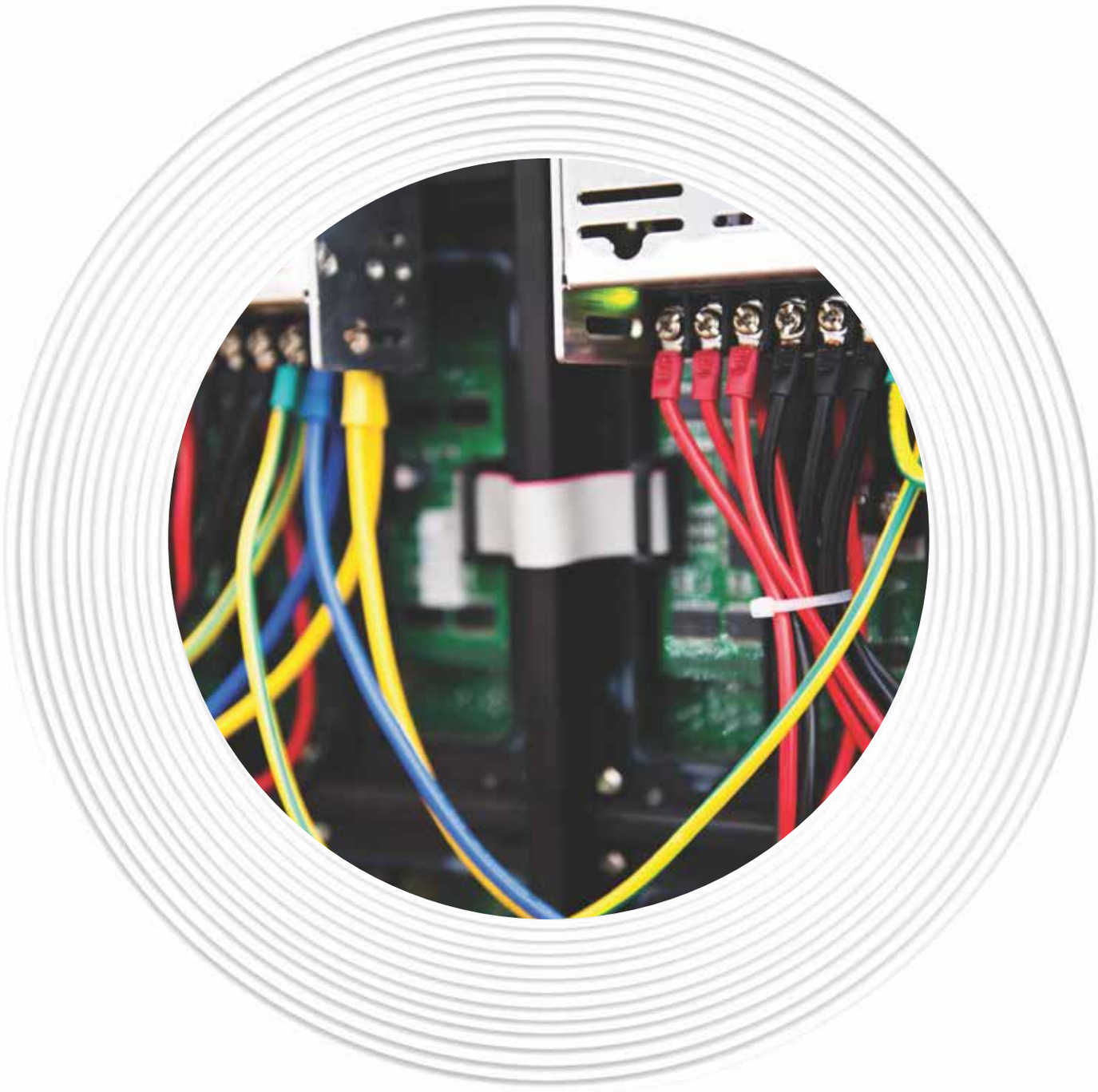
SECTION - II

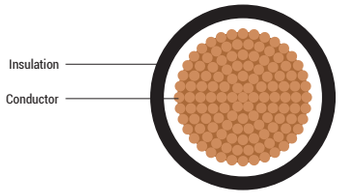
SINGLE CORE



PRODUCTS

RATNAFLEX FLEXIBLE

REACH I RoHS I CE



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 70°C cables suitable for ambient wiring in control cabinets, panels and power switchgear for enhanced safety.
HR PVC 85°C 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 70°C 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.

Technical Data

Approvals : IS 69 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	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)

Cable Design Parameters

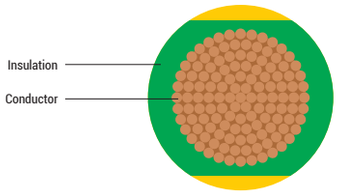
Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required:
01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - green/yellow, 07 - white, 08 - violet, 09 - brown, 10 - orange, 11 - pink, 12 - grey.
By adding the suffix (in place of 'y') 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 70°C.

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	0.6	3.4
02010105xxy0	2.5	50/0.25	0.7	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

For current ratings for IS 694 refer table no. 6-2 & 6-5.

H05V-K & H07V-K

REACH | RoHS | CE | CPR Compliant



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 : H05V-K 0.5 to 1 mm² - 300 / 500V, H07V-K 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

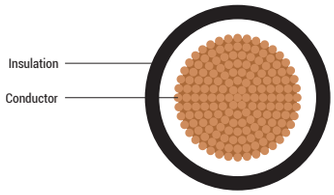
Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required:
01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - green/yellow, 07 - white, 08 - violet, 09 - brown, 10 - orange, 11 - pink, 12 - grey.
By adding the suffix (in place of 'c') 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	0.6	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)
For current ratings refer table no. 7-1.

H05V2-K & H07V2-K

REACH | RoHS | CE | CPR Compliant



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 : H05V2-K 0.5 to 1 mm² - 300 / 500V, H07V2-K 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

For current ratings refer table no. 8-1 & 8-2.

H05Z-K & H07Z-K

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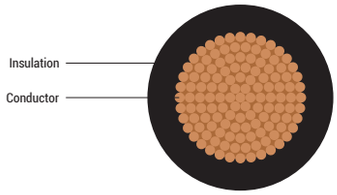

Application

Halogen-free single-core wires are used for installation in dry environments for wiring up lighting fixtures and units where valuable assets are to be 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 these 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	0.8	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

For current ratings refer table no. 9-1 & voltage drop refer table no. 9-2.

H05Z1-K & H07Z1-K

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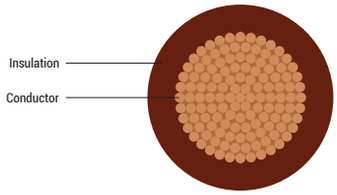


Application

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_0 / U 300 / 500V; H07Z1- K U_0 / 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.
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.

Cable Design Parameters

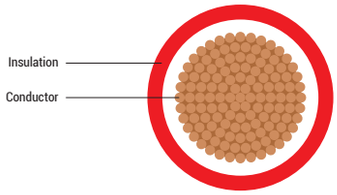
Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for the colour required:
01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - green/yellow, 07 - white, 08 - violet, 09 - brown, 10 - orange, 11 - pink, 12 - grey.
By adding the suffix (in place of 'c')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

For current ratings refer table no. 7-1.

BS 6231 CK 90°C

REACH I RoHS I CE I CPR Compliant



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.
For current ratings refer table no. 8-1 & 8-2.