



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.

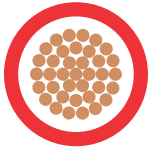
We believe that the future of design lies with innovation that instigates one to push boundaries, eliminate borders between sciences. The materials we use may sometimes be unique, sometimes experimental, many are collaborations but they all represent extraordinary research and dedication by engineers,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

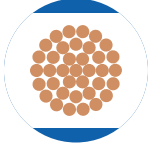


BUILDING WIRES

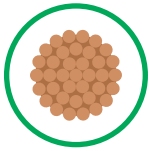




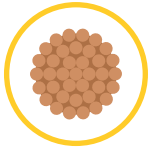
Product Name
Superex HR FR
Page No.
6



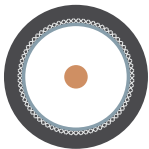
Product Name
Flamex FR LSH
Page No.
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Product Name
Unilay HR FR
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Product Name
Firex HFFR
Page No.
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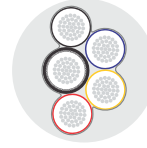
Product Name
Ratna Co-X
Page No.
10 - 11



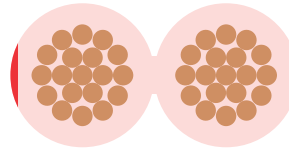
Product Name
Ratnacom
Page No.
12 - 13



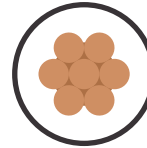
Product Name
Ratnalan Cat 5e / 6
Page No.
14 - 15



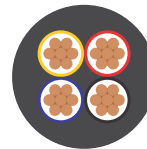
Product Name
CCTV Camera Cable
Page No.
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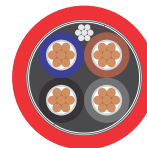
Product Name
Speaker Wire
Page No.
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Product Name
Fixed Wire (IS 694)
Page No.
18 - 19



Product Name
Multicore Fixed Wire (IS 694)
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20 - 22



Product Name
Fire Alarm Cable
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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.

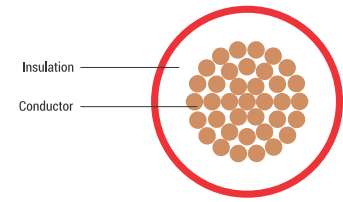
Check if the wire is -

- 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.





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:

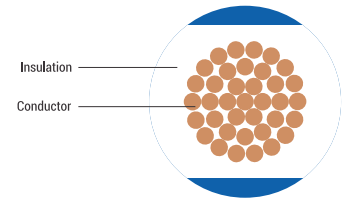
01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - grey, 07 - white.

| 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 |



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.

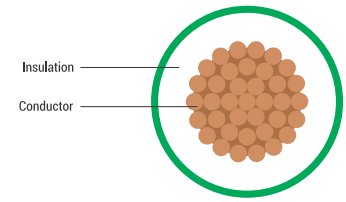
| Part Number | Nominal Cross Sectional Area (Sq. mm) | Nominal Insulation Thickness (mm) | Number *Nominal Dia. of Strands | Approx. Overall Diameter (mm) | Max. DC Conductor Resistance at 20°C (Ω/km) | Current Rating (Amps) | |
|--------------|---------------------------------------|-----------------------------------|---------------------------------|-------------------------------|---|-----------------------|-----------|
| | | | | | | 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% |



India's 1st Heat Resistant and Flame Retardant REACH and RoHS Compliant Cable with Unilay Conductor.
No Loose Contacts, 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:

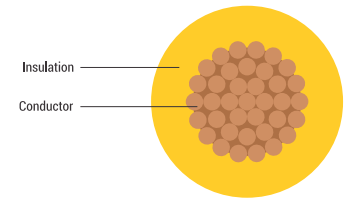
01 - green, 02 - black, 03 - red, 04 - blue, 05 - yellow, 06 - grey, 07 - white.

| 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 |



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 |

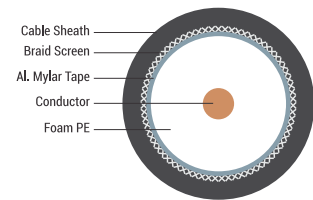
*Conductor as per IEC 60228.

[#]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% |



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 |

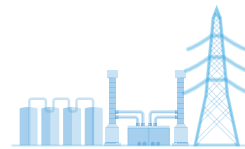
*RG 6 F is also available with CCS conductor and the applicable Part number shall be 010501040791.

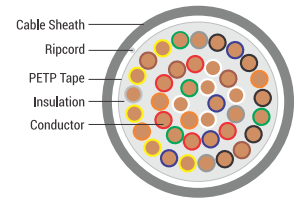
| Construction Details | | Cable Type - Armoured | | |
|-----------------------------|--|-----------------------|--------------|--------------|
| | | RG 59 F | RG 6 F* | RG 11 F |
| Part Number | | 010501050791 | 010501060791 | 010501070791 |
| Nominal Cable Diameter (mm) | | 10.5 | 11.4 | 14.6 |

*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 ($\Omega/100m$) | 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 |





Low Attenuation and Minimised Cross Talk | Flame Retardant Jacket

Application

Recommended for switchboard and telephone wiring in residential 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'.

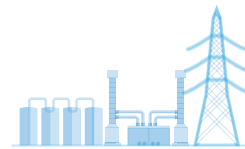
Packing : Available in 100 mtr. length in polybag. Higher lengths available on special request.

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 |

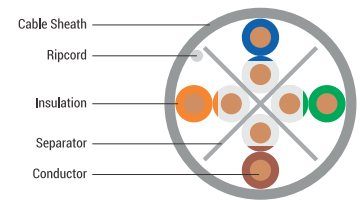
Electrical Parameters

| 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 backbone 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 | Applicable International Standards for Cable Construction |
|--|---|
| Max. Tensile Load : 10 Kgs. per simplex cable (Installation) | ISO/IEC 11801:2002 |
| Min. Bend Radius : 8 x Outer Diameter (Installation) 4 x Outer Diameter (Operation) | ISO/IEC 61156-5 |
| Temp. - Installation : 0°C to +50°C | EN 50173 -1:2002 |
| Temp. - Operation : -10°C to +60°C | 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 at 100-500V 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

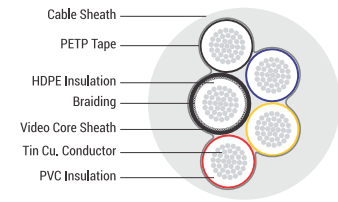
| Frequency (MHz) | | 1 | 4 | 10 | 16 | 20 | 31.25 | 62.5 | 100 | 155 | 200 | 300 |
|--------------------------|---------------|------|------|------|------|------|-------|------|------|------|------|------|
| Insertion Loss (dB/100m) | Spec value | 2.0 | 4.1 | 6.5 | 8.2 | 9.3 | 11.7 | 17.0 | 22.0 | N/A | 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

REACH | RoHS | CE



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

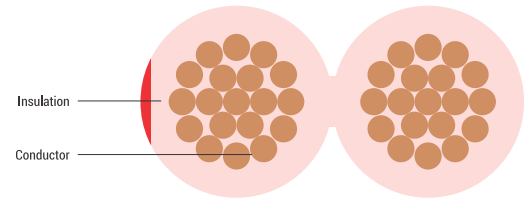
Cable Colour : White. Black with UV resistance to ASTM G 154.

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

REACH | RoHS | CE



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:

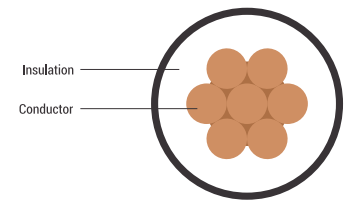
Kindly complete the part numbers for these cables by adding the suffix (in place of 'xx') for colour required:

00 - Transparent, 02 - black, 07 - white, 12 - grey

| Part Number | Conductor Construction | | | Maximum Overall Dimensions (W X H) (mm) |
|--------------|------------------------|---------------------------------------|---|---|
| | 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) |



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

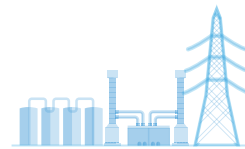
| Product Type | Cable Size Range (Sq. mm) | Specifications |
|----------------------|---------------------------|--|
| PVC 70°C/HR 85°C | 1 x 0.5 to 630 | IS 694, IS 8130 Class 1 & 2, IS 5831 Type A & C |
| FR 70°C/HR 85°C + FR | 1 x 0.5 to 630 | IS 694, IS 8130 Class 1 & 2, IS 5831 Type A & C (FR)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

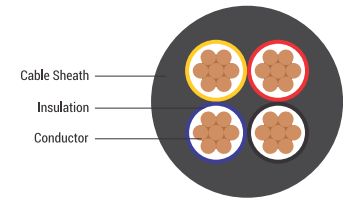
| Part Number | Nominal Cross Sectional Area (Sq. mm) | Conductor Class | No. of Conductor | Max. DC Conductor Resistance at 20°C (Ω/km) | Nominal Insulation Thickness (mm) | Maximum Diameter Over Insulation (mm) |
|--------------|---------------------------------------|-----------------|------------------|---|-----------------------------------|---------------------------------------|
| 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)

REACH | RoHS | CE



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.

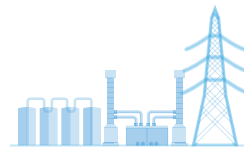
| Part Number | No. of Cores | Nominal Cross Sectional Area (Sq. mm) | Nominal Insulation Thickness (mm) | Nominal Thickness of Sheath | Maximum Overall Dimensions (mm) |
|--------------|--------------|---------------------------------------|-----------------------------------|-----------------------------|---------------------------------|
| 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 |

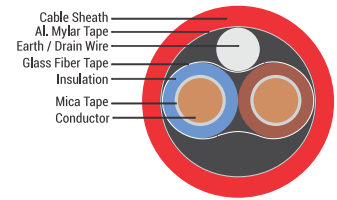
Colour Code:

| 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 | RoHS | 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 (mm ²) | 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:

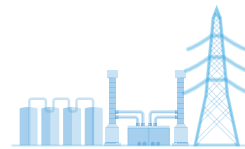
** 0.08 Sq. mm to 0.38 Sq. mm as per DIN VDE 0295 (Class 5 / 6)

** 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.

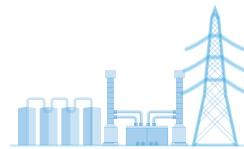
| Nominal Cross-Section Area of Conductor (mm ²) | Max. Current Capacity (A) for Class 1 Conductor | Max. Current Capacity (A) for Class 2 Conductor |
|--|---|---|
| 0.5 | 5.5 | - |
| 0.75 | 9 | - |
| 1 | 14 | 14 |
| 1.5 | 19 | 19 |
| 2.5 | 26 | 26 |
| 4 | 32 | 32 |
| 6 | 41 | 41 |
| 10 | 54 | 54 |
| 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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