		010501010791	010501020791	010501030791
Inner conductor		Copper	Copper	Copper
Nominal Diameter (mm)		0.8	1.02	1.63
Dielectric		Foam PE	Foam PE	Foam PE
Nominal Diameter (mm)		3.5	4.5	7.0
Outer Conductor	First	Bonded Al Tape	Bonded Al Tape	Bonded Al Tape
	Second	Tinned Cu/Al Braid	Tinned Cu/Al Braid	Tinned Cu/Al Braid
Nominal Coverage (%)		60	60	60
PVC Jacket		Black	Black	Black
Nominal Cable Diameter (mm)		6.2	7.0	10.0

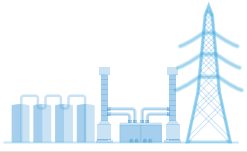
*RG 6 F is also available with CCS conductor and the applicable Part number shall be 010501040791.

Construction Details	Cable Type - Armoured		
	RG 59 F	RG 6 F*	RG 11 F
Part Number	010501050791	010501060791	010501070791
Nominal Cable Diameter (mm)	10.5	11.4	14.6

*RG 6 F armoured is also available with CCS conductor and the applicable Part number shall be 010501080791.

Electrical Parameters

Parameters	Cable Type		
	RG 59 F	RG 6 F	RG 11 F
Inner Conductor-Max Resistance at 20°C (Ω/100m)	0.8	2.1	3.43
Nominal Capacitance (pF/m)	53	53	53
Characteristic Impedance (Ω)	75	75	75
Velocity of Propagation (%)	85	85	85
Dielectric Strength (KV)	> 1	> 1	> 1
Minimum Bending Radius (mm)	75	65	60
Maximum Attenuation at 20°C (dB/100m) at	**Max.**	**Max.**	**Max.**
5 MHz	1.2	1.9	2.8
50 MHz	3.1	5.3	6.7
100 MHz	4.2	7.0	8.8
200 MHz	6.0	9.9	12.4
250 MHz	6.7	10.5	13.4
300 MHz	7.3	11.5	14.6
350 MHz	7.9	12.4	15.7
400 MHz	8.5	13.3	16.7
450 MHz	9.0	14.3	17.7
500 MHz	9.5	14.9	18.7
550 MHz	9.9	15.7	19.5
600 MHz	10.4	16.4	20.3
750 MHz	11.9	18.3	22.8
800 MHz	12.4	19.5	24.5
900 MHz	13.0	20.1	24.7
1000 MHz	14.2	21.4	26.6



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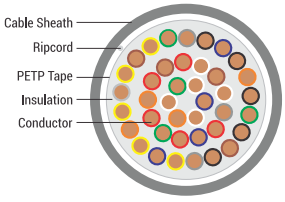


Low Attenuation and Minimised Cross Talk | Flame Retardant Jacket

Application

Recommended for switchboard and telephone wiring in residentials and commercial infrastructure, for transmission of analog and digital signals, wiring in faxes, modems, alarm enunciators, data recording/acquisition systems and various communication devices.

Technical Data

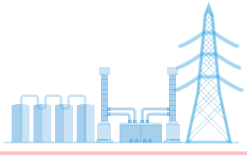
Specifications : ITD-S/WS 113C.
Conductor : The central conductor is made of solid electrolytic grade of copper.
Insulation : Premium quality grade polyethylene used on a special extruder. This serves for low attenuation and minimised cross talk.
Twisted Pairs : The cores are carefully twisted with suitable lays and bunched together.
Marking : The cables are marked 'RATNACOM FR'.
Packing : Available in 100 mtr. length in polybag. Higher lengths available on special request.

Cable Design Parameters:

Part Numbers	Size (mm)	No. of Pairs	Approx. Overall Diameter (mm)
010600221040	0.4	2	3.9
010600321040	0.4	3	4.3
010600421040	0.4	4	4.7
010600521040	0.4	5	5.2
010601021040	0.4	10	6.5
010602021040	0.4	20	9.2
010600221050	0.5	2	4.2
010600321050	0.5	3	4.7
010600421050	0.5	4	5.1
010600521050	0.5	5	5.7
010601021050	0.5	10	7.0
010602021050	0.5	20	10.0

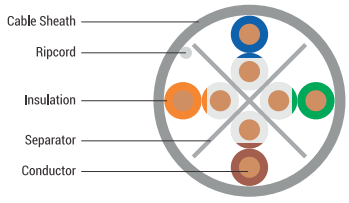
Electrical Parameters

Electrical Parameters	Size	
	0.5 mm	0.4 mm
DC conductor resistance	92.20 Ω/Km at 20°C max.	143.0 Ω/Km at 20°C max.
Mutual capacitance	50 nF/km max.	
Insulation resistance in air	10000 M-Ω/Km	
Capacitance unbalance - pair to pair	250 pF/100m max.	
Capacitance unbalance - pair to ground	330 pF/100m max.	
Resistance unbalance	5% max.	



RATNALAN CAT 5e/6

RoHS



Application

CAT 6 UTP cables are high performance cables used increasingly for modern computer network systems. These cables form the back bone of modern data transmission in industries, residential and commercial infrastructure.

Technical Data

Performance : RATNALAN enhanced CAT 6 UTP capable of handling 100 + Mbps data rates. RATNALAN CAT 5e UTP is independently verified to exceed the requirements of EN 50173, ISO/IEC 11801 and TIA/EIA 568-B-1/B-2.

Cable Construction

Conductor : Solid bare copper
Insulation : High density polyethylene
Pair : 2 Insulated conductors twisted together
Outer Jacket : FR PVC

Colour Code
1 Pair : White - orange stripe and orange
2 Pair : White - green stripe and green
3 Pair : White - blue stripe and blue
4 Pair : White - brown stripe and brown

Packing : Available in easy pull box of 101 mtr. and 305 mtr. for CAT 5e and CAT 6 is available only in 305 mtr. pack.

Type	CAT 5e	CAT 6
Part Number	010701014094	010701014194

Mechanical and Environmental Properties	
Max. Tensile Load :	10 Kgs. per simplex cable (Installation)
Min. Bend Radius :	8 x Outer Diameter (Installation)
	4 x Outer Diameter (Operation)
Temp. - Installation :	0°C to +50°C
Temp. - Operation :	-10°C to +60°C

Applicable International Standards for Cable Construction
ISO/IEC 11801:2002
ISO/IEC 61156-5
EN 50173 -1:2002
EN 50288-3-1
ANSI/TIA/EIA 568B-2:2002

Electrical Parameters at 20°C

Electrical Characteristics at 20°C	Specification	Typical Performance	
		CAT 5e	CAT 6
Conductor loop resistance	Max. 190/100m	160/100m	140/100m
Conductor resistance unbalance	Max. 2%	0.5%	0.5%
Dielectric strength	1.0 kV DC or 0.7 kV AC for 1 min.	100% in process test	100% in process test
Insulation resistance	>500 MΩ/Km at100-500V test voltage	>500 MΩ/Km	>500 MΩ/Km
Capacitance unbalance to earth	Max. 160 pF/100m	40 pF/100m	40 pF/100m
Velocity of propagation	<534 nsec/100m at 100MHz	496 nsec/100m at 100 MHz (NVP for hand held testers = 0.69)	490 nsec/100m at 100 MHz (NVP for hand held testers = 0.69)
Skew	Max. 40 nsec/100m at 100MHz	Max. 25 nsec/100m at 100 MHz	Max. 30 nsec/100m at 100 MHz
Mean characteristic impedance	1000 ± 50 at 100 MHZ	1000 ± 30 at 100 MHz	1000 ± 30 at 100 MHz
Coupling attenuation up to 1 Ghz	Min. 40 dB	50 dB	56 dB

Typical Headroom Characteristics - CAT 5e

Frequency (MHz)		1	4	10	16	20	31.25	62.5	100	155	200	300
Insertion Loss (dB/100m)	Spec value	2.0	4.1	6.5	8.2	9.3	11.7	17.0	22.0	N/A	N/A	N/A
	Typical value	1.8	3.6	5.8	7.4	8.3	10.5	15.3	19.8	25.4	29.4	33.4
NEXT (dB)	Spec value	65.3	56.3	50.3	47.3	45.8	42.9	38.4	35.4	N/A	N/A	N/A
	Typical value	73.3	64.3	58.3	55.2	53.8	50.9	46.4	43.3	40.4	38.8	37.3
PSNEXT (dB)	Spec value	62.3	53.3	47.3	44.2	42.8	39.9	35.4	32.3	N/A	N/A	N/A
	Typical value	71.3	62.3	56.3	53.2	51.8	48.9	44.4	41.3	38.4	36.8	35.3
ELFEXT (dB/100m)	Spec value	63.8	51.8	43.8	39.7	37.8	33.9	27.9	23.8	N/A	N/A	N/A
	Typical value	78.8	66.8	58.8	54.7	52.8	48.9	42.9	38.4	35.0	32.8	31.5
PSELFEXT (db/100m)	Spec value	60.8	48.8	40.8	36.7	34.8	30.9	24.9	20.8	N/A	N/A	N/A
	Typical value	76.8	64.8	56.8	52.7	50.8	46.9	40.9	36.8	33.0	30.8	29.5
Return Loss (dB/100m)	Spec value	N/A	23.1	25.0	25.0	25.0	23.6	21.5	20.1	N/A	N/A	N/A
	Typical value	25.0	28.0	30.0	30.0	30.0	38.6	26.5	25.1	23.8	23.0	22.8
ACR (dB/100m)	Typical value	71.5	60.7	52.5	47.8	45.5	40.4	31.1	23.5	15.0	9.4	3.1
PSACR (dB/100m)	Typical value	69.5	58.7	50.5	45.8	43.5	38.4	29.1	21.5	13.0	7.4	2.0

Typical Headroom Characteristics - CAT 6

Frequency (MHz)		1	4	10	16	20	31.25	62.5	100	155	200	350
Insertion Loss (dB/100m)	Spec value	2.0	3.8	6.0	7.6	8.5	10.7	15.4	19.8	29.0	32.8	N/A
	Typical value	1.9	3.5	5.5	7.0	7.8	9.9	14.1	18.0	26.1	29.4	32.5
NEXT (dB)	Spec value	66.0	65.3	59.3	56.2	54.8	51.9	47.4	44.3	39.8	38.3	N/A
	Typical value	86.5	77.5	71.5	68.4	67.0	64.1	59.6	56.5	52.0	50.5	49.3
PSNEXT (dB)	Spec value	64.0	63.3	57.3	54.2	52.8	49.9	45.4	42.3	37.8	36.3	N/A
	Typical value	84.5	75.5	69.5	66.4	65.0	62.1	57.6	54.5	50.0	48.5	47.3
ELFEXT (dB/100m)	Spec value	66.0	58.0	50.0	45.9	44.0	40.1	34.1	30	24.0	22.0	N/A
	Typical value	85.0	73.0	65.0	60.9	59.0	55.1	49.1	45.0	39.0	37.0	35.5
PSELFEXT (db/100m)	Spec value	64.0	55.0	47.0	42.9	41.0	37.1	31.1	27.0	21.0	19.0	N/A
	Typical value	82.0	70.0	62.0	57.9	56.0	52.1	46.4	42.0	36.0	34.0	32.5
Return Loss (dB/100m)	Spec value	N/A	23.0	25.0	25.0	25.0	23.6	21.5	20.1	18.0	17.3	N/A
	Typical value	27.0	30.0	30.0	30.0	30.0	28.6	26.5	25.1	23.0	22.3	21.8
ACR (dB/100m)	Typical value	84.6	73.9	66.0	61.4	59.1	54.2	45.5	38.5	25.9	21.1	16.9
PSACR (dB/100m)	Typical value	82.6	71.9	64.0	59.0	57.1	52.5	43.5	36.5	23.9	19.1	14.9

CCTV CAMERA CABLE

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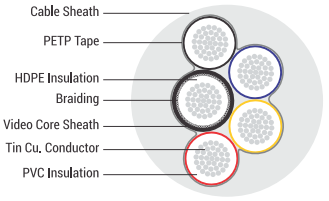

Application

These cables are specifically designed to transmit complete video frequency with minimum distortion or attenuation for security and surveillance. This cable is offered in two variants viz., 4+1 and 3+1 CCTV Camera cable.

Properties

CCTV cables are designed to optimize the quality of video signals. The dense tin coated copper screen ensures complete elimination of EMI/RFI from video signals and also provides reduced DC resistance ground path. The multi stranded construction offers better flexibility and reduced bending radius.

Cable Construction

Screened Core for Video signal

Conductor : The central conductor is made of fine wires tin coated electrolytic grade copper.

Insulation : The insulation provided over the conductor is of HDPE with high dielectric strength and low capacitance.

Screen : Annealed tin coated copper 85% coverage approx.

Sheath : Black colored PVC

Power Cores

Conductor : The central conductor is made of fine wires tin coated electrolytic grade copper.

Insulation : The insulation provided over the conductor is of PVC with high dielectric strength.

Seperator : PETP tape.

Sheath : PVC

Cable Colour : White. Black with UV resistance to ASTM G 154.

Cable Design Parameters:

Part Number	Cable Type	Cable Size (Sq. mm)	Nominal Cable Diameter (mm)	Power Core Colour
010801010795	CCTV Cable 4+1	4C + 1C x 0.25	6.8	RD, YL, BK, GN
010801020795	CCTV Cable 3+1	3C + 1C x 0.25	6.8	RD, BK, GN

SPEAKER CABLE

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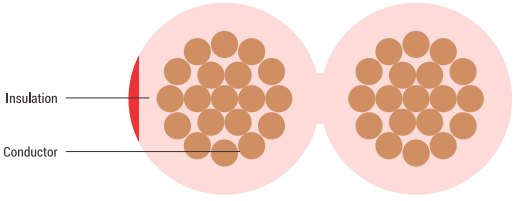

Application

Speaker cables are highly recommended for use in connecting speakers, public address system for clear and distortion free voice with low dB loss.

Cable Construction

The cables are manufactured with bright annealed plain flexible electrolytic grade copper conductor, bunched compactly, insulated with specially formulated PVC compound. Each core is uniquely designed for easy identification. In order to offer uniform capacitance throughout length the distance between the two conductors is maintained uniformly.

Colour Availability : Transparent / black / white with red tracer for polarity identification. Also available in grey.

Packing : The delivery length is available in 100 mtr. coils.

Cable Design Parameters:

Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for colour required:
00 - Transparent, 02 - black, 07 - white, 12 - grey

Conductor Construction				Maximum Overall Dimensions (W X H) (mm)
Part Number	Equivalent AWG	Nominal Cross Sectional Area (Sq. mm)	Max. DC Conductor Resistance at 20°C (Ω/km)	
01090101xx10	22	0.5	39.0	4.2 x 2.1
01090102xx10	19	0.75	26.0	4.7 x 2.4
01090103xx10	18	1	19.5	5.7 x 2.9
01090104xx10	16	1.5	13.3	6.0 x 3.0
01090105xx10	14	2.5	7.98	7.0 x 3.6
01090106xx10	12	4	4.95	8.4 x 4.1
01090107xx10	10	6	3.30	9.6 x 4.7

Recommended length

Wire Size	2Ω load	4Ω load	6Ω load	8Ω load
22 AWG	3ft (0.9m)	6ft (1.8m)	9ft (2.7m)	12ft (3.6m)
19 AWG	5ft (1.5m)	10ft (3m)	15ft (4.5m)	20ft (6m)
18 AWG	8ft (2.4m)	16ft (4.9m)	24ft (7.3m)	32ft (9.7m)
16 AWG	12ft (3.6m)	24ft (7.3m)	36ft (11m)	48ft (15m)
14 AWG	20ft (6.1m)	40ft (12m)	60ft (18m)	80ft (24m)
12 AWG	30ft (9.1m)	60ft (18m)	90ft (27m)	120ft (36m)
10 AWG	50ft (15m)	100ft (30m)	150ft (46m)	200ft (61m)

FIXED WIRE (IS 694)

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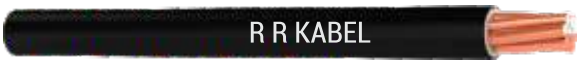
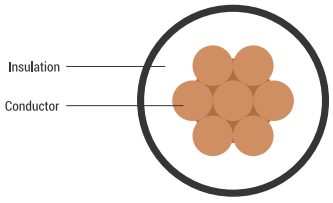




Application

PVC and FR PVC 70°C cables suitable for wiring in residential and commercial infrastructure.

HR PVC 85°C cables are suitable for wiring in residential and commercial infrastructure for a higher ambient temperature.

FR-LSH cables are suitable for wiring in public places like schools, hospitals, theatres, etc. These are also suitable for fire prone areas and chemical factories.

Cable Construction

Approvals : IS 694 marked, FIA/TAC

Conductor : Electrolytic grade annealed copper

Voltage : Up to and including 1100V

Packing : Standard packing of 100 mtr. in coil. Longer length available on request.

Variants Available

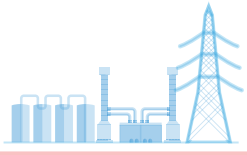
Product Type	Cable Size Range (Sq. mm)	Specifications
PVC 70°C/HR 85°C	1 x 0.5 to 630	IS 694, IS 8130 Class 1 & 2, IS 5831 Type A & C
FR 70°C/HR 85°C + FR	1 x 0.5 to 630	IS 694, IS 8130 Class 1 & 2, IS 5831 Type A & C (FR)
FR-LSH	1 x 0.5 to 630	IS 694, IS 8130 Class 1 & 2, IS 5831 Type A (FR-LSH)

Cable Design Parameters:

Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required as per the list:
02 - black, 03 - red, 04 - blue, 05 - yellow, 07 - white, 12 - grey and (in place of 'y') for the insulation material required as per the list:
1 – PVC 70°C, 2 - PVC FR 70°C, 3 - PVC HR 85°C, 4 - PVC HR 85°C + FR, 5 - PVC FR-LSH.

Part Number	Nominal Cross Sectional Area (Sq. mm)	Conductor Class	No. of Conductor	Max. DC Conductor Resistance at 20°C (Ω/km)	Nominal Insulation Thickness (mm)	Maximum Diameter Over Insulation (mm)
01110101xxy0	0.5	1	1	36.0	0.6	2.3
01110102xxy0	0.75	1	1	24.5	0.6	2.5
01110103xxy0	1	1	1	18.1	0.6	2.7
01110104xxy0	1.5	1	1	12.1	0.7	3.2
01110105xxy0	2.5	1	1	7.41	0.8	3.9
01110106xxy0	4	1	1	4.61	0.8	4.4
01110107xxy0	6	1	1	3.08	0.8	5.0
01110108xxy0	10	1	1	1.15	1.0	6.4

Part Number	Nominal Cross Sectional Area (Sq. mm)	Conductor Class	Minimum No. of Conductor		Max. DC Conductor Resistance at 20°C (Ω/km)	Nominal Insulation Thickness (mm)	Maximum Diameter Over Insulation (mm)
			Compacted	Non-Compacted			
01110109xxy0	1	2	--	3	18.1	0.6	2.7
01110110xxy0	1.5	2	--	3	12.1	0.7	3.3
01110111xxy0	2.5	2	--	3	7.41	0.8	4.0
01110112xxy0	4	2	--	7	4.61	0.8	4.6
01110113xxy0	6	2	--	7	3.08	0.8	5.2
01110114xxy0	10	2	6	7	1.83	1.0	6.7
01110115xxy0	16	2	6	7	1.15	1.0	7.8
01110116xxy0	25	2	6	7	0.727	1.2	9.7
01110117xxy0	35	2	6	7	0.524	1.2	10.9
01110118xxy0	50	2	6	19	0.387	1.4	12.8
01110119xxy0	70	2	12	19	0.268	1.4	14.6
01110120xxy0	95	2	15	19	0.193	1.6	17.1
01110121xxy0	120	2	18	37	0.153	1.6	18.8
01110122xxy0	150	2	18	37	0.124	1.8	20.9
01110123xxy0	185	2	30	37	0.0991	2.0	23.3
01110124xxy0	240	2	34	61	0.0754	2.2	26.6
01110125xxy0	300	2	34	61	0.0601	2.4	29.6
01110126xxy0	400	2	53	61	0.0470	2.6	33.2
01110127xxy0	500	2	53	61	0.0366	2.8	37.5
01110128xxy0	630	2	53	91	0.0283	3.0	42.0



MULTICORE FIXED WIRE (IS 694)

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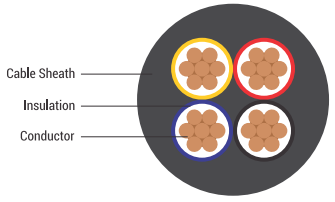


Application

PVC and FR PVC 70°C cables suitable for wiring in residential and commercial infrastructure.

HR PVC 85°C cables are suitable for wiring in residential and commercial infrastructure for a higher ambient temperature.

FR-LSH cables are suitable for wiring in public places like schools, hospitals, theatres, etc. These are also suitable for fire prone areas and chemical factories.

Technical Data

Approvals : IS 694 marked, FIA/TAC

Conductor : Electrolytic grade annealed copper

Core Colour : Refer colour code table

Sheath Colour : Black, grey and white

Packing : Standard packing of 100 mtr. in coils. Longer length available on request.

Variants Available

Product Type	Specifications
PVC 70°C	IS 694, IS 8130 Class 1 & 2, IS 5831 Type A insulation & ST-1 sheath
HR 85°C	IS 694, IS 8130 Class 1 & 2, IS 5831 Type C insulation & ST-2 sheath
FR 70°C	IS 694, IS 8130 Class 1 & 2, IS 5831 Type A insulation & ST-1 (FR) sheath
HR 85°C + FR	IS 694, IS 8130 Class 1 & 2, IS 5831 Type C insulation & ST-2 (FR) sheath
FR-LSH	IS 694, IS 8130 Class 1 & 2, IS 5831 Type A insulation & ST-1 (FR-LSH) sheath

Cable Design Parameters:

Kindly complete the part numbers for these cables by adding the suffix (in place of 'y') for the product type required:
1 – PVC 70°C, 2 - PVC FR 70°C, 3 - PVC HR 85°C, 4 - PVC HR 85°C +FR, 5 - PVC FR-LSH and (in place of 'z') for the sheath colour required as per the list: 1 - black, 2 - grey, 3 - white.

Part Number	No. of Cores	Nominal Cross Sectional Area (Sq. mm)	Nominal Insulation Thickness (mm)	Nominal Thickness of Sheath	Maximum Overall Dimensions (mm)
0112010102yz	1	1	0.60	0.8	4.7
0112010202yz	2	1	0.60	0.9	8.2
0112010302yz	3	1	0.60	0.9	8.6
0112010402yz	4	1	0.60	0.9	9.2

Part Number	No. of Cores	Nominal Cross Sectional Area (Sq. mm)	Nominal Insulation Thickness (mm)	Nominal Thickness of Sheath	Maximum Overall Dimensions (mm)
0112010502yz	1	1.5	0.60	0.8	5.0
0112010602yz	2	1.5	0.60	0.9	8.8
0112010702yz	3	1.5	0.60	0.9	9.2
0112010802yz	4	1.5	0.60	0.9	10.0
0112010902yz	1	2.5	0.80	0.8	5.8
0112011002yz	2	2.5	0.80	1.0	10.5
0112011102yz	3	2.5	0.80	1.0	11.0
0112011202yz	4	2.5	0.80	1.0	12.0
0112011302yz	1	4	0.80	0.9	6.8
0112011402yz	2	4	0.80	1.0	12.0
0112011502yz	3	4	0.80	1.1	13.0
0112011602yz	4	4	0.80	1.1	14.0
0112011702yz	1	6	0.80	0.9	7.8
0112011802yz	2	6	0.80	1.1	13.5
0112011902yz	3	6	0.80	1.1	14.5
0112012002yz	4	6	0.80	1.2	15.5
0112012102yz	1	10	1.00	0.9	8.8
0112012202yz	2	10	1.00	1.2	16.5
0112012302yz	3	10	1.00	1.2	17.5
0112012402yz	4	10	1.00	1.3	19.5
0112012502yz	1	16	1.00	1.0	10.5
0112012602yz	2	16	1.00	1.3	19.0
0112012702yz	3	16	1.00	1.3	20.0
0112012802yz	4	16	1.00	1.4	22.5
0112012902yz	1	25	1.20	1.1	12.5
0112013002yz	2	25	1.20	1.4	23.0
0112013102yz	3	25	1.20	1.5	24.5
0112013202yz	4	25	1.20	1.6	27.5
0112013302yz	1	35	1.20	1.1	13.5
0112013402yz	2	35	1.20	1.5	25.5
0112013502yz	3	35	1.20	1.6	27.5
0112013602yz	4	35	1.20	1.7	30.5
0112013702yz	1	50	1.40	1.2	15.5
0112013802yz	2	50	1.40	1.6	29.5
0112013902yz	3	50	1.40	1.7	31.5
0112014002yz	4	50	1.40	1.8	35.0

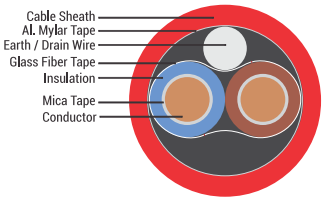
Part Number	No. of Cores	Nominal Cross Sectional Area (Sq. mm)	Nominal Insulation Thickness (mm)	Nominal Thickness of Sheath	Maximum Overall Dimensions (mm)
0112014102yz	1	70	1.40	1.4	17.5
0112014202yz	2	70	1.40	2.4	35.0
0112014302yz	3	70	1.40	2.5	37.0
0112014402yz	4	70	1.40	2.8	41.4
0112014502yz	1	95	1.60	1.5	21.0
0112014602yz	2	95	1.60	2.7	40.5
0112014702yz	3	95	1.60	2.9	43.2
0112014802yz	4	95	1.60	3.1	48.1
0112014902yz	1	120	1.60	1.5	48.1
0112015002yz	2	120	1.60	2.9	44.0
0112015102yz	3	120	1.60	3.1	47.3
0112015202yz	4	120	1.60	3.4	52.8

Colour Code:

Number of Cores	Colour Code
1	RD/YL/BL/BK/WH/GY
2	RD/BK
3	RD/YL/BL
4	RD/YL/BL/BK

FIRE ALARM CABLES

REACH I RoHS I CE



Application

These cables are used in high rise buildings, commercial complexes, schools and educational institutions, hospitals, etc. for the connection with security systems like smoke detectors, emergency lightings, exit signboards and fire command center. These cables are used where the fire safety is utmost important.

Standard

BS 7629, BS 6387, BS 50200.

Technical Data

Voltage Rating : 300/500V

Temperature Range : -30°C to + 70°C (The cable should not be flexed when either the ambient or cable temperature is below 0°C)

Minimum Bending Radius : 6D

Cable Type - 1

FFX200 05mSOZ1-R - CU/MGT/SR/OSCR/LSZH 300/500V Class. 2.

Cable Construction

Plain annealed copper conductor to Cl. 2, BS EN 60288.

Primary insulation of glass mica fire resistant tape.

Secondary insulation of high performance Silicone rubber.

EI 2 to BS 7655 Section 1.1.

Core colours :

2 Core : blue, brown.

3 Core : blue, brown, black.

4 Core : blue, brown, black, grey.

Earth/Drain wire of annealed tinned copper to BS EN 60228.

Glass fiber tape.

Electrostatic screen of aluminium fire barrier with 125 % overlap.

Sheath type LTS3 to BS 7655 section 6.1.

Properties

Zero halogen, low smoke, flame retardant, abrasion resistant.

Fire Performance Tests

BS 7629 - 1 : 2008 - 300 / 500V fire resistant electric cables corrosive gases when having low emission of smoke and affected by fire.

BS 6387 specification for performance requirements for cables required to maintain circuit conditions.

Integrity under fire category CWZ cables resistant to fire, water spray mechanical shock.

Standard fire resistant cables as described in Clause 26 2d of BS 5839 - 1:2002 + A2:2008.

Fire detection and Fire alarm systems for buildings.

Class Ph120 when tested in accordance with BS EN 50200 - Method of test for resistance to fire of unprotected small cables for use in emergency circuits.

BS 8434 - 2.

Cable Design Parameters

Part Number	No. of Cores & Nominal Cross - Section Area (Sq. mm)	No. of Strands/ Strand Diameter (mm)	Nominal Overall Diameter (mm)
100100201105	2 x 1.5	7/0.53	9.5
100100201205	2 x 2.5	7/0.67	11.0
100100301105	3 x 1.5	7/0.53	10.1
100100301205	3 x 2.5	7/0.67	11.9
100100401105	4 x 1.5	7/0.53	11.1
100100401205	4 x 2.5	7/0.67	13.0

Electrical Properties

Part Number	No. of Cores & Nominal Cross - Section Area (Sq. mm)	Max. Conductor Resistance at 20°C (Ω/km)	Current Rating (A)		Voltage Drop DC or Single Phase AC (mV/A/m)
			DC or Single Phase AC enclosed	DC or Single Phase AC Clipped	
100100201105	2 x 1.5	12.1	17.5	20.0	29
100100201205	2 x 2.5	7.41	24.0	27.0	18
100100301105	3 x 1.5	12.1	17.5	20.0	29
100100301205	3 x 2.5	7.41	24.0	27.0	18
100100401105	4 x 1.5	12.1	17.5	20.0	29
100100401205	4 x 2.5	7.41	24.0	27.0	18

Cable Type - 2

FFX200 05SOZ1-U - CU/SR/OSCR/LSZH 300/500V Class 1.

Technical Data

Plain annealed copper conductor Cl.1, to BS EN 60288.
Insulation of high performance Silicone rubber.
EI 2 to BS 7655 Section 1.1.
Core colours:
2 Core : blue, brown.
3 Core : blue, brown, black.
4 Core : blue, brown, black, grey.
Earth/Drain wire of annealed tinned copper Cl.1 to BS EN 60228.
Electrostatic screen of aluminium fire barrier with 125 % overlap.
Sheath Type LTS3 to BS 7655 section 6.1.

Properties

Zero halogen, low smoke, flame retardant, abrasion resistant.

Fire Performance Tests

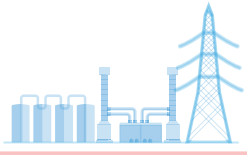
BS 7629 -1 : 2008 - 300 / 500V fire resistant electric cables corrosive gases when having low emission of smoke and affected by fire.
BS 6387 specification for performance requirements for cables required to maintain circuit conditions.
Integrity under fire Category CWZ cables resistant to fire, water spray mechanical shock.

Cable Design Parameters

Part Number	No. of Cores & Nominal Cross - Section Area (Sq. mm)	No. of Strands/ Strand Diameter (mm)	Nominal Overall Diameter (mm)	Approx. Cable Weight (kg/km)
100200200001	2 x 1	1/1.13	7.8	79
100200201105	2 x 1.5	1/1.38	8.5	97
100200201205	2 x 2.5	1/1.78	9.9	147
100200300001	3 x 1	1/1.13	8.2	96
100200301105	3 x 1.5	1/1.38	9.1	125
100200301205	3 x 2.5	1/1.78	10.6	189
100200400001	4 x 1	1/1.13	9.0	124
100200401105	4 x 1.5	1/1.38	10.1	161
100200401205	4 x 2.5	1/1.78	11.6	228

Electrical Properties

Part Number	No. of Cores & Nominal Cross - Section Area (Sq. mm)	Max. Conductor Resistance at 20°C (Ω/km)	Current Rating (A)		Voltage Drop DC or Single Phase AC (mV/A/m)
			DC or Single Phase AC enclosed	DC or Single Phase AC Clipped	
100200200001	2 x 1	18.1	13.1	15.5	44
100200201105	2 x 1.5	12.1	17.5	20.0	29
100200201205	2 x 2.5	7.41	24.0	27.0	18
100200300001	3 x 1	18.1	13.1	15.5	44
100200301105	3 x 1.5	12.1	17.5	20.0	29
100200301205	3 x 2.5	7.41	24.0	27.0	18
100200400001	4 x 1	18.1	13.1	15.5	44
100200401105	4 x 1.5	12.1	17.5	20.0	29
100200401205	4 x 2.5	7.41	24.0	27.0	18



Technical Information

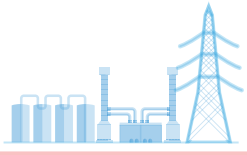
Fixed & Multicore Fixed Wire up to and including 1100 V as per IS 694.
Max. DC Conductor resistance as per EN 60228/DIN VDE 0295/IS 8130 for conductor made of soft-annealed copper.

Nominal Cross-Section (mm²)	Max. DC Conductor resistance at 20°C (Ω/km)			
	Tin Coated Copper Conductor		Plain Copper Conductor	
	Class 1*/2	Class 5/6	Class 1*/2	Class 5/6
0.08	-	250.0	-	243.0
0.14	-	142.0	-	138.0
0.25	-	82.0	-	79.0
0.34	-	59.0	-	57.0
0.38	-	52.8	-	48.5
0.5	36.7	40.1	36	39.0
0.75	24.8	26.7	24.5	26.0
1	18.2	20.0	18.1	19.5
1.5	12.2	13.7	12.1	13.3
2.5	7.56	2.21	7.41	7.98
4	4.70	5.09	4.61	4.95
6	3.11	3.39	3.08	3.30
10	1.84	1.95	1.83	1.91
16	1.16	1.24	1.15	1.21
25	0.734	0.795	0.727	0.780
35	0.529	0.565	0.524	0.554
50	0.391	0.393	0.387	0.386
70	0.270	0.277	0.268	0.272
95	0.195	0.210	0.193	0.206
120	0.154	0.165	0.153	0.161
150	0.126	0.132	0.124	0.129
185	0.100	0.108	0.0991	0.106
240	0.0762	0.0817	0.0754	0.0801
300	0.0607	0.0654	0.0601	0.0641
400	0.0475	0.0495	0.0470	0.0486
500	0.0369	0.0391	0.0366	0.0384
630	0.0286	0.0292	0.0283	0.0287
800	0.0224	-	0.0221	-
1000	0.0177	-	0.0176	-

Note:
** 0.08 Sq. mm to 0.38 Sq. mm as per DIN VDE 0295 (Class 5 / 6)
** In accordance to
- IS 8130, Class 1, Plain and tin coated copper max up to and including 150 Sq. mm and 16 Sq. mm respectively.
- EN 60228, Class 1, Plain and tin coated copper max up to and including 400 Sq. mm and 16 Sq. mm respectively.
- IS 8130, Class 2, Plain and tin coated copper from 1 Sq. mm to 1000 Sq. mm.
- EN 60228, Class 2, Plain and tin coated copper from 0.5 Sq. mm to 1000 Sq. mm.
- IS 8130 and EN 60228, Class 5 and 6, Plain and tin coated copper up to and including 630 Sq. mm and 300 Sq. mm respectively.

Current Rating - Single Core Cables for Fixed Installation up to and including 1100 V as per IS 694.

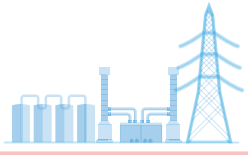
Nominal Cross-Section Area of Conductor (mm^2)	Max. Current Capacity (A) for Class 1 Conductor	Max. Current Capacity (A) for Class 2 Conductor
0.5	5.5	-
0.75	9	-
1	14	14
1.5	19	19
2.5	26	26
4	32	32
6	41	41
10	54	54
16	-	74
25	-	94
35	-	118
50	-	146
70	-	219
95	-	280
120	-	326
150	-	369
185	-	444
240	-	531
300	-	587
400	-	610
500	-	692
630	-	735



Nominal Cross-Section Area of Conductor (mm^2)	2 Core & 3 Core Cable for Single Phase AC/DC		3 Core & 4 Core Cable for Three Phase AC	
	Max. Current Capacity (A)	Voltage Drop (mV/A/m)	Max. Current Capacity (A)	Voltage Drop (mV/A/m)
1	14	40	13	35
1.5	19	27	18	23
2.5	26	16	24	14
4	32	10	30	8.8
6	41	6.8	39	5.9
10	54	4	50	3.5
16	74	2.6	68	2.2
25	94	1.6	85	1.4
35	118	1.2	105	1.0
50	146	0.97	130	0.84
70	219	0.7	195	0.62
95	280	0.59	246	0.48
120	326	0.48	284	0.42

Current rating conversion factor for deviating ambient temperature (IS 694).
Multiply the current carrying capacity of the cable by the factors given below for various ambient temperature.

Ambient Temperature (°C)	Derating Factor
30	1.09
40	1.00
45	0.78
50	0.70
55	0.60
60	0.48



The technical data mentioned in this book has been derived to have the best product in place. Having known that Innovation has always been the base for R R Kabel products, the technical data would vary from time to time. Hence, current details should always be checked with R R Kabel for accuracy.

REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
RoHS = Restriction of Hazardous Substances | CE = Conformité Européenne
ISI = Indian Standards Institute

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