Caledonian Cables Ltd

Industrial Cables

French Standard

Addison

Company Profile

Caledonian. established in 1978.offers one of the most complete lines of fiber and copper cabling system solutions with over hundreds of different cabling system products. . Our superior products provide leading edge within every cable series and for every application.

Among the national and international standards with which our cables could comply are: BS - British Standard; LPCB Fire Performance Standard. ISO Standard etc. Caledonian Cables offers a comprehensive stock of cables and cabling products through its nationwide network of resellers and distributors. Caledonian Cables has continually expanded its global presence in Europe and Asia.

Caledonian & Addison. produces a wide range of cables for communication. power and electronics in its primary plants in UK. Italy and Spain. To stay in front. we continually keep expanding our manufacturing capabilities in more low cost region such as Romania. Taiwan. Malaysia etc. This low-cost manufacturing facilities enable us provide a flexible. scalable global system that delivers superior operational performance and optimal results for our customers.

Our extensive global network of manufacturing facilities gives us significant scale and the flexibility to fulfill our customer requirements. This global presence provides design and consultancy solutions that are combined with core cable manufacturing. logistic services. and vertically integrated with our E commerce technologies. to optimize customer operations by lowering costs and reducing time to market.

Caledonian & Addison has been respected for its high standards of quality. excellent service level. competitive pricing and a unique and innovative spirit. With our latest technologies. we are both inspired and well-positioned to meet the changing needs of our customers. We have the resources to diversify and to enhance our product lines and services. We understand the need for change and with our accurate planning. we are ready for the future and the promise of new marketing opportunities. Our tradition of growth through excellence is assured.

Our Design Centers work closely with customers to constantly improve its standard range of products and technologies and to develop customized. country and industry-specific solutions. Caledonian & Addison has established an extensive network of design. manufacturing. and logistics facilities in the world’s major markets to serve the growing outsourcing needs of both multinational and regional customers.

Our Certificate

INTERNATIONAL FIRST CERTIFICATION

INTERNATIONAL FIRST CERTIFICATION

CERTIFICATE

Caledonian Cables Limited

20-22 Wenlock Road London N1 7GU England
Novus Seaham Spectrum 7 Spectrum Business Park Seaham SR7 7tt, England

IFC Global Certification confirms that the above-named organization's management system has been assessed and complies with the requirements of the following standard.

Standard:

ISO 9001:2015

Scope:

Manufacture, desing, supply, installation, assembly, commissioning, testing and maintenance of LV/MV/HV energy cables, data cables, instrumentation cables, telecommunication cables, fibre optic cables, railway cables, rolling stock cables, photovoltaic cables, marine cables, cabling system, cable accessories, ABC, AAC, ACSR, AAAC, power and distribution transformers, switchgears, communication systems, IT systems

Initial Date	: 1.02.2024
Issue Date	: 1.02.2024
Date of Validity	: 31.01.2025
Expiry Date	: 31.01.2027
Certificate No	: IFC-Q-2-24-2084

Approval

IFC GLOBAL SERTİFİKASYON MUAYENE VE EĞİTİM HİZMETLETİ ANONİM ŞİRKETİ
Adalet Mah. 2132/2 Sokak No:3 Trend Office D:45 Bayraklı İZMİR TÜRKİYE T: +90 850 304 35 00 F: +90 850 304 35 00
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www.ifcglobal.com.tr info@ifcglobal.com.tr

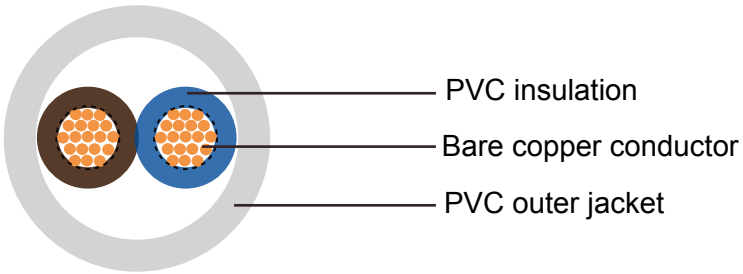
Table of Content

French Standard

H03VV-F/ H03VVH2-F

Application and Description

These cable types are especially suited for use on small appliances with low mechanical stress and for connection for light household appliances, e.g. kitchen utensils, desk lamps, floor lamps, vacuum cleaners, office machines, radios, etc. As far as these cables are admitted to the relevant specifications of the equipment, They are not permitted for use with cooking or heating apparatus. Cables with cross section 0.75 mm² are not suitable for outdoor use or use of industrial or farmer machineries. Max operating voltage in single or three phase system is Uo/U 330/330 volts. In a direct current system max operating voltage is Uo/U 495/495 volts.

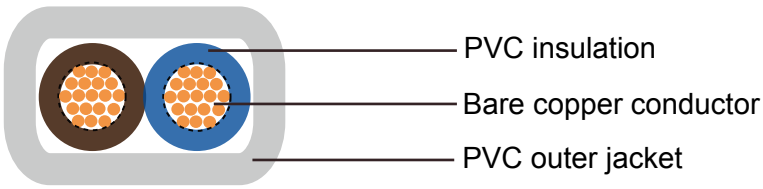


H03VV-F

H03VV-F

Standard and Approval

NF C 32-201-5



H03VVH2-F

H03VVH2-F

French Standard

Cable Construction

- Bare copper fine wire conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5, IEC 60228 cl. 5 and HD 383
- PVC core insulation T12 to VDE-0281 Part 1
- Color coded to VDE-0293-308
- Green-yellow grounding (3 conductors and above)
- PVC outer jacket TM2

Technical Characteristics

- Working voltage: 300/300 volts
- Test voltage: 2000 volts
- Flexing bending radius: 7.5 x Ø
- Static bending radius: 4 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -40º C to +70º C
- Short circuit temperature: +160º C
- Flame retardant: NF C 32-070
- Insulation resistance: 20 MΩ x km

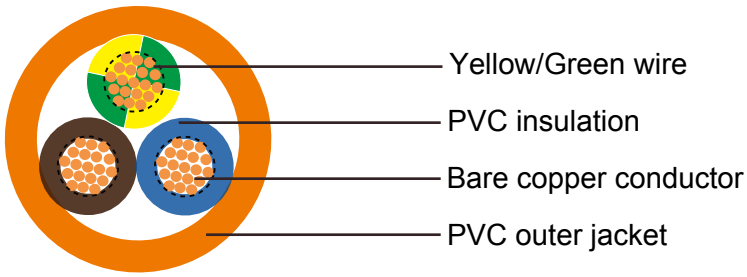
Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
H03VV-F						
20(16/32)	2 x 0.50	0.5	0.6	5	9.6	38
20(16/32)	3 x 0.50	0.5	0.6	5.4	14.4	45
20(16/32)	4 x 0.50	0.5	0.6	5.8	19.2	55
18(24/32)	2 x 0.75	0.5	0.6	5.5	14.4	46
18(24/32)	3 x 0.75	0.5	0.6	6	21.6	59
18(24/32)	4 x 0.75	0.5	0.6	6.5	28.8	72
18(24/32)	5 x 0.75	0.5	0.6	7.1	36.0	87
H03VVH2-F						
20(16/32)	2 x 0.50	0.5	0.6	3.2 x 5.2	9.7	32
18(24/32)	2 x 0.75	0.5	0.6	3.4 x 5.6	14.4	35

H03V2V2-F/ H03V2V2H2-F

Application and Description

These cables are suitable for domestic premises, kitchen, office for light service or light portable apparatuses. With their special insulation and sheath compounds these cables are adapt for apparatus in kitchen and heating and for use in zones with high temperatures (like lighting system apparatuses) without contact with warm parts and radiations. Unsuitable for outdoor use, in industrial and agricultural buildings or non-domestic portable tools. The maximum conductor temperature in normal use: 90°C.While high temperature use, skin contact must be avoided

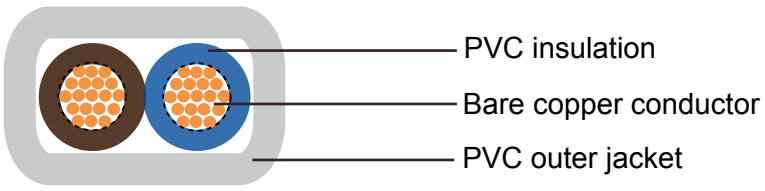


H03V2V2-F

H03V2V2-F

Standard and Approval

NF C 32-201-12



H03V2V2H2-F

H03V2V2H2-F

French Standard

Cable Construction

- Bare copper fine wire conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5, IEC 60228 cl. 5 and HD 383
- PVC core insulation T13 to VDE-0281 Part 1
- Color coded to VDE-0293-308
- PVC outer jacket TM3

Technical Characteristics

- Working voltage: 300/300 volts
- Test voltage: 3000 volts
- Flexing bending radius: 15 x Ø
- Static bending radius: 4 x Ø
- Flexing temperature: +5º C to +90º C
- Static temperature: -40º C to +90º C
- Short circuit temperature: +160º C
- Flame retardant: NF C 32-070
- Insulation resistance: 20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
H03V2V2-F						
20(16/32)	2 x 0.50	0.5	0.6	5	9.6	38
20(16/32)	3 x 0.50	0.5	0.6	5.4	14.4	45
20(16/32)	4 x 0.50	0.5	0.6	5.8	19.2	55
18(24/32)	2 x 0.75	0.5	0.6	5.5	14.4	46
18(24/32)	3 x 0.75	0.5	0.6	6	21.6	59
18(24/32)	4 x 0.75	0.5	0.6	6.5	28.8	72
H03V2V2H2-F						
20(16/32)	2 x 0.50	0.5	0.6	3.2 x 5.2	9.7	32
18(24/32)	2 x 0.75	0.5	0.3	3.4 x 5.6	14.4	35

H05VV-F/ H05VVH2-F

Application and Description

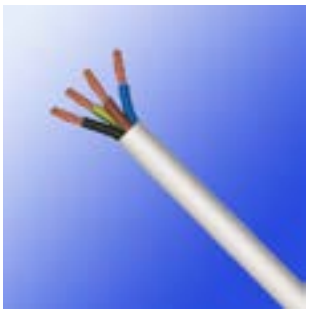
These cables are suited for medium mechanical stress in damp and wet environments such as refrigerators, washing machines, spin dryers and other appliances, as long as it meets applicable equipment specifications. These cables are also suited for cooking and heating apparatus, provided that the cable does not come into direct contact with the hot parts of the apparatus or with any other heat source. Further applications of this cable include: Fixed installation in furniture, partition walls, decorative covering, and in the hollow spaces of prefabricated building parts. They are not suitable for outdoor use, industrial (except clothing manufacture) or farming applications. Max operating voltage in single or three phase system is Uo/U 318/550 volts. In a direct system, max operating voltage is Uo/U 413/825 volts.

Standard and Approval

NF C 32-201-5

Cable Construction

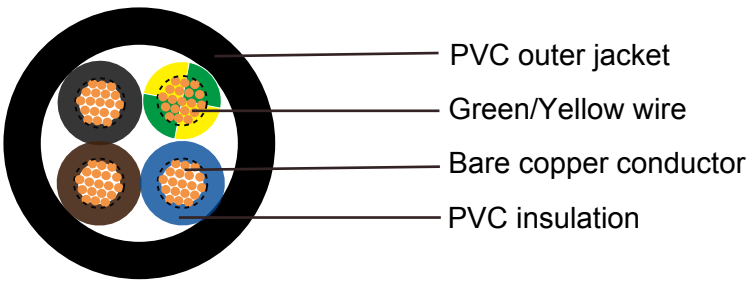
- Bare copper fine wire conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5, IEC 60228 cl. 5 and HD 383
- PVC core insulation T12 to VDE-0281 Part 1
- Color coded to VDE-0293-308
- Green-yellow grounding (3 conductors and above)
- PVC outer jacket TM2



H05VV-F

Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 2000 volts
- Flexing bending radius: 7.5 x Ø
- Static bending radius: 4 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -40º C to +70º C
- Short circuit temperature: +160º C
- Flame retardant: NF C 32-070
- Insulation resistance: 20 MΩ x km



H05VV-F

French Standard

H05VVH2-F

H05VVH2-F

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
H05VV-F						
18(24/32)	2 x 0.75	0.6	0.8	6.4	14.4	57
18(24/32)	3 x 0.75	0.6	0.8	6.8	21.6	68
18(24/32)	4 x 0.75	0.6	0.8	7.4	29	84
18(24/32)	5 x 0.75	0.6	0.9	8.5	36	106
17(32/32)	2 x 1.00	0.6	0.8	6.8	19	65
17(32/32)	3 x 1.00	0.6	0.8	7.2	29	79
17(32/32)	4 x 1.00	0.6	0.9	8.0	38	101
17(32/32)	5 x 1.00	0.6	0.9	8.8	48	123
16(30/30)	2 x 1.50	0.7	0.8	7.6	29	87
16(30/30)	3 x 1.50	0.7	0.9	8.2	43	111
16(30/30)	4 x 1.50	0.7	1.0	9.2	58	142
16(30/30)	5 x 1.50	0.7	1.1	10.5	72	176
14(50/30)	2 x 2.50	0.8	1.0	9.2	48	134
14(50/30)	3 x 2.50	0.8	1.1	10.1	72	169
14(50/30)	4 x 2.50	0.8	1.1	11.2	96	211
14(50/30)	5 x 2.50	0.8	1.2	12.4	120	262
12(56/28)	3 x 4.00	0.8	1.2	11.3	115	233
12(56/28)	4 x 4.00	0.8	1.2	12.5	154	292
12(56/28)	5 x 4.00	0.8	1.4	13.7	192	369
10(84/28)	3 x 6.00	0.8	1.1	13.1	181	328
10(84/28)	4 x 6.00	0.8	1.3	13.9	230	490
H05VVH2-F						
18(24/32)	2 x 0.75	0.6	0.8	4.2 x 6.8	14.4	48
17(32/32)	2 x 1.00	0.6	0.8	4.4 x 7.2	19.2	57

H05V2V2-F/ H05V2V2H2-F

Application and Description

These cables are suitable for domestic premises, kitchen, office for light service or light portable apparatuses. With their special insulation and sheath compounds these cables are adapt for apparatus in kitchen and heating and for use in zones with high temperature (like lighting system apparatuses) without contact with warm parts and radiations. Unsuitable for outdoor use, in industrial and agricultural buildings or non-domestic portable tools. The maximum conductor temperature in normal use: 90°C.While high temperature use, skin contact must be avoided

Standard and Approval

NF C 32-201-12

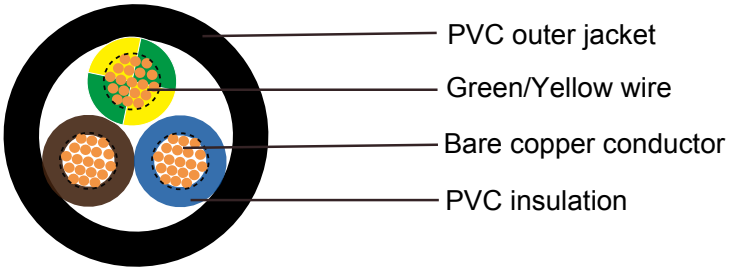
Cable Construction

- Bare copper fine wire conductor
- Stranded to DIN VDE 0295 cl. 5, IEC 60228 cl. 5 and HD 383
- PVC core insulation T13 to VDE-0281 Part 1
- Green-yellow grounding (3 conductors and above)
- Color coded to VDE-0293-308
- PVC outer jacket TM3

H05V2V2-F

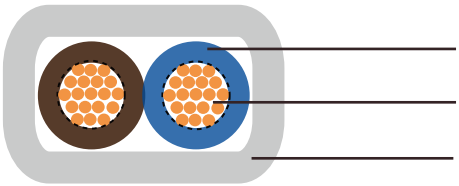
Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 2000 volts
- Flexing bending radius: 15 x Ø
- Static bending radius: 4 x Ø
- Flexing temperature: +5º C to +90º C
- Static temperature: -40º C to +90º C
- Short circuit temperature: +160º C
- Flame retardant: NF C 32-070
- Insulation resistance: 20 MΩ x km



H05V2V2-F

French Standard



H05V2V2H2-F

H05V2V2H2-F

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
H05V2V2-F						
18(24/32)	2 x 0.75	0.6	0.8	6.2	14.4	54.2
18(24/32)	3 x 0.75	0.6	0.8	6.6	21.6	65
18(24/32)	4 x 0.75	0.6	0.8	7.1	29	77.7
18(24/32)	5 x 0.75	0.6	0.9	8	36	97.3
17(32/32)	2 x 1.00	0.6	0.8	6.4	19	60.5
17(32/32)	3 x 1.00	0.6	0.8	6.8	29	73.1
17(32/32)	4 x 1.00	0.6	0.9	7.6	38	93
17(32/32)	5 x 1.00	0.6	0.9	8.3	48	111.7
16(30/30)	2 x 1.50	0.7	0.8	7.4	29	82.3
16(30/30)	3 x 1.50	0.7	0.9	8.1	43	104.4
16(30/30)	4 x 1.50	0.7	1.0	9	58	131.7
16(30/30)	5 x 1.50	0.7	1.1	10	72	163.1
14(50/30)	2 x 2.50	0.8	1.0	9.2	48	129.1
14(50/30)	3 x 2.50	0.8	1.1	10	72	163
14(50/30)	4 x 2.50	0.8	1.1	10.9	96	199.6
14(50/30)	5 x 2.50	0.8	1.2	12.4	120	245.4
12(56/28)	3 x 4.00	0.8	1.2	11.3	115	224
12(56/28)	4 x 4.00	0.8	1.2	12.5	154	295
12(56/28)	5 x 4.00	0.8	1.4	13.7	192	361
10(84/28)	3 x 6.00	0.8	1.1	13.1	181	328
10(84/28)	4 x 6.00	0.8	1.3	13.9	230	490
H05V2V2H2-F						
18(24/32)	2 x 0.75	0.6	0.8	4.2 x 6.8	14.1	48
17(32/32)	2 x 1.00	0.6	0.8	4.4 x 7.2	19	57

H05RN-F/H05RNH2-F

Application and Description

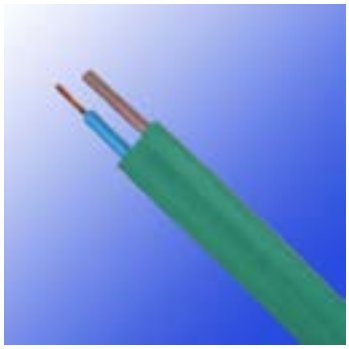
These cables are flexible, mainly recommended for use in electrical equipment under low stress in dry, damp and wet areas in indoor or outdoor environments. Commonly used for connection of electrical appliances when exposed to low mechanical strain in household, offices and for light utilities. Anywhere where there is minimal physical damage. Also suitable for fixed installation in furniture, decorative coverings, wall partitions and pre-fabricated building parts. Max operating voltage in single or three phase system is Uo/U 318/550 volts. In a direct current system max operating voltage is Uo/U 413/825 volts. They are ozone resistant, oil & fat resistant

Standard and Approval

NF C 32-102-4

Cable Construction

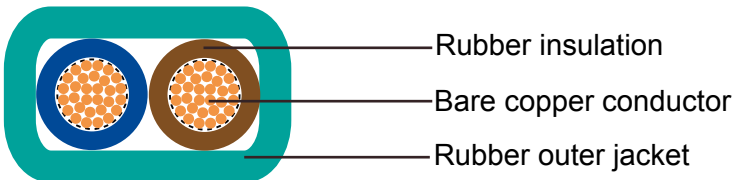
- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- Rubber core insulation EI4 to VDE-0282 Part-1
- Color code VDE-0293-308
- Green-yellow grounding, 3 conductors and above
- Polychloroprene rubber (neoprene) jacket EM2



H05RNH2-F

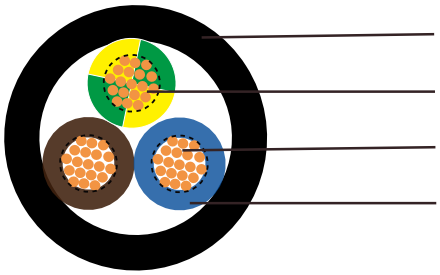
Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 2000 volts
- Flexing bending radius: 7.5 x Ø
- Fixed bending radius: 4.0 x Ø
- Temperature Range: -30º C to +60º C
- Short circuit temperature: +200 º C
- Flame retardant: NF C 32-070
- Insulation resistance: 20 MΩ x km

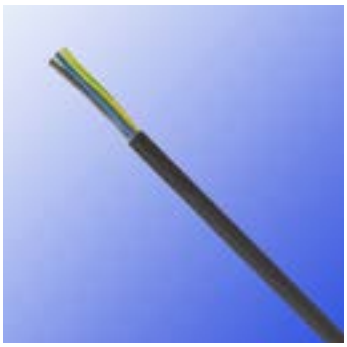


H05RNH2-F

French Standard



H05RN-F



H05RN-F

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm (min-max)*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
H05RN-F						
18(24/32)	2 x 0.75	0.6	0.8	5.7 - 7.4	14.4	80
18(24/32)	3 x 0.75	0.6	0.9	6.2 - 8.1	21.6	95
18(24/32)	4 x 0.75	0.6	0.9	6.8 - 8.8	30	105
17(32/32)	2 x 1	0.6	0.9	6.1 - 8.0	19	95
17(32/32)	3 x 1	0.6	0.9	6.5 - 8.5	29	115
17(32/32)	4 x 1	0.6	0.9	7.1 – 9.2	38	142
16(30/30)	3 x 1.5	0.8	1.0	8.6 - 11.0	29	105
16(30/30)	4 x 1.5	0.8	1.1	9.5 - 12.2	39	129
16(30/30)	5 x 1.5	0.8	1.1	10.5 - 13.5	48	153
H05RNH2-F						
16(30/30)	2 x 1.5	0.6	0.8	5.25±0.15x13.50±0.30	14.4	80
14(50/30)	2 x 2.5	0.6	0.9	5.25±0.15x13.50±0.30	21.6	95

H05RR-F

Application and Description

These cables are flexible rubber insulated; rubber jacketed harmonized cord, recommended for use in equipment, which is subject to light and medium stresses in both dry and damp environments. For use with electronics and electrical equipment such as appliances, small hand tools and office equipment They can be found in flat irons, soldering irons, kitchen aids, toasters, stoves and in connections with light commercial electric tools. Also suitable for fixed installation in furniture, decorative coverings, wall partitions and pre-fabricated building parts. Max operating voltage in single or three phase system is Uo/U 300/500 volts. In a direct current system max operating voltage is Uo/U 413/825 volts. Outdoor use is permitted only for a short time. They are ozone resistant, oil & fat resistant.

Standard and Approval

NF C 32-102-4

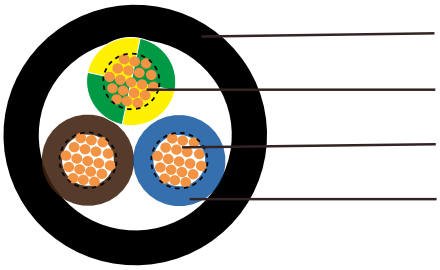
Cable Construction

- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- Rubber core insulation EI4 to VDE-0282 Part-1
- Color code VDE-0293-308 and HD 186
- Green-yellow grounding, 3 conductors and above
- Polychloroprene rubber (neoprene) jacket EM3

Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 2000 volts
- Flexing bending radius: 8 x Ø
- Fixed bending radius: 6 x Ø
- Temperature range: -30º C to +60º C
- Short circuit temperature: +200 º C
- Flame retardant: NF C 32-070
- Insulation resistance: 20 MΩ x km

French Standard



H05RR-F

H05RR-F

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm {min-max}*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
18(24/32)	2 x 0.75	0.6	0.8	5.7-7.4	14.4	61
18(24/32)	3 x 0.75	0.6	0.9	6.2-8.1	21.6	75
18(24/32)	4 x 0.75	0.6	0.9	6.8-8.8	28.8	94
18(24/32)	5 x 0.75	0.6	1.0	7.6-9.9	36.0	110
17(32/32)	2 x 1	0.6	0.9	6.1-8.0	19.0	73
17(32/32)	3 x 1	0.6	0.9	6.5-8.5	29.0	86
17(32/32)	4 x 1	0.6	0.9	7.1-9.3	38.4	105
17(32/32)	5 x 1	0.6	1.0	8.0-10.3	48.0	130
16(30/30)	2 x 1.5	0.8	1.0	7.6-9.8	29.0	115
16(30/30)	3 x 1.5	0.8	1.0	8.0-10.4	43.0	135
16(30/30)	4 x 1.5	0.8	1.1	9.0-11.6	58.0	165
16(30/30)	5 x 1.5	0.8	1.1	9.8-12.7	72.0	190
14(50/30)	2 x 2.5	0.9	1.1	9.0-11.6	48.0	160
14(50/30)	3 x 2.5	0.9	1.1	9.6-12.4	72.0	191
14(50/30)	4 x 2.5	0.9	1.2	10.7-13.8	96.0	235
14(50/30)	5 x 2.5	0.9	1.3	11.9-15.3	120.0	285

H07RN-F

Application and Description

These cables are designed to provide high flexibility and have the capacity to withstand weather, oils/greases, mechanical and thermal stresses. Applications include handling equipment, mobile power supplies, worksites, stage and audio visual equipment, port areas and dams. Also suitable for fixed installations on plaster, temporary buildings and residential barracks and for use in drainage and water treatment, cold environments and severe industrial environments. These cables are resistant to flame, acids, and oil penetration.

Standard and Approval

NF C 32-102-4 ,EN 50525-2-21,EN 60332-1/NF C32-070 2.1(C2),EN 50575(Eca),CE Approval

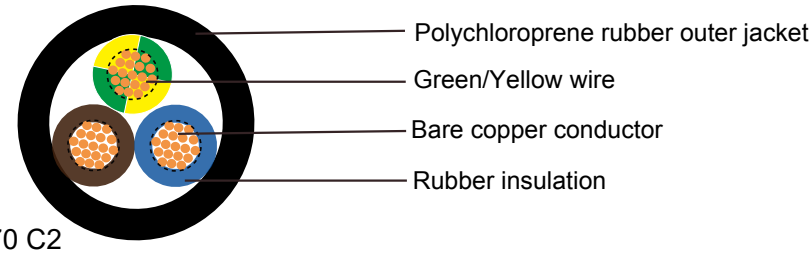
Cable Construction

- Fine bare copper strands
- Strands to IEC/EN 60228 Class-5
- Rubber core insulation
- Color code to XP C32-321
- Polychloroprene rubber (neoprene) jacket

H07RN-F

Technical Characteristics

- Working voltage: 450/750 volts
- Test voltage: 2500 volts
- Minumum bending radius: 6 x Ø
- Operation temperature range:
  -25º C to +60º C
- Short circuit temperature: +200 º C
- Flame retardant: EN 60332-1/NF C 32-070 C2



H07RN-F

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm min-max*	Approx. Copper Weight *kg/km*	Approx. Weight *kg/km*
17(32/32)	2 x 1	0.8	1.3	7.7-10	19	89
17(32/32)	3 x 1	0.8	1.4	8.3-10.7	29	111
17(32/32)	4 x 1	0.8	1.5	9.2-11.9	38	146
16(30/30)	1 x 1.5	0.8	1.4	5.7-7.1	14.4	59
16(30/30)	2 x 1.5	0.8	1.5	8.5-11.0	29	135
16(30/30)	3 x 1.5	0.8	1.6	9.2-11.9	43	165
16(30/30)	4 x 1.5	0.8	1.7	10.2-13.1	58	200
16(30/30)	5 x 1.5	0.8	1.8	11.2-14.4	72	240
16(30/30)	7 x 1.5	0.8	2.6	14.5-17.5	101	385
16(30/30)	12 x 1.5	0.8	2.9	17.6-22.4	173	516
16(30/30)	19 x 1.5	0.8	3.2	20.7-26.3	274	800
16(30/30)	24 x 1.5	0.8	3.5	24.3-30.7	346	882
14(50/30)	1 x 2.5	0.9	1.4	6.3-7.9	24	72
14(50/30)	2 x 2.5	0.9	1.7	10.2-13.1	48	195
14(50/30)	3 x 2.5	0.9	1.8	10.9-14.0	72	235
14(50/30)	4 x 2.5	0.9	1.9	12.1-15.5	96	290
14(50/30)	5 x 2.5	0.9	2	13.3-17.0	120	345
14(50/30)	7 x 2.5	0.9	2.8	16.5-20.0	168	520
14(50/30)	12 x 2.5	0.9	3.1	20.6-26.2	288	810
14(50/30)	19 x 2.5	0.9	3.5	25.5-31.0	456	1200
14(50/30)	24 x 2.5	0.9	3.9	28.8-36.4	576	1650
12(56/28)	1 x 4	1	1.5	7.2-9.0	38	99
12(56/28)	2 x 4	1	1.8	11.8-15.1	77	270
12(56/28)	3 x 4	1	1.9	12.7-16.2	115	320
12(56/28)	4 x 4	1	2	14.0-17.9	154	395
12(56/28)	5 x 4	1	2.2	15.6-19.9	192	485
12(56/28)	7 x 4	1	3.1	18.2-21.8	269	681
10(84/28)	1 x 6	1	1.6	7.9-9.8	58	130
10(84/28)	3 x 6	1	2.1	14.1-18.0	173	495
10(84/28)	4 x 6	1	2.3	15.7-20.0	230	610
10(84/28)	5 x 6	1.2	2.5	17.5-22.2	288	760
8(80/26)	1 x 10	1.2	1.8	9.5-11.9	96	230
8(80/26)	3 x 10	1.2	3.3	19.1-24.2	288	880
8(80/26)	4 x 10	1.2	3.4	20.9-26.5	384	1060
8(80/26)	5 x 10	1.2	3.6	22.9-29.1	480	1300
6(128/26)	1 x 16	1.2	1.9	10.8-13.4	154	320
6(128/26)	3 x 16	1.2	3.5	21.8-27.6	461	1090
6(128/26)	4 x 16	1.2	3.6	23.8-30.1	614	1345
6(128/26)	5 x 16	1.2	3.9	26.4-33.3	768	1680

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm min-max*	Approx. Copper Weight *kg/km*	Approx. Weight *kg/km*
4(200/26)	1 x25	1.4	2	12.7-15.8	240	450
4(200/26)	4 x 25	1.4	4.1	28.9-36.6	960	1995
4(200/26)	5 x 25	1.4	4.4	32.0-40.4	1200	2470
2(280/26)	1 x 35	1.4	2.2	14.3-17.9	336	605
2(280/26)	3 x 35	1.4	4.1	29.3-37.1	1008	1900
2(280/26)	4 x 35	1.4	4.4	32.5-41.1	1344	2645
2(280/26)	5 x 35	1.4	4.7	37.0-45.0	1680	2810
1(400/26)	1 x 50	1.6	2.4	16.5-20.6	480	825
1(400/26)	4 x 50	1.6	4.8	37.7-47.5	1920	3635
1(400/26)	5 x 50	1.6	5.1	40.0-50.8	2400	4050
2/0(356/24)	1 x 70	1.6	2.6	18.6-23.3	672	1090
2/0(356/24)	4 x 70	1.6	5.2	42.7-54.0	2688	4830
3/0(485/24)	1 x 95	1.8	2.8	20.8-26.0	912	1405
3/0(485/24)	4 x 95	1.8	5.9	48.4-61.0	3648	6320
4/0(614/24)	1x 120	1.8	3	22.8-28.6	1152	1746
4/0(614/24)	4 x 120	1.8	6	53.0-66.0	4608	6830
300MCM (765/24)	1 x 150	2	3.2	25.2-31.4	1440	1887
300MCM (765/24)	4 x 150	2	6.4	58.0-73.0	5760	8320
350MCM (944/24)	1 x 185	2.2	3.4	27.6-34.4	1776	2274
350MCM (944/24)	4 x 185	2.2	6.8	64.0-80.0	7104	9800
500MCM (1221/24)	1x 240	2.4	3.5	30.6-38.3	23.4	2956
500MCM (1221/24)	4x 240	2.4	7.0	72.0-90.0	9216	12100
-	1 x 300	2.6	3.6	33.5-41.9	2880	3479

H07RN8-F

Application and Description

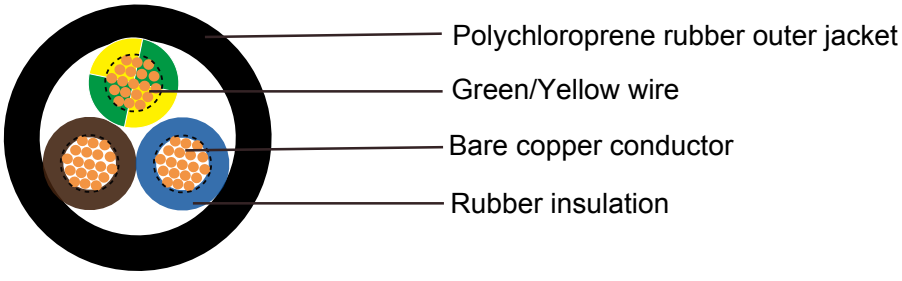
These cables particularly for use in fresh water up to 10 m depth with a maximum water temperature up to 40°C , such as the connection of submersible pumps or similar applications. Not suitable for underwater power transmission or installation in a watercourse, or where it is possible that mechanical damage might occur and cause a hazard. Indirect underground installation is allowed provided that there is mechanically protection of the cables. These cables are manufactured according to the Standard and Approval CEI 20-19/16 (CENELEC HD 22.16). It is the only cable that the installation Standard and Approval CEI 64-8 at section 702 allows for installation in swimming pools and fountains. For connections liable to moderate mechanical stresses, i.e. industrial or agricultural workshop apparatus, large boilers, heater plates, electric tools such as drills and disk saws, electric appliances, portable motors and generators on building sites; also for fixed installations along floors or shelving on temporary job sites, for connecting structural elements in lifting apparatus, machinery, etc. Suitable for applications up to 1000 V for adequately protected fixed installations (i.e. inside pipes or equipment) as well as for rotor connections to lifting apparatus motors. They are Ozone, UV & weather resistant

Standard and Approval

NF C 32-102-16

Cable Construction

- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- Rubber core insulation EI4 to VDE-0282 Part-1
- Color code VDE-0293-308 and HD 186
- Polychloroprene rubber (neoprene) jacket EM2



H07RN8-F

Technical Characteristics

- Working voltage: 450/750 volts
- Test voltage: 2500 volts
- Flexing bending radius: 6.0 x Ø
- Fixed bending radius: 4.0 x Ø
- Flexing Temperature: -25º C to +60º C
- Fixed Temperature: -40º C to +60º C
- Max Water Temperature: +40º C
- Short circuit temperature: +250 º C
- Flame retardant: NF C 32-070
- Insulation resistance: 20 MΩ x km

H07RN8-F

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm min-max*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
17(32/32)	2 x 1	0.8	1.3	7.7-10	19	89
17(32/32)	3 x 1	0.8	1.4	8.3-10.7	29	111
17(32/32)	4 x 1	0.8	1.5	9.2-11.9	38	146
16(30/30)	1 x 1.5	0.8	1.4	5.7-7.1	14.4	59
16(30/30)	2 x 1.5	0.8	1.5	8.5-11.0	29	135
16(30/30)	3 x 1.5	0.8	1.6	9.2-11.9	43	165
16(30/30)	4 x 1.5	0.8	1.7	10.2-13.1	58	200
16(30/30)	5 x 1.5	0.8	1.8	11.2-14.4	72	240
16(30/30)	7 x 1.5	0.8	2.6	14.5-17.5	101	385
16(30/30)	12 x 1.5	0.8	2.9	17.6-22.4	173	516
16(30/30)	19 x 1.5	0.8	3.2	20.7-26.3	274	800
16(30/30)	24 x 1.5	0.8	3.5	24.3-30.7	346	882
14(50/30)	1 x 2.5	0.9	1.4	6.3-7.9	24	72
14(50/30)	2 x 2.5	0.9	1.7	10.2-13.1	48	195
14(50/30)	3 x 2.5	0.9	1.8	10.9-14.0	72	235
14(50/30)	4 x 2.5	0.9	1.9	12.1-15.5	96	290
14(50/30)	5 x 2.5	0.9	2	13.3-17.0	120	345
14(50/30)	7 x 2.5	0.9	2.8	16.5-20.0	168	520
14(50/30)	12 x 2.5	0.9	3.1	20.6-26.2	288	810
14(50/30)	19 x 2.5	0.9	3.5	25.5-31.0	456	1200
14(50/30)	24 x 2.5	0.9	3.9	28.8-36.4	576	1650
12(56/28)	1 x 4	1	1.5	7.2-9.0	38	99
12(56/28)	2 x 4	1	1.8	11.8-15.1	77	270
12(56/28)	3 x 4	1	1.9	12.7-16.2	115	320
12(56/28)	4 x 4	1	2	14.0-17.9	154	395

French Standard

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm min-max*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
12(56/28)	5 x 4	1	2.2	15.6-19.9	192	485
12(56/28)	7 x 4	1	3.1	18.2-21.8	269	681
10(84/28)	1 x 6	1	1.6	7.9-9.8	58	130
10(84/28)	3 x 6	1	2.1	14.1-18.0	173	495
10(84/28)	4 x 6	1	2.3	15.7-20.0	230	610
10(84/28)	5 x 6	1.2	3.6	17.5-22.2	288	760
8(80/26)	1 x 10	1.2	1.8	9.5-11.9	96	230
8(80/26)	3 x 10	1.2	3.3	19.1-24.2	288	880
8(80/26)	4 x 10	1.2	3.4	20.9-26.5	384	1060
8(80/26)	5 x 10	1.2	3.6	22.9-29.1	480	1300
6(128/26)	1 x 16	1.2	1.9	10.8-13.4	154	320
6(128/26)	3 x 16	1.2	3.5	21.8-27.6	461	1090
6(128/26)	4 x 16	1.2	3.6	23.8-30.1	614	1345
6(128/26)	5 x 16	1.2	3.9	26.4-33.3	768	1680
4(200/26)	1 x25	1.4	2	12.7-15.8	240	450
4(200/26)	4 x 25	1.4	4.1	28.9-36.6	960	1995
4(200/26)	5 x 25	1.4	4.4	32.0-40.4	1200	2470
2 (280/26)	1 x 35	1.4	2.2	14.3-17.9	336	605
2 (280/26)	3 x 35	1.4	4.1	29.3-37.1	1008	1900
2 (280/26)	4 x 35	1.4	4.4	32.5-41.1	1344	2645
2 (280/26)	5 x 35	1.4	4.7	37.0-45.0	1680	2810
1(400/26)	1 x 50	1.6	2.4	16.5-20.6	480	825
1(400/26)	4 x 50	1.6	4.8	37.7-47.5	1920	3635
1(400/26)	5 x 50	1.6	5.1	40.0-50.8	2400	4050
2/0(356/24)	1 x 70	1.6	2.6	18.6-23.3	672	1090
2/0(356/24)	4 x 70	1.6	5.2	42.7-54.0	2688	4830
3/0(485/24)	1 x 95	1.8	2.8	20.8-26.0	912	1405
3/0(485/24)	4 x 95	1.8	5.9	48.4-61.0	3648	6320
4/0(614/24)	1x 120	1.8	3	22.8-28.6	1152	1746
4/0(614/24)	4 x 120	1.8	6	53.0-66.0	4608	6830
300 MCM (765/24)	1 x 150	2	3.2	25.2-31.4	1440	1887
300 MCM (765/24)	4 x 150	2	6.4	58.0-73.0	5760	8320
350 MCM (944/24)	1 x 185	2.2	3.4	27.6-34.4	1776	2274
350 MCM (944/24)	4 x 185	2.2	6.8	64.0-80.0	7104	9800
500 MCM (1221/24)	1x 240	2.4	3.5	30.6-38.3	23.4	2956
500 MCM (1221/24)	4x 240	2.4	7.2	72.0-90.0	9216	12100
-	1 x 300	2.6	3.6	33.5-41.9	2880	3479

H05BN4-F

Application and Description

These EPR (ethylen-propylen rubber) insulated and CSP (chlorosulphonated polyethylene rubber or similar) sheathed electric cables can be used either in dry, humid or wet places or in contact with oil or grease, in weather conditions and under weak mechanical stress, for example for power supply to small appliances in industrial plants, machine shops, heating plates, portable lamps, farming equipment etc. They are also suitable for caravans and camping equipment... The maximum conductor temperature in normal use: 90°C. While high temperature use, skin contact must be avoided.

Standard and Approval

NF C 32-102-12,ROHS compliant, VDE 0282 Part-12, IEC 60245-4

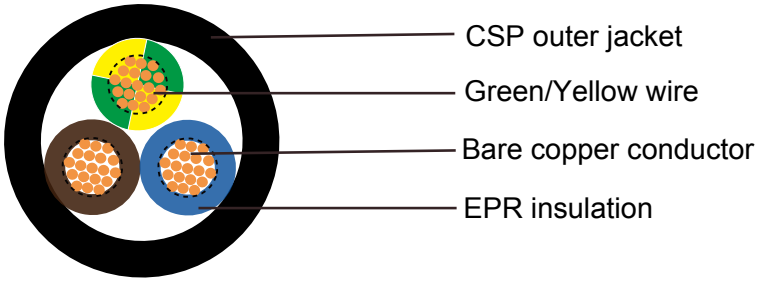
Cable Construction

- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- EPR(Ethylene Propylene Rubber) rubber EI7 insulation
- Color code VDE-0293-308
- CSP(Chlorosulphonated Polyethylene) outer jacket EM7

Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 2000 volts
- Flexing bending radius: 6.0 x Ø
- Fixed bending radius: 4.0 x Ø
- Temperature Range: -20º C to +90º C
- Maximum Short Circuit Temperature: +250º C
- Flame retardant: NF C 32-070
- Insulation resistance: 20 MΩ x km

French Standard



H05BN4-F

H05BN4-F

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/Km*	Nominal Weight *kg/Km*
18(24/32)	2 x 0.75	0.6	0.8	6.1	29	54
18(24/32)	3 x 0.75	0.6	0.9	6.7	43	68
18(24/32)	4 x 0.75	0.6	0.9	7.3	58	82
18(24/32)	5 x 0.75	0.6	1.0	8.1	72	108
17(32/32)	2 x 1	0.6	0.9	6.6	19	65
17(32/32)	3 x 1	0.6	0.9	7.0	29	78
17(32/32)	4 x 1	0.6	0.9	7.6	38	95
17(32/32)	5 x 1	0.6	1.0	8.5	51	125

H07BN4-F WIND90

Application and Description

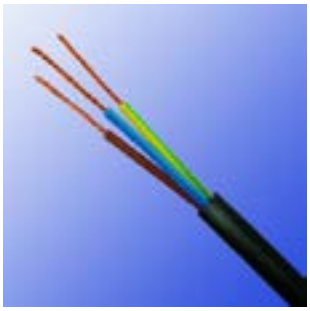
These cables are made with synthetic rubbers having an excellent temperature resistance and can be used either in dry, humid or wet places or in contact with oil or grease, in weather conditions and under medium mechanical stress, for example power supply to equipment in industrial plants, large size boilers, heating plates, portable lamps, electrical tools such as drilling machines, disk saws, portable engines and machines, building and farming equipments etc. These cables are also suitable for stationary equipments, for example designed for wind-tower application, the particular conductor Cable Construction and the used materials have improved the cable torsion resistance (max 150°/m), key requirement for drop cables in wind-generators, on plaster in temporary buildings and builders huts, and wiring in machinery elevators or similar. Suitable for caravans and camping equipment. Especially recommended for service temperature up to 90º C together with good resistance to hot grease and oil. Therefore these cables are ideal for use in plants and industries dealing with grease, oil or oil emulsion treatments, transformation or handling.

Standard and Approval

NF C 32-102-12

Cable Construction

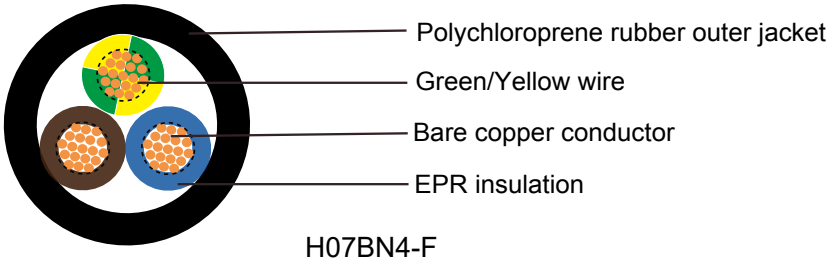
- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- EPR(Ethylene Propylene Rubber) rubber EI7 insulation
- Color code VDE-0293-308
- Special polychloroprene rubber outer jacket EM7



H07BN4-F

Technical Characteristics

- Working voltage: 450/750 volts
- Test voltage: 2500 volts
- Flexing bending radius: 6.0 x Ø
- Fixed bending radius: 4.0 x Ø
- Temperature Range: -40º C to +90º C
- Wind energy: -15º C to +90º C



H07BN4-F

- Maximum Short Circuit Temperature: +250º C
- Flame retardant: NF C 32-070C2/NF C 32-070
- Insulation resistance: 20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Thickness of Insulation mm	Nominal Thickness of Sheath mm	Nominal Overall Diameter mm	Nominal Weight kg/km
17(32/32)	2 x 1	0.8	1.3	8.2	93
17(32/32)	3 x 1	0.8	1.4	8.9	114
17(32/32)	4 x 1	0.8	1.5	9.8	139
16(30/30)	1 x 1.5	0.8	1.4	5.9	50
16(30/30)	2 x 1.5	0.8	1.5	9.3	118
16(30/30)	3 x 1.5	0.8	1.6	10.0	144
16(30/30)	4 x 1.5	0.8	1.7	11.0	177
16(30/30)	5 x 1.5	0.8	1.8	12.1	226
16(30/30)	7 x 1.5	0.8	2.6	14.7	385
16(30/30)	12 x 1.5	0.8	2.9	18.8	516
16(30/30)	19 x 1.5	0.8	3.2	22.0	800
16(30/30)	24 x 1.5	0.8	3.5	25.7	882
14(50/30)	1 x 2.5	0.9	1.4	6.5	65
14(50/30)	2 x 2.5	0.9	1.7	10.9	172
14(50/30)	3 x 2.5	0.9	1.8	11.7	210
14(50/30)	4 x 2.5	0.9	1.9	12.8	257
14(50/30)	5 x 2.5	0.9	2	14.1	329
14(50/30)	7 x 2.5	0.9	2.8	17.1	445
14(50/30)	12 x 2.5	0.9	3.1	22.1	702
14(50/30)	19 x 2.5	0.9	3.5	26.0	1030
14(50/30)	24 x 2.5	0.9	3.9	30.4	1312
12(56/28)	1 x 4	1	1.5	7.4	89
12(56/28)	2 x 4	1	1.8	12.6	238
12(56/28)	3 x 4	1	1.9	13.5	292
12(56/28)	4 x 4	1	2	14.8	359
12(56/28)	5 x 4	1	2.2	16.3	422
12(56/28)	7 x 4	1	3.1	19.6	618
10(84/28)	1 x 6	1	1.6	8.1	115
10(84/28)	2 x 6	1	1.8	13.8	282
10(84/28)	3 x 6	1	2.1	14.8	355
10(84/28)	4 x 6	1	2.3	16.4	449
10(84/28)	5 x 6	1.2	3.6	18.1	567
8(80/26)	1 x 10	1.2	1.8	10.4	190
8(80/26)	2 x 10	1.2	2.3	19.4	539
8(80/26)	3 x 10	1.2	3.3	20.7	674
8(80/26)	4 x 10	1.2	3.4	22.6	833

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Thickness of Insulation mm	Nominal Thickness of Sheath mm	Nominal Overall Diameter mm	Nominal Weight kg/km
8(80/26)	5 x 10	1.2	3.6	24.8	1010
6(128/26)	1 x 16	1.2	1.9	11.6	259
6(128/26)	2 x 16	1.2	2.8	21.8	722
6(128/26)	3 x 16	1.2	3.5	23.3	913
6(128/26)	4 x 16	1.2	3.6	25.4	1138
6(128/26)	5 x 16	1.2	3.9	28.1	1400
4(200/26)	1 x25	1.4	2	13.7	375
4(200/26)	2 x 25	1.4	3.3	25.9	1043
4(200/26)	4 x 25	1.4	4.1	30.8	1714
4(200/26)	5 x 25	1.4	4.4	33.9	2096
2(280/26)	1 x 35	1.4	2.2	15.4	492
2(280/26)	3 x 35	1.4	4.1	31.0	1745
2(280/26)	4 x 35	1.4	4.4	34.3	2204
2(280/26)	5 x 35	1.4	4.7	39.6	2810
1(400/26)	1 x 50	1.6	2.4	17.7	675
1(400/26)	3 x 50	1.6	3.6	35.8	2409
1(400/26)	4 x 50	1.6	4.8	39.6	3029
1(400/26)	5 x 50	1.6	5.1	44.1	4050
2/0(356/24)	1 x 70	1.6	2.6	20.0	908
2/0(356/24)	3 x 70	1.6	4.2	40.5	3211
2/0(356/24)	4 x 70	1.6	5.2	44.9	4121
3/0(485/24)	1 x 95	1.8	2.8	22.1	1171
3/0(485/24)	3 x 95	1.8	4.8	45.1	4210
3/0(485/24)	4 x 95	1.8	5.9	50.4	5361
4/0(614/24)	1x 120	1.8	3	24.5	1445
4/0(614/24)	3 x 120	1.8	4.8	49.9	5205
4/0(614/24)	4 x 120	1.8	6	55.3	6546
300 MCM (765/24)	1 x 150	2	3.2	26.9	1783
300 MCM (765/24)	3 x 150	2□	5.2□	54.8	6389
300 MCM (765/24)	4 x 150	2□	6.4□	60.9	8095
350 MCM (944/24)	1 x 185	2.2	3.4	28.9	2125
350 MCM (944/24)	4 x 185	2.2□	6.8□	65.7	9652
500 MCM (1221/24)	1x 240	2.4	3.5	32.6	2733
500 MCM (1221/24)	4x 240	2.4□	7.2□	75.5	12614
-	1 x 300	2.6	3.6	36.5	3348

H05V-K

Application and Description

These insulated wires are determined for installation to the inside of apparatus as well as for the protective laying to the lightings, in dry rooms, in production facilities, switch and distributors boards, in tubes, under and surface mounting of plasters.

Standard and Approval

NF C 32-201-3

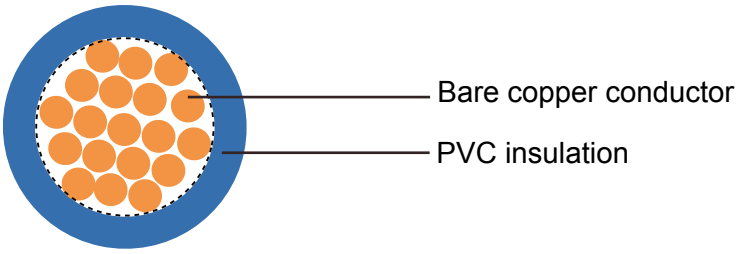
Cable Construction

- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- Special PVC TI1 core insulation
- Cores to VDE-0293 colors on chart

H05V-K

Technical Characteristics

- Working voltage: 300/500v
- Test voltage: 2000 volts
- Flexing bending radius: 12.5 x Ø
- Static bending radius: 12.5 x Ø
- Flexing temperature: -5° C to +70° C
- Static temperature: -30° C to +80° C
- Flame retardant: NF C 32-070
- Insulation resistance: 10 MΩ x km



H05V-K

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
20(16/32)	1 x 0.5	0,6	2.1	4.9	10
18(24/32)	1 x 0.75	0,6	2.4	7.2	13
17(32/32)	1 x 1	0,6	2.6	9.6	15

H07V-K

Application and Description

These are not suitable to be installed for laying in tubes, under and surface mounting of plaster and also in closed installation conduits. These are not allowed to install for direct laying on cable trays, channel or tanks. These types are permitted for the inner wiring of equipment, distributor and switchboards and also for protective laying to the lightings with a nominal voltage up to 1000 V alternating current or up to 750 V direct current against earth.

Standard and Approval

NF C 32-201-3

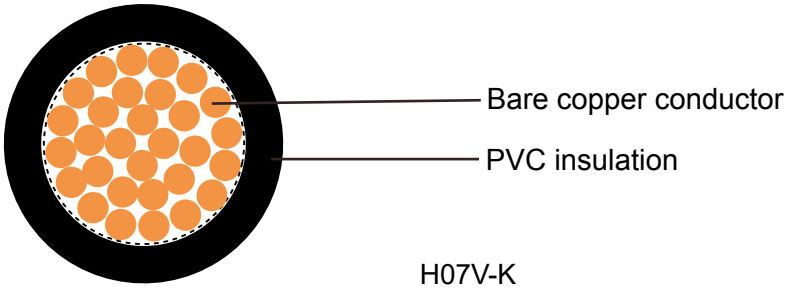
Cable Construction

- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- Special PVC TI1 core insulation
- Cores to VDE-0293 colors on chart

H07V-K

Technical Characteristics

- Working voltage: 450/750V
- Test voltage: 2500 volts
- Flexing bending radius: 12.5 x Ø
- Static bending radius: 12.5 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -30º C to +80º C
-Short circuit temperature: +160º C
- Flame retardant: NF C 32-070
- Insulation resistance: 10 MΩ x km



H07V-K

French Standard

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/Km*	Nominal Weight *kg/Km*
16(30/30)	1 x 1.5	0,7	3.1	14.4	20
14(50/30)	1 x 2.5	0,8	3.6	24.0	31
12(56/28)	1 x 4	0,8	4.3	38.0	48
10(84/28)	1 x 6	0,8	4.9	58.0	69
8(80/26)	1 x 10	1,0	6.4	96.0	121
6(128/26)	1 x 16	1,0	8.1	154.0	211
4(200/26)	1 x 25	1,2	9.8	240	303
2 (280/26)	1 x 35	1,2	11.1	336	417
1 (400/26)	1 x 50	1,4	13.1	480	539
2/0 (356/24)	1 x 70	1,4	15.5	672	730
3/0 (485/24)	1 x 95	1,6	17.2	912	900
4/0 (614/24)	1 x 120	1,6	19.7	1152	1135
300 MCM (765/24)	1 x 150	1,8	21.3	1440	1410
350 MCM (944/24)	1 x 185	2,0	23.4	1776	1845
500MCM(1225/24)	1 x 240	2,2	27.1	2304	2270

H05V-K UL / H07V-K UL
- UL/CSA/HAR/MTW & UL1015 PVC

Application and Description

H05VK UL / H07V-K UL are internationally approved harmonized, UL/CSA and AWM/MTW approved PVC European flexible single-conductor wires. Can be found in appliance wiring and machine tool wiring as well as in control systems. They may also be used in pipes and flexible conduits. Recommended for the internal wiring of apparatus, switchboards and distributor boards in electronic and electrical equipment designed for international use in North American & European countries and for MRO replacement of international made equipment wire.

Standard and Approval

NF C 32-201-7, HD 21.7 S2, VDE-0281 Part-3,UL-Standard and Approval 1063 MTW, UL-AWM Style 1015, CSA TEW, CSA-AWM I A/B, FT-1

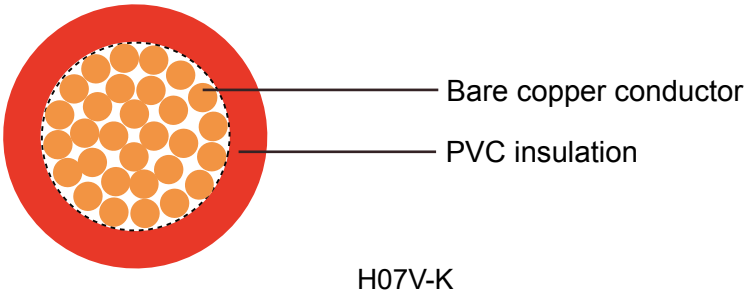
Cable Construction

- Fine tinned copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5, HD383 Class-5
- Special PVC TI3 core insulation
- Cores to VDE-0293 colors
- H05V-K UL (22, 20 & 18 AWG)
- H07V-K UL (16 AWG and Larger)
- X05V-K UL & X07V-K UL for non-HAR colors

H07V-K

Technical Characteristics

- Working voltage: 300/500v (H05V-K UL)
- Working voltage: 450/750v (H07V-K UL)
- Working voltage UL/CSA: 600v AC, 750v DC.
- Test voltage: 2500 volts
- Flexing/Static bending radius: 10-15 x Ø
- Temperature HAR/IEC: -40º to +70º C
- Temperature UL-AWM: -40º to +105º C



H07V-K

French Standard

- Temperature UL-MTW: -40º C to +90º C
- Temperature CSA-TEW: -40º C to +105º C
- Flame retardant: NF C 32-070, FT-1
- Insulation resistance: 20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # *x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/Km*	Nominal Weight *kg/ Km*
H05V-K					
20(16/32)	1 x 0.5	0.6	2.5	4.9	11
18(24/32)	1 x 0.75	0.6	2.7	7.2	14
17(32/32)	1 x 1	0.6	2.9	9.6	17
H07V-K					
16(30/30)	1 x 1.5	0,7	3.1	14.4	20
14(50/30)	1 x 2.5	0,8	3.7	24.0	32
12(56/28)	1 x 4	0,8	4.4	38.0	45
10(84/28)	1 x 6	0,8	4.9	58.0	63
8(80/26)	1 x 10	1,0	6.8	96.0	120
6(128/26)	1 x 16	1,0	8.9	154.0	186
4 (200/26)	1 x 25	1,2	10.1	240	261
2 (280/26)	1 x 35	1,2	11.4	336	362
1 (400/26)	1 x 50	1,4	14.1	480	539
2/0 (356/24)	1 x 70	1,4	15.8	672	740
3/0 (485/24)	1 x 95	1,6	18.1	912	936
4/0 (614/24)	1 x 120	1,6	19.5	1152	1184

H05V2-K / H07V2-K

Application and Description

These special heat-resistant flexible single-conductor hook-up wires are ideal for use in power current installation, switch cabinets, motors and transformers which are subject to direct contact with high temperature (e.g. varnishing machines and drying towers etc.). These are also suitable for inside wiring of electrical equipments such as lighting and heating apparatus.

Standard and Approval

NF C 32-201-7

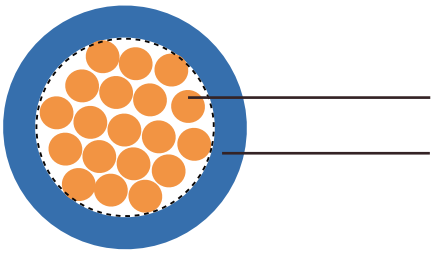
Cable Construction

- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5, BS 6360 cl. 5 and HD 383
- Special heat resistant PVC TI3 core insulation to DIN VDE 0281 part 7
- Cores to VDE-0293 colors
- H05V2-K (20, 18 & 17 AWG)
- H07V2-K (16 AWG and Larger)

Technical Characteristics

- Working voltage: 300/500v (H05V2-K)/ 450/750v (H07V2-K)
- Working voltage: - Test voltage: 2000 volts
- Flexing bending radius: 10-15 x Ø
- Static bending radius: 10-15 x Ø
- Flexing temperature: +5º C to +90º C
- Static temperature: -10º C to +105º C
-Short circuit temperature: +160º C
- Flame retardant: NF C 32-070
- Insulation resistance: 20 MΩ x km

French Standard



H05V2-K

H05V2-K

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Thickness of Insulation mm	Nominal Overall Diameter mm	Nominal Copper Weight kg/Km	Nominal Weight kg/Km
H05V2-K					
20(16/32)	1 x 0.5	0.6	2.5	4.8	8.7
18(24/32)	1 x 0.75	0.6	2.7	7.2	11.9
17(32/32)	1 x 1	0.6	2.8	9.6	14.0
H07V2-K					
16(30/30)	1 x 1.5	0,7	3.4	14.4	20
14(50/30)	1 x 2.5	0,8	4.1	24	33.3
12(56/28)	1 x 4	0,8	4.8	38	48.3
10(84/28)	1 x 6	0,8	5.3	58	68.5
8(80/26)	1 x 10	1,0	6.8	96	115
6(128/26)	1 x 16	1,0	8.1	154	170
4(200/26)	1 x 25	1,2	10.2	240	270
2(280/26)	1 x 35	1,2	11.7	336	367
1(400/26)	1 x 50	1,4	13.9	480	520
2/0(356/24)	1 x 70	1,4	16	672	729
3/0(485/24)	1 x 95	1,6	18.2	912	962
4/0(614/24)	1 x 120	1,6	20.2	1115	1235
300 MCM (765/24)	1 x 150	1,8	22.5	1440	1523
350 MCM (944/24)	1 x 185	2,0	24.9	1776	1850
500MCM(1225/24)	1 x 240	2,2	28.4	2304	2430

H05V2-K UL / H07V2-K UL

Application and Description

H05V2-K UL / H07V2-K UL are internationally approved harmonized, UL/CSA and AWM/MTW approved PVC European flexible single-conductor wires with increased temperature range for HAR/IEC and higher working voltage for UL-AWM. Due to these increases it is suitable for use in connections and internal wirings of frequency converters. Can be found in appliance wiring and machine tool wiring as well as in control systems. They may also be used in pipes and flexible conduits. Recommended for the internal wiring of apparatus, switchboards and distributor boards in electronic and electrical equipment designed for international use in North American & European countries and for MRO replacement of international made equipment wire.

Standard and Approval

NF C 32-201-7, HD 21.7 S2, H05V2-K / H07V2-K, VDE-0281 Part-3,
UL-Standard and Approval 1063 MTW, UL-AWM Style 10269, CSA TEW, CSA-AWM 1 A/B, FT-1,

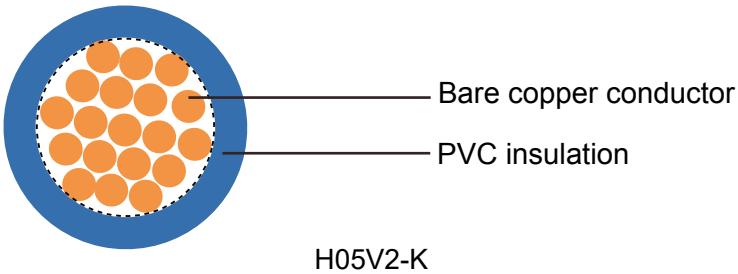
Cable Construction

- Fine tinned copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- Special PVC core insulation
- Cores to VDE-0293 colors on chart
- H05V2-K UL (22, 20 & 18 AWG)
- H07V2-K UL (16 AWG and Larger)
- X05V2-K UL & X07V2-K UL for non-HAR colors

H05V2-K

Technical Characteristics

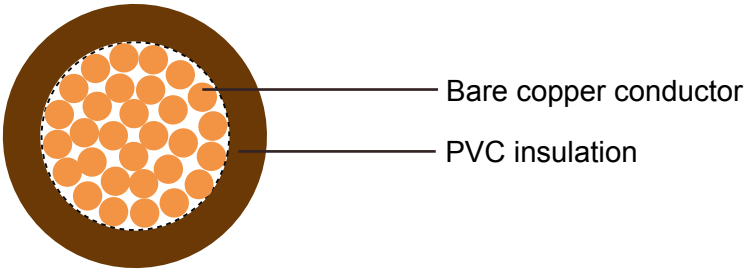
- Working voltage: 300/500v (H05V2-K UL)
- Working voltage: 450/750v (H07V2-K UL)
- Working voltage UL(MTW) & CSA: 600v
- Working voltage UL (AWM): 1000v
- Test voltage: 2500 volts (4000 volts UL)
- Flexing/Static bending radius: 10-15 x Ø



H05V2-K

French Standard

- Temperature HAR/IEC: -40º to +90º C
- Temperature UL-AWM: -40º to +105º C
- Temperature UL-MTW: -40º C to +90º C
- Temperature CSA-TEW: -40º C to +105º C
- Flame retardant: NF C 32-070, FT-1, UL VW-1
- Insulation resistance: 20 MΩ x km



H07V2-K

H07V2-K

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/Km*	Nominal Weight *kg/Km*
20(16/32)	1 x 0.5	0.6	2.5	4.8	11
18(24/32)	1 x 0.75	0.6	2.7	7.2	14
17(32/32)	1 x 1	0.6	2.9	9.6	16
16(30/30)	1 x 1.5	0,7	3.1	14.4	20
14(50/30)	1 x 2.5	0,8	3.7	24	32
12(56/28)	1 x 4	0,8	4.4	38	50
10(84/28)	1 x 6	0,8	4.9	58	66
8(80/26)	1 x 10	1,0	6.8	96	121
6(128/26)	1 x 16	1,0	8.9	154	211
4(200/26)	1 x 25	1,2	10.1	240	303
2(280/26)	1 x 35	1,2	11.4	336	407
1(400/26)	1 x 50	1,4	14.1	480	600
2/0(356/24)	1 x 70	1,4	15.8	672	790
3/0(485/24)	1 x 95	1,6	18.1	912	1067
4/0(614/24)	1 x 120	1,6	19.5	1115	1277

H05V-U / H07V-U

Application and Description

H05 V-U/(H)05 V-U

These insulated wires are determined for the installation to the inside of apparatus as well as for the protective laying to the lightings, in dry rooms, in production facilities, switch and distributor boards, in tubes, under and surface mounting of plasters.

H07 V-U/(H)07 V-U

These insulated wires are suitable for laying tubes, under and surface mounting of plasters and also in closed installation conduits. These are not allowed to install for direct laying in cable trays, channels or tanks. These types are permitted for the inner wiring of equipment, distributor and switchboards and also for protective laying to the lightings with a nominal voltage up to 1000 V alternating current or up to 750 V direct current against ground.

Standard and Approval

NF C 32-201-3

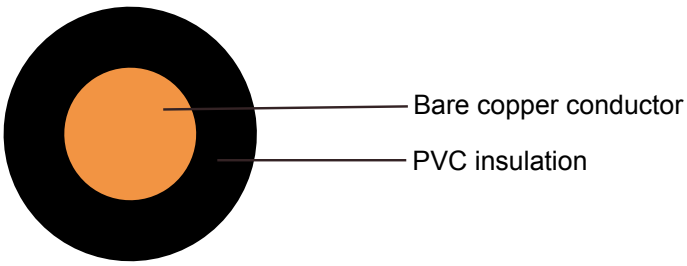
Cable Construction

- Solid bare copper single wire
- Solid to DIN VDE 0295 cl-1 and IEC 60228 cl-1
- Special PVC TI1 core insulation
- Cores to VDE-0293 colors on chart
- H05V-U (20, 18 & 17 AWG)
- H07V-U (16 AWG and Larger)

H07V-U

Technical Characteristics

- Working voltage: 300/500v (H05V-U)
- Working voltage: 450/750v (H07V-U)
- Test voltage: 2000V(H05V-U)/2500V (H07V-U)
- Flexing bending radius: 15 x Ø
- Static bending radius: 15 x Ø
- Flexing temperature: -5º C to +70º C



H07V-U

French Standard

- Static temperature: -30º C to +90º C
- Short circuit temperature: +160º C
- Flame retardant: NF C 32-070
- Insulation resistance: 10 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
20	1 x 0.5	0.6	2.1	4.8	9
18	1 x 0.75	0.6	2.2	7.2	11
17	1 x 1	0.6	2.4	9.6	14
16	1 x 1.5	0.7	2.9	14.4	21
14	1 x 2.5	0.8	3.5	24.0	33
12	1 x 4	0.8	3.9	38.0	49
10	1 x 6	0.8	4.5	58.0	69
8	1 x 10	1.0	5.7	96.0	115

H05V2-U / H07V2-U

Application and Description

These cables are for fixed protected installation inside appliances and in, or on, lighting fittings. Suitable for installation in surface mounted or embedded conduits, only for signalling and control circuits. Maximum conductor temperature in normal use 90°C. Not to be used in contact with object higher then 85°C. Not suitable for fixed distribution system.

Standard and Approval

NF C 32-201-7

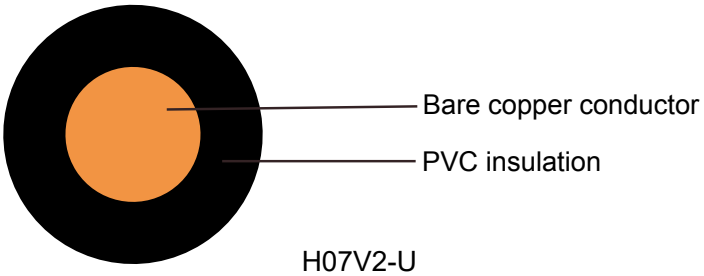
Cable Construction

- Solid bare copper single wire
- Solid to DIN VDE 0281-3,NF C 32-201-3 and IEC 60227-3
- Special PVC TI3 ore insulation
- Cores to VDE-0293 colors on chart
- H05V-U (20, 18 & 17 AWG)
- H07V-U (16 AWG and Larger)

H07V2-U

Technical Characteristics

- Working voltage: 300/500v (H05V-U)
- Working voltage: 450/750v (H07V-U)
- Test voltage: 2000V(H05V-U)/2500V (H07V-U)
- Flexing bending radius: 15 x Ø
- Static bending radius: 15 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -30º C to +80º C
- Short circuit temperature: +160º C
- Flame retardant: NF C 32-070
- Insulation resistance: 10 MΩ x km



H07V2-U

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
20	1 x 0.5	0.6	2.1	4.8	9
18	1 x 0.75	0.6	2.2	7.2	11
17	1 x 1	0.6	2.4	9.6	14
16	1 x 1.5	0.7	2.9	14.4	21
14	1 x 2.5	0.8	3.5	24.0	33
12	1 x 4	0.8	3.9	38.0	49
10	1 x 6	0.8	4.5	58.0	69
8	1 x 10	1.0	5.7	96.0	115

H07ZZ-F

Application and Description

These LSZH cables are flexible, mainly used for mobile service, suitable for installations where is required low smoke and halogen free fumes under fire conditions. Suitable for installations where the cable must withstand medium mechanical stress, for machines in industrial and agricultural workshops, for motors and some transportable machines , for wind mills and for agricultural exploitations.

Standard and Approval

NF C 32-102-13

Cable Construction

- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- Halogen free rubber compound EI 8 acc. to EN 50363-5
- Color code to VDE-0293-308
- Black halogen free rubber compound EM8 jacket

Technical Characteristics

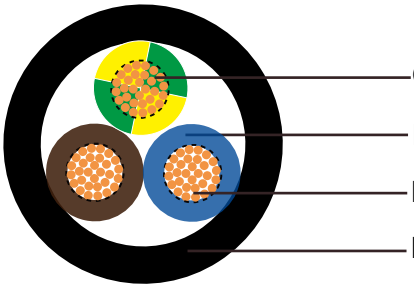
- Flexing voltage: 450/750 volts
- Fixed voltage: 600/1000 volts
- Test voltage: 2500 volts
- Flexing bending radius:6 x Ø
- Fixed bending radius: 4.0 x Ø
- Flexing Temperature: -5º C to +70º C
- Fixed Temperature: -40º C to +70º C
- Short circuit temperature: +250º C
- Flame retardant: IEC 60332.3□C1, NF C 32-070
- Insulation resistance: 20 MΩ x km

H07ZZ-F

French Standard

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm (min-max)*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
17（32/32）	2 x 1	0.8	1.3	7.7-10	19	96
17（32/32）	3 x 1	0.8	1.4	8.3-10.7	29	116
17（32/32）	4 x 1	0.8	1.5	9.2-11.9	38	143
17（32/32）	5 x 1	0.8	1.6	10.2-13.1	46	171
16（30/30）	1 x 1.5	0.8	1.4	5.7-7.1	14.4	58.5
16（30/30）	2 x 1.5	0.8	1.5	8.5-11.0	29	120
16（30/30）	3 x 1.5	0.8	1.6	9.2-11.9	43	146
16（30/30）	4 x 1.5	0.8	1.7	10.2-13.1	58	177
16（30/30）	5 x 1.5	0.8	1.8	11.2-14.4	72	216
16（30/30）	7 x 1.5	0.8	2.5	14.5-17.5	101	305
16（30/30）	12 x 1.5	0.8	2.9	17.6-22.4	173	500
16（30/30）	14 x 1.5	0.8	3.1	18.8-21.3	196	573
16（30/30）	18 x 1.5	0.8	3.2	20.7-26.3	274	755
16（30/30）	24 x 1.5	0.8	3.5	24.3-30.7	346	941
16（30/30）	36 x 1.5	0.8	3.8	27.8-35.2	507	1305
14（50/30）	1 x 2.5	0.9	1.4	6.3-7.9	24	72
14（50/30）	2 x 2.5	0.9	1.7	10.2-13.1	48	173
14（50/30）	3 x 2.5	0.9	1.8	10.9-14.0	72	213
14（50/30）	4 x 2.5	0.9	1.9	12.1-15.5	96	237
14（50/30）	5 x 2.5	0.9	2.0	13.3-17.0	120	318
14（50/30）	7 x 2.5	0.9	2.7	16.5-20.0	168	450
14（50/30）	12 x 2.5	0.9	3.1	20.6-26.2	288	729
14（50/30）	14 x 2.5	0.9	3.2	22.2-25.0	337	866
14（50/30）	18 x 2.5	0.9	3.5	24.4-30.9	456	1086
14（50/30）	24 x 2.5	0.9	3.9	28.8-36.4	576	1332
14（50/30）	36 x 2.5	0.9	4.3	33.2-41.8	1335	1961
12（56/28）	1 x 4	1	1.5	7.2-9.0	38	101
12（56/28）	3 x 4	1	1.9	12.7-16.2	115	293
12（56/28）	4 x 4	1	2.0	14.0-17.9	154	368
12（56/28）	5 x 4	1	2.2	15.6-19.9	192	450
12（56/28）	12 x 4	1	3.5	24.2-30.9	464	1049



H07ZZ-F

(H)03 Z1Z1-F/(H)05 Z1Z1-F

Application and Description

These cables may be used when halogen-free, low smoke and corrosive gas properties are required in case of fire. For moderate demands in the house, kitchen and office, for house equipment in damp rooms (for example: washing machines, dryers and refrigerators). Suitable for cooking and heating equipment, providing that the cable is not in contact with hot components or heat radiation. Not suitable for use in high temperature areas (like in lighting equipment), outside buildings, in industrial or agricultural buildings, connection of electrical power tools.

Standard and Approval

NF C 32-201-14

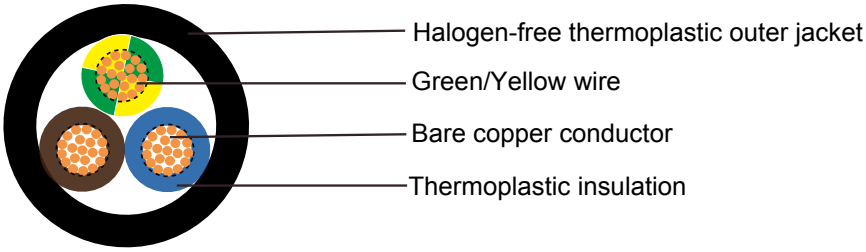
Cable Construction

- Fine bare copper strands
- Strands to DIN VDE 0295 cl. 5, BS 6360 cl. 5, IEC 60228 cl. 5, HD 383
- Thermoplastic TI6 core insulation
- Color code VDE-0293-308
- Green-yellow grounding (3 conductors and above)
- Halogen-fee thermoplastic TM7 outer jacket
- Black (RAL 9005) or White (RAL 9003)

H05Z1Z1-F

Technical Characteristics

- Working voltage: 300/300 volts(H03Z1Z1-F), 300/500 volts(H05Z1Z1-F)
- Test voltage: 2000 volts(H03Z1Z1-F), 2500 volts(H05Z1Z1-F)
- Flexing bending radius: 7.5 x Ø
- Fixed bending radius: 4.0 x Ø
- Flexing Temperature: -5º C to +70º C
- Fixed Temperature: -40º C to +70º C
- Short circuit temperature: +160º C
- Insulation resistance: 20 MΩ x km
- Smoke density acc. to EN 50268 / IEC 61034



H05Z1Z1-F

- Corrosiveness of combustion gases acc. to EN 50267-2-2, IEC 60754-2
- Flame test: flame-retardant acc. to EN 50265-2-1, NF C 32-070

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
(H)03 Z1Z1-F						
20(16/32)	2 x 0. 5	0.5	0.6	5.0	9.6	39
20(16/32)	3 x 0. 5	0.5	0.6	5.3	14.4	46
20(16/32)	4 x 0. 5	0.5	0.6	5.8	19.2	56
18(24/32)	2 x 0.75	0.5	0.6	5.4	14.4	47
18(24/32)	3 x 0.75	0.5	0.6	5.7	21.6	55
18(24/32)	4 x 0.75	0.5	0.6	6.3	29.0	69
(H)05 Z1Z1-F						
18(24/32)	2 x 0.75	0.6	0.8	6.2	14.4	58
18(24/32)	3 x 0.75	0..7	0.8	6.6	21.6	68
18(24/32)	4 x 0.75	0.8	0.8	7.1	29	81
18(24/32)	5 x 0.75	0.8	0.9	8	36	102
17(32/32)	2 x 1	0.6	0.8	6.6	19	67
17(32/32)	3 x 1	0.8	0.8	6.9	29	81
17(32/32)	4 x 1	0.8	0.9	7.7	38	101
17(32/32)	5 x 1	0.8	0.9	8.4	48	107
16(30/30)	2 x 1.5	0.7	0.8	7.4	29	87
16(30/30)	3 x 1.5	0.8	0.9	8.1	43	109
16(30/30)	4 x 1.5	0.8	1.0	9	58	117
16(30/30)	5 x 1.5	0.8	1.1	10	72	169
14(50/30)	2 x 2.5	0.8	1.0	9.3	48	138
14(50/30)	3 x 2.5	1.0	1.1	10.1	72	172
14(50/30)	4 x 2.5	1.0	1.1	11	96	210
14(50/30)	5 x 2.5	1.0	1.2	12.3	120	260
12(56/28)	2 x 4	0.8	1.1	10.6	76.8	190
12(56/28)	3 x 4	1.0	1.2	11.5	115.2	242
12(56/28)	4 x 4	1.0	1.4	12.5	153.6	298
12(56/28)	5 x 4	1.0	1.4	14.1	192	371

H05V-R/H07V-R

Application and Description

These cables are preferably for installation indoors, in cable ducts and in industrial plants or switching stations, under ground installation. Can be used in switchboards and distributor boards or where a thicker strand of multi-wire is required. Found in electronic and electrical equipment and switchgear cabinets designed for export to a European country and for MRO replacement of European made equipment wire.

Standard and Approval

NF C 32-201-3

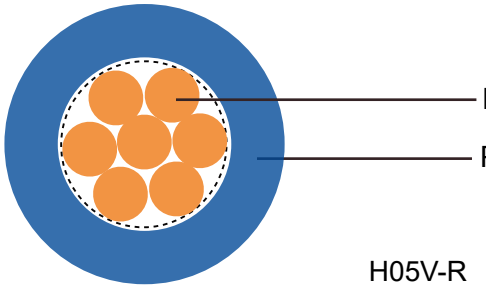
Cable Construction

- Bare copper solid/strands conductor
- Strands to VDE-0295 Class-2, IEC 60228 Cl-2
- Special PVC TI1 core insulation
- Cores to VDE-0293 colors on chart

Technical Characteristics

- Working voltage: 300/500 volts(H05V-R), 450/750 volts(H07V-R)
- Test voltage: 2000 volts(H05V-R), 2500 volts(H07V-R)
- Flexing bending radius: 15 x Ø
- Static bending radius: 15 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -30º C to +80º C
- Short circuit temperature: +160º C
- Flame retardant: NF C 32-070
- Insulation resistance: 10 MΩ x km

H05V-R



H05V-R

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
		H05V-R			
20(7/29)	1 x 0.5	0.6	2.2	4.8	9
18(7/27)	1 x 0.75	0.6	2.4	7.2	12
17(7/26)	1 x 1	0.6	2.6	9.6	15
		H07V-R			
16(7/24)	1 x 1.5	0.7	3.0	14.4	23
14(7/22)	1 x 2.5	0.8	3.6	24	35
12(7/20)	1 x 4	0.8	4.2	39	51
10(7/18)	1 x 6	0.8	4.7	58	71
8(7/16)	1 x 10	1	6.1	96	120
6(7/14)	1 x 16	1	7.2	154	170
4(7/12)	1 x 25	1.2	8.4	240	260
2(7/10)	1 x 35	1.2	9.5	336	350
1(19/13)	1 x 50	1.4	11.3	480	480
2/0(19/11)	1 x 70	1,4	12.6	672	680
3/0(19/10)	1 x 95	1,6	14.7	912	930
4/0(37/12)	1 x 120	1,6	16.2	1152	1160
300MCM(37/11)	1 x 150	1,8	18.1	1440	1430
350MCM(37/10)	1 x 185	2,0	20.2	1776	1780
500MCM(61/11)	1 x 240	2,2	22.9	2304	2360
	1 x 300	2.4	24.5		2940
	1 x 400	2.6	27.5		3740

H05Z-K / H07Z-K

Application and Description

These cables are designed for the internal wiring of switchboards and distributor boards with an alternating nominal voltage up to 1000 Volts or a direct voltage up to 750 volts. Generally install in pipes or ducts and internal wiring of appliances with maximum operating temperature of 90º C, and generally in areas (such as public and government buildings) where smoke and toxic fumes may cause a threat to life and equipment. The cables produce no corrosive gasses when burnt which is particularly important where electronic equipment is installed.

Standard and Approval

NF C 32-102-9

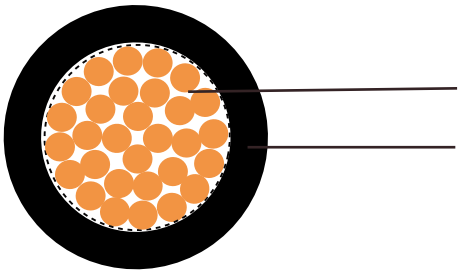
Cable Construction

- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5 BS 6360 cl. 5, HD 383
- Cross-link polyolefin EI5 core insulation
- LSOH - low smoke, zero halogen

Technical Characteristics

- Working voltage: 300/500v (H05Z-K), 450/750v (H07Z-K)
- Test voltage: 2500 volts
- Flexing bending radius: 8 x Ø
- Static bending radius: 8 x Ø
- Flexing temperature: -15º C to +90º C
- Static temperature: -40º C to +90º C
- Flame retardant: NF C 32-070
- Insulation resistance: 10 MΩ x km
- Smoke density acc. to EN 50268 / IEC 61034
- Corrosiveness of combustion gases acc. to EN 50267-2-2, IEC 60754-2
- Flame test: flame-retardant acc. to EN 50265-2-1, NF C 32-070

French Standard



H05Z-K

H05Z-K

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
H05Z-K					
20(16/32)	1 x 0.5	0.6	2.3	4.8	9
18(24/32)	1 x 0.75	0.6	2.5	7.2	12.4
17(32/32)	1 x 1	0.6	2.6	9.6	15
H07Z-K					
16(30/30)	1 x 1.5	0,7	3.5	14.4	24
14(50/30)	1 x 2.5	0,8	4	24	35
12(56/28)	1 x 4	0,8	4.8	38	51
10(84/28)	1 x 6	0,8	6	58	71
8(80/26)	1 x 10	1,0	6.7	96	118
6(128/26)	1 x 16	1,0	8.2	154	180
4(200/26)	1 x 25	1,2	10.2	240	278
2(280/26)	1 x 35	1,2	11.5	336	375
1(400/26)	1 x 50	1,4	13.6	480	560
2/0(356/24)	1 x 70	1,4	16	672	780
3/0(485/24)	1 x 95	1,6	18.4	912	952
4/0(614/24)	1 x 120	1,6	20.3	1152	1200
300 MCM (765/24)	1 x 150	1,8	22.7	1440	1505
350 MCM (944/24)	1 x 185	2,0	25.3	1776	1845
500MCM(1225/24)	1 x 240	2,2	28.3	2304	2400

H05Z-U / H07Z-U / H07Z-R

Application and Description

These cables are designed for the internal wiring of switchboards and distributor boards with an alternating nominal voltage up to 1000 Volts or a direct voltage up to 750 volts. Generally install in pipes or ducts and internal wiring of appliances with maximum operating temperature of 90º C, and generally in areas (such as public and government buildings) where smoke and toxic fumes may cause a threat to life and equipment. The cables produce no corrosive gasses when burnt which is particularly important where electronic equipment is installed.

Standard and Approval

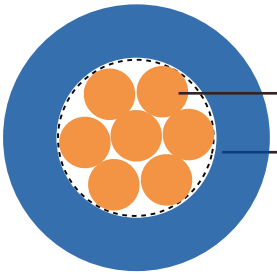
NF C 32-102-9

Cable Construction

- Solid bare copper single wire to IEC 60228 Cl-1(H05Z-U / H07Z-U)
- Bare copper strands to IEC 60228 Cl-2 (H07Z-R)
- Cross-link polyolefin EI5 core insulation
- Cores to VDE-0293 colors
- LSOH - low smoke, zero halogen

Technical Characteristics

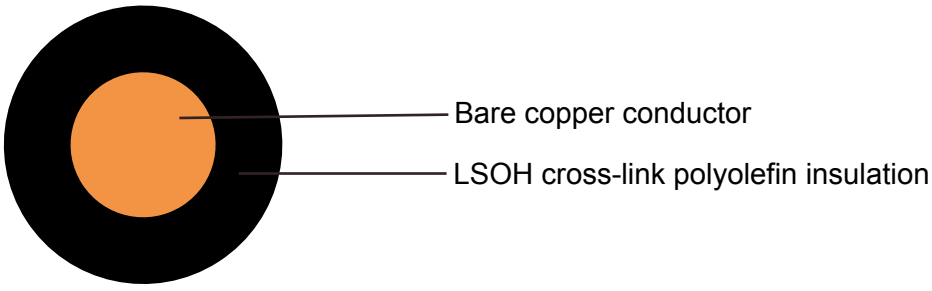
- Working voltage: 300/500v (H05Z-U), 450/750v (H07Z-U / H07Z-R)
- Test voltage: 2500 volts
- Flexing bending radius: 15 x Ø
- Static bending radius: 10 x Ø
- Flexing temperature: +5º C to +90º C
- Short circuit temperature: +250º C
- Flame retardant: NF C 32-070
- Insulation resistance: 10 MΩ x km



H07Z-R

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
H05Z-U					
20	1 x 0.5	0.6	2.0	4.8	8
18	1 x 0.75	0.6	2.2	7.2	12
17	1 x 1	0.6	2.3	9.6	14
H07Z-U					
16	1 x 1.5	0,7	2.8	14.4	20
14	1 x 2.5	0,8	3.3	24	30
12	1 x 4	0,8	3.8	38	45
10	1 x 6	0,8	4.3	58	65
8	1 x 10	1,0	5.5	96	105
H07Z-R					
16(7/24)	1 x 1.5	0.7	3.0	14.4	21
14(7/22)	1 x 2.5	0.8	3.6	24	33
12(7/20)	1 x 4	0.8	4.1	39	49
10(7/18)	1 x 6	0.8	4.7	58	71
8(7/16)	1 x 10	1	6.0	96	114
6(7/14)	1 x 16	1	6.8	154	172
4(7/12)	1 x 25	1.2	8.4	240	265
2(7/10)	1 x 35	1.2	9.3	336	360
1(19/13)	1 x 50	1.4	10.9	480	487
2/0(19/11)	1 x 70	1,4	12.6	672	683
3/0(19/10)	1 x 95	1,6	14.7	912	946
4/0(37/12)	1 x 120	1,6	16.0	1152	1174
300MCM(37/11)	1 x 150	1,8	17.9	1440	1448
350MCM(37/10)	1 x 185	2,0	20.0	1776	1820
500MCM(61/11)	1 x 240	2,2	22.7	2304	2371



H07Z-U

H07Z-U

H05BQ-F / H07BQ-F (NGMH11YÖ)

Application and Description

These cables are used for medium mechanical stress in dry, damp or wet areas, e.g. for connecting agricultural and commercial equipment, for connecting heaters where there is a danger of cable damage due to its contact with hot surfaces. The cable can also be used in electrical appliances such as drills, hand-held circular saws as well as in building sites and refrigeration plants. H07BQ-F can commonly be found in other machinery in agriculture, building sites, docks and refrigeration plants. The robust PUR jacket adds abrasion, notch and tear resistance as well as chemical resistance to oils, fats, petrol, water, ozone, UV radiation, hydrolysis and microbes. Common European designation is NGMH11YÖ.

Standard and Approval

NF C 32-102-10

Cable Construction

- Fine bare or tinned copper strands
- Strands to VDE-0295 Class-5, IEC 60228 and HD383 Class-5
- Rubber compound insulation E16 to VDE-0282 Part-1
- Color coded to VDE-0293-308
- Conductors stranded in layers with optimal lay-length
- Green-yellow earth core in the outer layer
- Polyurethane/PUR outer jacket TMPU- orange (RAL 2003)

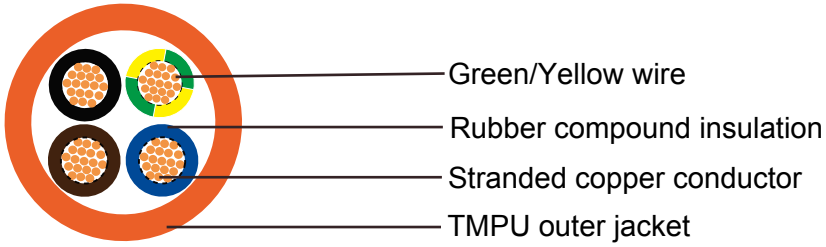
Technical Characteristics

- Working voltage: 300/500 volts(H05BQ-F), 450/750 volts(H07BQ-F)
- Test voltage: 2000 volts(H05BQ-F), 2500 volts(H07BQ-F}
- Flexing bending radius: 5 x Ø
- Fixed bending radius: 3 x Ø
- Flexing Temperature: -40º C to +80º C
- Fixed Temperature: -50º C to +90º C
- Short circuit Temperature: +250º C
- Flame retardant: NF C 32-070
- Insulation resistance: 20 MΩ x km

French Standard

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Thickness of Insulation mm	Nominal Thickness of Sheath mm	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Weight kg/km
H05BQ-F						
18(24/32)	2 x 0.75	0.6	0.8	5.7 - 7.4	14.4	52
18(24/32)	3 x 0.75	0.6	0.9	6.2 - 8.1	21.6	63
18(24/32)	4 x 0.75	0.6	0.9	6.8 - 8.8	29	80
18(24/32)	5 x 0.75	0.6	1.0	7.6 - 9.9	36	96
17(32/32)	2 x 1	0.6	0.9	6.1 - 8.0	19.2	59
17(32/32)	3 x 1	0.6	0.9	6.5 - 8.5	29	71
17(32/32)	4 x 1	0.6	0.9	7.1 - 9.3	38.4	89
17(32/32)	5 x 1	0.6	1.0	8.0 - 10.3	48	112
H07BQ-F						
16(30/30)	2 x 1.5	0.8	1.0	7.6 - 9.8	29	92
16(30/30)	3 x 1.5	0.8	1.0	8.0 - 10.4	43	109
16(30/30)	4 x 1.5	0.8	1.1	9.0 - 11.6	58	145
16(30/30)	5 x 1.5	0.8	1.1	9.8 - 12.7	72	169
14(50/30)	2 x 2.5	0.9	1.1	9.0 - 11.6	101	121
14(50/30)	3 x 2.5	0.9	1.1	9.6 - 12.4	173	164
14(50/30)	4 x 2.5	0.9	1.2	10.7 - 13.8	48	207
14(50/30)	5 x 2.5	0.9	1.3	11.9 - 15.3	72	262
12(56/28)	2 x 4	1.0	1.2	10.6 - 13.7	96	194
12(56/28)	3 x 4	1.0	1.2	11.3 - 14.5	120	224
12(56/28)	4 x 4	1.0	1.3	12.7 - 16.2	77	327
12(56/28)	5 x 4	1.0	1.4	14.1 - 17.9	115	415
10(84/28	2 x 6	1.0	1.3	11.8 - 15.1	154	311
10(84/28	3 x 6	1.0	1.4	12.8 - 16.3	192	310
10(84/28	4 x 6	1.0	1.5	14.2 - 18.1	115	310
10(84/28	5 x 6	1.0	1.6	15.7 - 20.0	173	496



H07BQ-F

H07BQ-F

H05G-K / H07G-K

Application and Description

These cables are recommended for the internal wiring of switchboards and distributor boards as well as in operating parts in or on lights. The higher temperature range allows for connections to heaters with an alternating nominal voltage of 1000V. or direct nominal voltage of 750V. These cables are all allowed for laying in tubes in and under plaster.

Standard and Approval

NF C 32-102-7

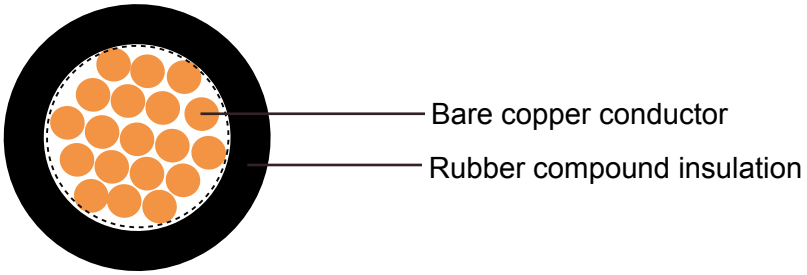
Cable Construction

- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- Rubber compound type EI3 (EVA) to DIN VDE 0282 part 7 insulation
- Cores to VDE-0293 colors

Technical Characteristics

- Working voltage: 300/500v (H05G-K), 450/750v (H07G-K)
- Test voltage: 2000volts (H05G-K), 2500 volts (H07G-K)
- Flexing bending radius: 7 x Ø
- Static bending radius: 7 x Ø
- Flexing temperature: -25º C to +110º C
- Static temperature: -40º C to +110º C
- Short circuit Temperature: +160º C
- Flame retardant: NF C 32-070
- Insulation resistance: 10 MΩ x km

French Standard



H05G-K

H05G-K

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
H05G-K					
20(16/32)	1 x 0.5	0.6	2.3	4.8	13
18(24/32)	1 x 0.75	0.6	2.6	7.2	16
17(32/32)	1 x 1	0.6	2.8	9.6	22
H07G-K					
16(30/30)	1 x 1.5	0.8	3.4	14.4	24
14(50/30)	1 x 2.5	0.9	4.1	24	42
12(56/28)	1 x 4	1.0	5.1	38	61
10(84/28)	1 x 6	1.0	5.5	58	78
8(80/26)	1 x 10	1.2	6.8	96	130
6(128/26)	1 x 16	1.2	8.4	154	212
4(200/26)	1 x 25	1.4	9.9	240	323
2(280/26)	1 x 35	1.4	11.4	336	422
1(400/26)	1 x 50	1.6	13.2	480	527
2/0(356/24)	1 x 70	1.6	15.4	672	726
3/0(485/24)	1 x 95	1.8	17.2	912	937
4/0(614/24)	1 x 120	1.8	19.7	1152	1192

H05G-U / H07G-U/R

Application and Description

These cables are recommended for the internal wiring of switchboards and distributor boards as well as in operating parts in or on lights. The higher temperature range allows for connections to heaters with an alternating nominal voltage of 1000V. or direct nominal voltage of 750V. These cables are all allowed for laying in tubes in and under plaster.

Standard and Approval

NF C 32-102-7

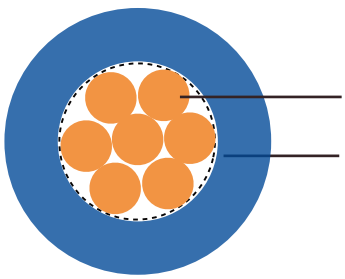
Cable Construction

- Solid bare copper / strands
- Strands to VDE-0295 Class-1/2, IEC 60228 Class-1/2
- Rubber compound type EI3 (EVA) to DIN VDE 0282 part 7 insulation
- Cores to VDE-0293 colors

Technical Characteristics

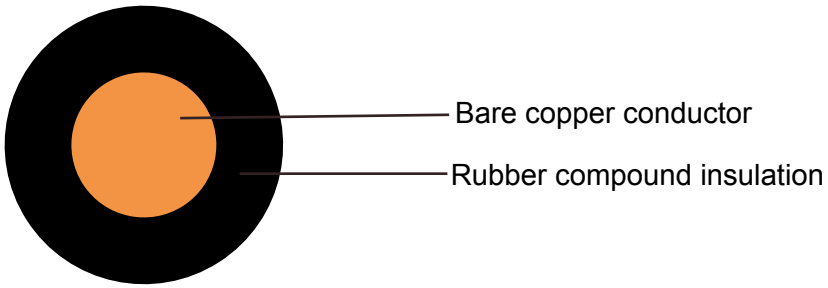
- Working voltage: 300/500v (H05G-U), 450/750v (H07G-U/R)
- Test voltage: 2000volts (H05G-U), 2500 volts (H07G-U/R)
- Flexing bending radius: 7 x Ø
- Static bending radius: 7 x Ø
- Flexing temperature: -25º C to +110º C
- Static temperature: -40º C to +110º C
- Short circuit Temperature: +160º C
- Flame retardant: NF C 32-070
- Insulation resistance: 10 MΩ x km

H07G-R



H07G-R

French Standard



H05G-U

H05G-U

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
H05G-U					
20	1 x 0.5	0.6	2.1	4.8	9
18	1 x 0.75	0.6	2.3	7.2	12
17	1 x 1	0.6	2.5	9.6	15
H07G-U					
16	1 x 1.5	0.8	3.1	14.4	21
14	1 x 2.5	0.9	3.6	24	32
12	1 x 4	1.0	4.3	38	49
H07G-R					
10(7/18)	1 x 6	1.0	5.2	58	70
8(7/16)	1 x 10	1.2	6.5	96	116
6(7/14)	1 x 16	1.2	7.5	154	173
4(7/12)	1 x 25	1.4	9.2	240	268
2(7/10)	1 x 35	1.4	10.3	336	360
1(19/13)	1 x 50	1.6	12.0	480	487

H05VV5-F(NYSLYÖ-JZ)

Application and Description

These cables are suitable for dry, damp and wet locations but not in the open-air. They are used as screened termination and connection cable in the control, measuring and signal technology. The copper braiding optimises protection against external interferences, like electromagnetic fields and stray frequencies. Suitable as a signal and impulse cable for control and inspection of industrial plants, machinery and working processes.

Standard and Approval

NF C 32-201-13

Cable Construction

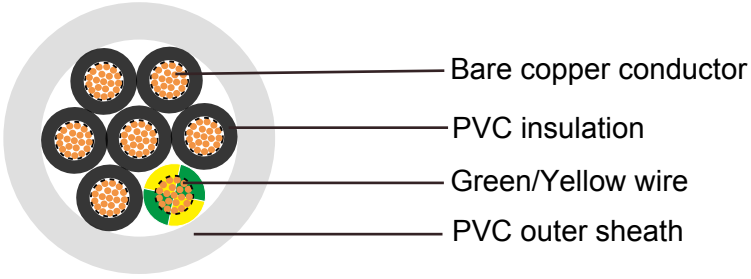
- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- PVC insulation T12 to DIN VDE 0281 part 1
- Green-yellow grounding (3 conductors and above)
- Cores to VDE-0293 colors
- PVC sheath TM5 to DIN VDE 0281 part 1

Technical Characteristics

- Working voltage: 300/500v
- Test voltage: 2000volts
- Flexing bending radius: 7.5 x Ø
- Static bending radius: 4 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -40º C to +70º C
- Short circuit Temperature: +150º C
- Flame retardant: NF C 32-070
- Insulation resistance: 20 MΩ x km

H05VV5-F

French Standard



H05VV5-F

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Thickness of Insulation mm	Nominal Thickness of Sheath mm	Nominal Overall Diameter mm	Nominal Copper Weight kg/Km	Nominal Weight kg/Km
20(16/32)	2x0.50	0.6	0.7	5.6	9.7	46
18(24/32)	2x0.75	0.6	0.8	6.2	14.4	52
17(32/32)	2x1	0.6	0.8	6.6	19.2	66
16(30/30)	2x1.5	0.7	0.8	7.6	29	77
14(50/30)	2x2.5	0.8	0.9	9.2	48	110
20(16/32)	3x0.50	0.6	0.7	5.9	14.4	54
18(24/32)	3x0.75	0.6	0.8	6.6	21.6	68
17(32/32)	3x1	0.6	0.8	7	29	78
16(30/30)	3x1.5	0.7	0.9	8.2	43	97
14(50/30)	3x2.5	0.8	1	10	72	154
20(16/32)	4x0.50	0.6	0.8	6.6	19	65
18(24/32)	4x0.75	0.6	0.8	7.2	28.8	82
17(32/32)	4x1	0.6	0.8	7.8	38.4	104
16(30/30)	4x1.5	0.7	0.9	9.3	58	128
14(50/30)	4x2.5	0.8	1.1	10.9	96	212
20(16/32)	5x0.50	0.6	0.8	7.3	24	80
18(24/32)	5x0.75	0.6	0.9	8	36	107
17(32/32)	5x1	0.6	0.9	8.6	48	123
16(30/30)	5x1.5	0.7	1	10.3	72	149
14(50/30)	5x2.5	0.8	1.1	12.1	120	242
20(16/32)	6x0.50	0.6	0.9	8.1	28.8	104
18(24/32)	6x0.75	0.6	0.9	8.7	43.2	132
17(32/32)	6x1	0.6	1	9.5	58	152
16(30/30)	6x1.5	0.7	1.1	11.2	86	196

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/Km*	Nominal Weight *kg/Km*
14(50/30)	6x2.5	0.8	1.2	13.2	144	292
20(16/32)	7x0.50	0.6	0.9	8.1	33.6	119
18(24/32)	7x0.75	0.6	1	8.9	50.5	145
17(32/32)	7x1	0.6	1	9.5	67	183
16(30/30)	7x1.5	0.7	1.2	11.4	101	216
14(50/30)	7x2.5	1.3	0.8	13.4	168	350
20(16/32)	12x0.50	0.6	1.1	10.9	58	186
18(24/32)	12x0.75	0.6	1.1	11.7	86	231
17(32/32)	12x1	0.6	1.2	12.8	115	269
16(30/30)	12x1.5	0.7	1.3	15	173	324
14(50/30)	12x2.5	1.5	0.8	17.9	288	543
20(16/32)	18x0.50	0.6	1.2	12.9	86	251
18(24/32)	18x0.75	0.6	1.3	14.1	130	313
17(32/32)	18x1	0.6	1.3	15.1	173	400
16(30/30)	18x1.5	0.7	1.5	18	259	485
14(50/30)	18x2.5	1.8	0.8	21.6	432	787
20(16/32)	25x0.50	0.6	1.4	15.4	120	349
18(24/32)	25x0.75	0.6	1.5	16.8	180	461
17(32/32)	25x1	0.6	1.5	18	240	546
16(30/30)	25x1.5	0.7	1.8	21.6	360	671
14(50/30)	25x2.5	0.8	2.1	25.8	600	1175
20(16/32)	36x0.50	0.6	1.5	17.7	172	510
18(24/32)	36x0.75	0.6	1.6	19.3	259	646
17(32/32)	36x1	0.6	1.7	20.9	346	775
16(30/30)	36x1.5	0.7	2	25	518	905
14(50/30)	36x2.5	0.8	2.3	29.8	864	1791
20(16/32)	50x0.50	0.6	1.7	21.5	240	658
18(24/32)	50x0.75	0.6	1.8	23.2	360	896
17(32/32)	50x1	0.6	1.9	24.5	480	1052
16(30/30)	50x1.5	0.7	2	28.9	720	1381
14(50/30)	50x2.5	0.8	2.3	35	600	1175
20(16/32)	61x0.50	0.6	1.8	23.1	293	780
18(24/32)	61x0.75	0.6	2	25.8	439	1030
17(32/32)	61x1	0.6	2.1	26	586	1265
16(30/30)	61x1.5	0.7	2.4	30.8	878	1640
14(50/30)	61x2.5	0.8	2.4	37.1	1464	2724

H05VVC4V5-K

Application and Description

These cables are suitable for dry, damp and wet locations but not in the open-air. They are used as screened termination and connection cable in the control, measuring and signal technology. The copper braiding optimises protection against external interferences, like electromagnetic fields and stray frequencies. Suitable as a signal and impulse cable for control and inspection of industrial plants, machinery and working processes.

Standard and Approval

NF C 32-201-13

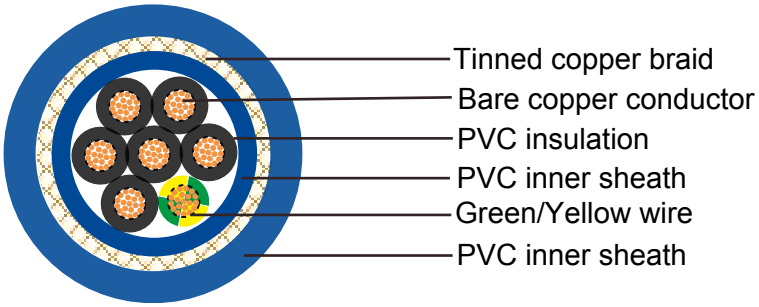
Cable Construction

- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- PVC insulation T12 to DIN VDE 0281 part 1
- Green-yellow grounding (3 conductors and above)
- Cores to VDE-0293 colors
- PVC inner sheath TM2 to DIN VDE 0281 part 1
- Tinned copper braided shielding, covering approx. 85%
- PVC outer jacket TM5 to DIN VDE 0281 part 1

Technical Characteristics

- Working voltage: 300/500v
- Test voltage: 2000volts
- Flexing bending radius: 10 x Ø
- Static bending radius: 5 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -40º C to +70º C
- Flame retardant: NF C 32-070
- Insulation resistance: 20 MΩ x km

H05VVC4V5-F



H05VVC4V5-F

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Inner Sheath *mm*	Nominal Thickness of outer Sheath *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/Km*	Nominal Weight *kg/Km*
20(16/32)	2 x 0,50	0.6	0.7	0.9	7,7	35	105
18(24/32)	2 x 0,75	0.6	0.7	0.9	8	39	115
17(32/32)	2 x 1,0	0.6	0.7	0.9	8,2	44	125
16(30/30)	2 x 1,50	0.7	0.7	1.0	9,3	58	160
14(50/30)	2 x 2,50	0.8	0.7	1.1	10,7	82	215
20(16/32)	3 x 0,50	0.6	0.7	0.9	8	40	115
18(24/32)	3 x 0,75	0.6	0.7	0.9	8,3	47	125
17(32/32)	3 x 1,0	0.6	0.7	1.0	8,8	54	145
16(30/30)	3 x 1,50	0.7	0.7	1.0	9,7	73	185
14(50/30)	3 x 2,50	0.8	0.7	1.1	11,3	106	250
20(16/32)	4 x 0,50	0.6	0.7	0.9	8,5	44	125
18(24/32)	4 x 0,75	0.6	0.7	1.0	9,1	58	155
17(32/32)	4 x 1,0	0.6	0.7	1.0	9,4	68	170
16(30/30)	4 x 1,50	0.7	0.7	1.1	10,7	93	220
14(50/30)	4 x 2,50	0.8	0.8	1.2	12,6	135	305
20(16/32)	5 x 0,50	0.6	0.7	1.0	9,3	55	155
18(24/32)	5 x 0,75	0.6	0.7	1.1	9,7	66	175
17(32/32)	5 x 1,0	0.6	0.7	1.1	10,3	78	200
16(30/30)	5 x 1,50	0.7	0.8	1.2	11,8	106	265
14(50/30)	5 x 2,50	0.8	0.8	1.3	13,9	181	385
20(16/32)	7 x 0,50	0.6	0.7	1.1	10,8	69	205
18(24/32)	7 x 0,75	0.6	0.7	1.2	11,5	84	250
17(32/32)	7 x 1,0	0.6	0.8	1.2	12,2	107	275
16(30/30)	7 x 1,50	0.7	0.8	1.3	14,1	162	395
14(50/30)	7 x 2,50	0.8	0.8	1.5	16,5	238	525
20(16/32)	12 x 0,50	0.6	0.8	1.3	13,3	98	285
18(24/32)	12 x 0,75	0.6	0.8	1.3	13,9	125	330

French Standard

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Inner Sheath *mm*	Nominal Thickness of outer Sheath *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/Km*	Nominal Weight *kg/Km*
17(32/32)	12 x 1,0	0.6	0.8	1.4	14,7	176	400
16(30/30)	12 x 1,50	0.7	0.8	1.5	16,7	243	525
14(50/30)	12 x 2,50	0.8	0.8	1.7	19,9	367	745
20(16/32)	18 x 0,50	0.6	0.9	1.3	18,6	147	385
18(24/32)	18 x 0,75	0.6	0.8	1.5	19,9	200	475
17(32/32)	18 x 1,0	0.6	0.8	1.5	20,8	243	525
16(30/30)	18 x 1,50	0.7	0.8	1.7	24,1	338	720
14(50/30)	18 x 2,50	0.8	0.9	2.0	28,5	555	1075
20(16/32)	25 x 0,50	0.6	0.8	1.6	22,1	199	505
18(24/32)	25 x 0,75	0.6	0.9	1.7	23,7	273	625
17(32/32)	25 x 1,0	0.6	0.9	1.7	24,7	351	723
16(30/30)	25 x 1,50	0.7	0.9	2.0	28,6	494	990
14(50/30)	25 x 2,50	0.8	1.0	2.3	34,5	792	1440
20(16/32)	36 x 0.50	0.6	0.9	1.7	24.7	317	620
18(24/32)	36 x 0.75	0.6	0.9	1.8	26.2	358	889
17(32/32)	36 x 1,0	0.6	0.9	1.9	27,6	438	910
16(30/50)	36 x 1,50	0.7	1.0	2.2	32,5	662	1305
14(30/32)	36 x 2,50	0.8	1.0	2.4	38,5	1028	1850
20(16/32)	48 x 0,50	0.6	0.9	1.9	28,3	353	845
18(24/32)	48 x 0,75	0.6	1.0	2.1	30,4	490	1060
17(32/32)	48 x 1,0	0.6	1.0	2.1	31,9	604	1210
16(30/30)	48 x 1,50	0.7	1.1	2.4	37	855	1665
14(50/30)	48 x 2,50	0.8	1.2	2.4	43,7	1389	2390
20(16/32)	60 x 0,50	0.6	1.0	2.1	31,1	432	1045
18(24/32)	60 x 0,75	0.6	1.0	2.3	329	576	1265
17(32/32)	60 x 1,0	0.6	1.0	2.3	34,7	720	1455
16(30/30)	60 x 1,50	0.7	1.1	2.4	39,9	1050	1990
14(50/30)	60 x 2,50	0.8	1.2	2.4	47,2	1706	2870

H05VVH6-F/ H07VVH6-F

Application and Description

The cables are used for applications with medium mechanical stresses and sharp bending in one place. They are suitable for use in dry, damp and wet rooms as power and control cable, especially on hoisting equipment, handling systems, machine tools, etc.

Standard and Approval

NF C 32-070, CSA C22.2 N° 49

Cable Construction

- Fine bare or tinned copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- PVC compound insulation T12 to VDE 0207 part 4
- Color coded to VDE-0293-308
- PVC compound outer jacket TM2 to VDE 0207 part 5

Technical Characteristics

-Working voltage:

H05VVH6-F : 300/500 V

H07VVH6-F: 450/700 V

-Test voltage:

H05VVH6-F : 2 KV

H07VVH6-F: 2.5 KV

-Bending radius: 10 × cable Ø

-Flexing temperature: - 5º C to + 70º C

-Static temperature :-40º C to +70º C

-Flame retardant: test class B according to VDE 0472 part 804, NF C 32-070

-Insulation resistance: 20 MΩ x km

French Standard

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # *x mm²*	Nominal Conductor Diameter *mm*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/Km*	Nominal Weight *kg/Km*
H05VVH6-F						
18(24/32)	4 x 0.75	1.2	0.6	4.2 x 12.6	29	90
18(24/32)	8x 0.75	1.2	0.6	4.2 x 23.2	58	175
18(24/32)	12x 0.75	1.2	0.6	4.2 x 33.8	86	260
18(24/32)	18x 0.75	1.2	0.6	4.2 x 50.2	130	380
18(24/32)	24x 0.75	1.2	0.6	4.2 x 65.6	172	490
17(32/32)	4 x 1.00	1.4	0.7	4.4 x 13.4	38	105
17(32/32)	5×1.00	1.4	0.7	4.4 x 15.5	48	120
17(32/32)	8 x 1.00	1.4	0.7	4.4 x 24.8	77	205
17(32/32)	12x 1.00	1.4	0.7	4.4 x 36.2	115	300
17(32/32)	18x 1.00	1.4	0.7	4.4 x 53.8	208	450
17(32/32)	24x 1.00	1.4	0.7	4.4 x 70.4	230	590
H07VVH6-F						
16(30/30)	4 x1.5	1.5	0.8	5.1 x 14.8	58	130
16(30/30)	5 x1.5	1.5	0.8	5.1 x 17.7	72	158
16(30/30)	7 x1.5	1.5	0.8	5.1 x 25.2	101	223
16(30/30)	8 x1.5	1.5	0.8	5.1 x 27.3	115	245
16(30/30)	10 x1.5	1.5	0.8	5.1 x 33.9	144	304
16(30/30)	12 x1.5	1.5	0.8	5.1 x 40.5	173	365
16(30/30)	18 x1.5	1.5	0.8	6.1 x 61.4	259	628
16(30/30)	24 x1.5	1.5	0.8	5.1 x 83.0	346	820
14(50/30)	4 x2.5	1.9	0.8	5.8 x 18.1	96	192
14(50/30)	5 x2.5	1.9	0.8	5.8 x 21.6	120	248
14(50/30)	7 x2.5	1.9	0.8	5.8 x 31.7	168	336
14(50/30)	8 x2.5	1.9	0.8	5.8 x 33.7	192	368
14(50/30)	10 x2.5	1.9	0.8	5.8 x 42.6	240	515
14(50/30)	12 x2.5	1.9	0.8	5.8 x 49.5	288	545
14(50/30)	24 x2.5	1.9	0.8	5.8 x 102.0	480	1220
12(56/28)	4 x4	2.5	0.8	6.7 x 20.1	154	271
12(56/28)	5 x4	2.5	0.8	6.9 x 26.0	192	280
12(56/28)	7 x4	2.5	0.8	6.7 x 35.5	269	475
10(84/28)	4 x6	3.0	0.8	7.2 x 22.4	230	359
10(84/28)	5 x6	3.0	0.8	7.4 x 31.0	288	530
10(84/28)	7 x6	3.0	0.8	7.4 x 43.0	403	750
8(80/26)	4 x10	4.0	1.0	9.2 x 28.7	384	707
8(80/26)	5 x10	4.0	1.0	11.0 x 37.5	480	1120
6(128/26)	4 x16	5.6	1.0	11.1 x 35.1	614	838
6(128/26)	5 x16	5.6	1.0	11.2 x 43.5	768	1180

H05VVD3H6-F

Application and Description

These cables are generally used in crews of, elevators for people and heavy burdens, and swift conduct parts of machines.They are applicable for all control, measure and telecommunication systems and are suitable for dry and humid rooms.

Standard and Approval

NF C 32-070

Cable Construction

- Bare copper strand conductor acc. to DIN VDE 0295 class 5/6 resp. IEC 60228 class 5/6
- PVC T12 core insulation
- Color coded to VDE 0293-308, >6 wires black with white numerals with green/yellow wire
- Black PVC TM 2 sheath

Technical Characteristics

- Working voltage: 300/500 V
- Test voltage: 2000V
- Minimum bending radius: 10 × Ø
- Flexing temperature: -30 °C - +70 °C
- Static temperature: -40 °C - +70 °C
- Flame retardant: NF C 32-070
- Insulation resistance: 350 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Overall Dimension *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
18(24/32)	20 x 0.75	61.8 x 4.2	131	462
18(24/32)	24 x 0.75	72.4 x 4.2	157	546
17(32/32)	12 x 1	41.8 x 4.3	105	330
17(32/32)	14 x 1	47.8 x 4.3	122	382
17(32/32)	18 x 1	57.8 x 4.3	157	470
17(32/32)	24 x 1	74.8 x 4.3	210	617

H05V3V3H6-F/ H05V3V3D3H6-F

Application and Description

This kind of flat cables are used in crews of elevators for people and have burdens, and conducting very swift and hard parts of machines.H05V3V3H6-F type cables having no strechter carrier elements are adviced to use in elevator instalations max. swift not pass 4.0 m/s.These cables freely hanging height is max. 45m and movement limit is max 80m. For the H05V3V3D3H6-F, at the swifts between 4.0/s to 6.3m/s, it's adviced to use the cables having strechter carrier elements. H05V3V3D3H6-F type cables freely hanging height is max. 80m movement limit is max. 150m.

Standard and Approval

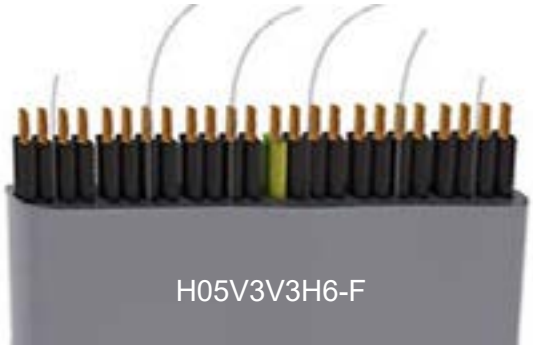
NF C 32-070, CSA C22.2 N° 49

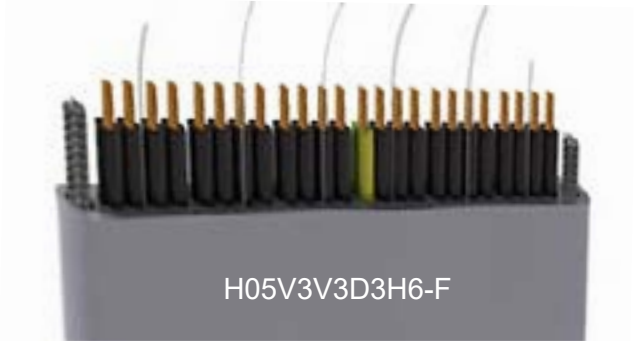
Cable Construction

- Bare copper strand conductor
- acc. to DIN VDE 0295 class 5/6 resp. IEC 60228 class 5/6
- PVC T15 core insulation
- Color coded to VDE 0293-308, >6 wires black with white numerals with green/yellow wire
- Black PVC TM 4 sheath

Technical Characteristics

- Working voltage: 300/500V
- Test voltage: 2000V
- Flexing temperature: - 35 °C - +70 °C
- Flame retardant: NF C 32-070
- Insulation resistance: 350 MΩ x km


H05V3V3H6-F


H05V3V3D3H6-F

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Overall Dimension *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
H05V3V3H6-F				
18(24/32)	12 x 0.75	33.7 x 4.3	79	251
18(24/32)	16 x 0.75	44.5 x 4.3	105	333
18(24/32)	18 x 0.75	49.2 x 4.3	118	371
18(24/32)	20 x 0.75	55.0 x 4.3	131	415
18(24/32)	24 x 0.75	65.7 x 4.3	157	496
17(32/32)	12 x 1	35.0 x 4.4	105	285
17(32/32)	16 x 1	51.0 x 4.4	157	422
17(32/32)	20 x 1	57.0 x 4.4	175	472
17(32/32)	24 x 1	68.0 x 4.4	210	565
H05V3V3D3H6-F				
18(24/32)	20 x 0.75	61.8 x 4.2	131	462
18(24/32)	24 x 0.75	72.4 x 4.2	157	546
17(32/32)	12 x 1	41.8 x 4.3	105	330
17(32/32)	14 x 1	47.8 x 4.3	122	382
17(32/32)	18 x 1	57.8 x 4.3	157	470
17(32/32)	22 x 1	69.8 x 4.3	192	572
17(32/32)	24 x 1	74.8 x 4.3	210	617

H05BB-F /H07BB-F

Application and Description

These rubbers insulated and sheathed electric cables, with a parallel EPDM tube, joined with a textile braid, are used especially for electric steam generator irons (named usually “vaporellas”). The cables are suitable for the stripping force on automatic machines and for low temperature environments.

Standard and Approval

NF C 32-102-12

Cable Construction

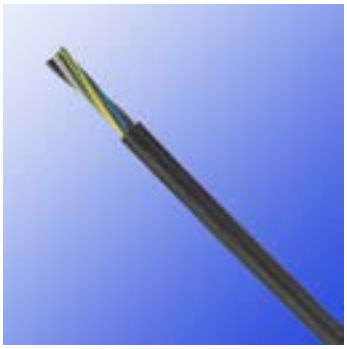
- Bare/Tinned copper strand conductor
- acc. to DIN VDE 0295 class 5. IEC 60228 class 5
- Insulation: EPR rubber type E17
- Color coded to VDE 0293-308(3 conductors and above with yellow/green wire)
- Sheath: EPR rubber type EM6
- Sheath color: normally black

Technical Characteristics

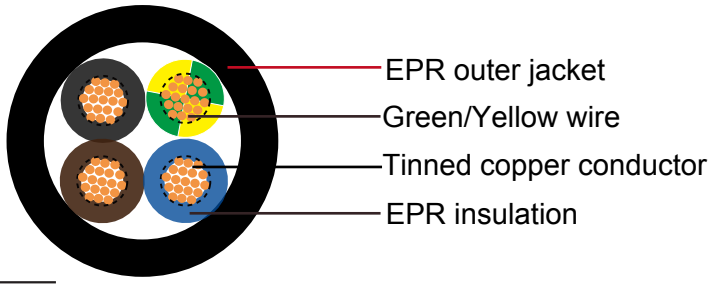
- Working voltage:
  - H05BB-F: 300/500V
  - H07BB-F: 450/750V
- Test voltage:
  - H05BB-F: 2000V
  - H07BB-F: 2500V
- Flexing bending radius: 4 × Ø
- Static bending radius: 3 × Ø
- Operating temperature:
  - H05BB-F: - 40℃- + 60℃
  - H07BB-F: - 25℃- + 90℃

Short circuit temperature: 250℃

Flame retardant: VDE 0482-332-1-2/NF C 32-070



H05BB-F



H05BB-F

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x *mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of Sheath *mm*	Nominal Overall Diameter *mm*	Nominal Weight *kg/km*
H05BB-F					
18(24/32)	2x0.75	0.6	0.8	6.3	53
17(32/32)	2x1	0.6	0.9	6.8	64
16(30/30)	2x1.5	0.8	1.0	8.3	95
14(50/30)	2x2.5	0.9	1.1	9.8	140
18(24/32)	3x0.75	0.6	0.9	6.8	65
17(32/32)	3x1	0.6	0.9	7.2	77
16(30/30)	3x1.5	0.8	1	8.8	115
14(50/30)	3x2.5	0.9	1.1	10.4	170
12(56/28)	3 x 4	1	1.2	12.2	240
10(84/28)	3 x 6	1	1.4	13.6	320
18(24/32)	4x0.75	0.6	0.9	7.4	80
17(32/32)	4x1	0.6	0.9	7.8	95
16(30/30)	4x1.5	0.8	1.1	9.8	145
14(50/30)	4x2.5	0.9	1.2	11.5	210
12(56/28)	4 x 4	1	1.3	13.5	300
10(84/28)	4 x 6	1	1.5	15.4	405
18(24/32)	5x0.75	0.6	1	8.3	100
17(32/32)	5x1	0.6	1	8.7	115
16(30/30)	5x1.5	0.8	1.1	10.7	170
14(50/30)	5x2.5	0.9	1.3	12.8	255
H07BB-F					
17(32/32)	2×1	0.8	1.3	8.20	89
16(30/30)	2×1.5	0.8	1.5	9.10	113
14(50/30)	2×2.5	0.9	1.7	10.85	165
17(32/32)	3×1	0.8	1.4	8.90	108
16(30/30)	3×1.5	0.8	1.6	9.80	138
14(50/30)	3×2.5	0.9	1.8	11.65	202
17(32/32)	4×1	0.8	1.5	9.80	134
16(30/30)	4×1.5	0.8	1.7	10.85	171
14(50/30)	4×2.5	0.9	1.9	12.80	248
17(32/32)	5×1	0.8	1.6	10.80	172
16(30/30)	5×1.5	0.8	1.8	11.90	218

H03RT-H

Application and Description

These cables are suitable for power connecting wire and complete lines between indoor household appliances, generally used for electric iron or electric saucepan.Not suitable for outdoor use nor power supply to electrical tools.Ozone, oxygen, UV rays and heat resistant.

Standard and Approval

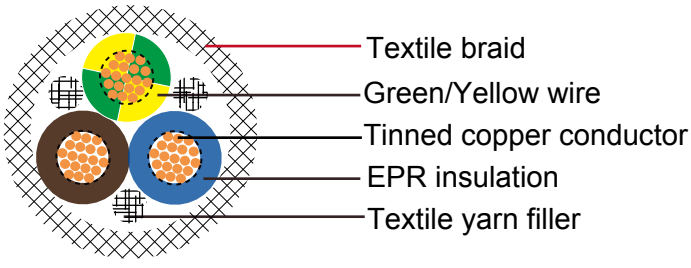
NF C 32-102-14

Cable Construction

- Flexible bare or tinned copper strand conductor acc. to DIN VDE 0295 class 5. IEC 60228 class 5
- EPR insulation type E14 of HD22.1
- Color coded to VDE 0293-308/HD 308 / UNE 21089-1(3 conductors and above with yellow/green wire)
- Textile yarn filler
- Textile braid of HD22.1

Technical Characteristics

- Working voltage: 300/300 V
- Test voltage: 2000V
- Minimum bending radius: 10× cable diameter
- Temperature range: - 25℃ to + 60℃
- Short circuit temperature: 200℃



H03RT-H

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Weight *kg/Km*
18(24/32)	2×0.75	0.80	6.30±0.20	36
17(32/32)	2×1.0	0.80	6.80±0.20	52
16(30/30)	2×1.5	0.80	7.20±0.20	42
18(24/32)	3×0.75	0.80	6.80±0.20	60
17(32/32)	3×1.0	0.80	7.20±0.20	54
16(30/30)	3×1.5	0.80	7.80±0.20	74

H05SS-F/H05SST-F

Application and Description

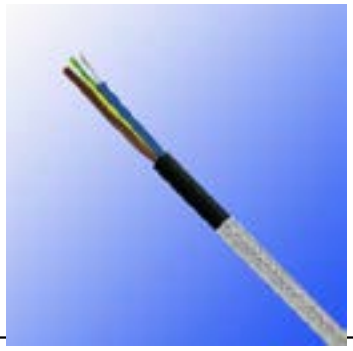
These cables are special 180 Degree C., harmonized, heavy-duty, tear-resistant black silicone multi-core cable for use in high and low temperature areas or where UV light can be damaging. The harmonization approval on these cables makes them ideal for export to or use in European countries and markets. These cables are mainly found in steel mills, foundries, glass factories, baking equipment, burners, heating and lighting systems. The cables have improved characteristics against mechanical stress and are ideal for permanent mechanically protected cable for lighting in industrial applications. The silicone jacket provides added heat-resistance, chemical, oil and acidic resistance. Not permitted for outdoor use.

Standard and Approval

NF C 32-102-15, VDE-0282 Part 15, VDE-0250 Part-816 (N2MH2G)

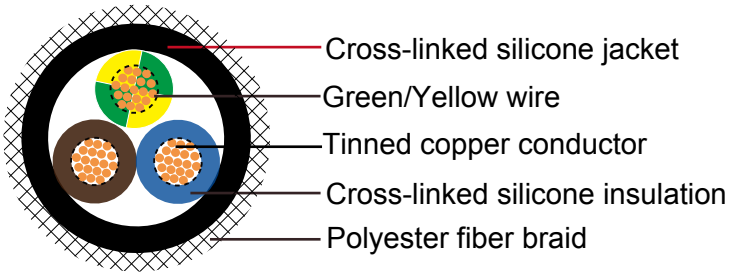
Cable Construction

- Fine tinned copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Cl-5
- Cross-linked silicone (EI 2) core insulation
- Color code VDE-0293-308
- Cross-linked silicone (EM 9) outer jacket - black
- Overall polyester fiber braid(only for H05SST-F)



Technical Characteristics

- Working voltage: 300/500V
- Test voltage: 2000V
- Flexing bending radius: 7.5×Ø
- Static bending radius: 4×Ø
- Temperature range: -60°C to +180°C
- Short circuit temperature: 220°C
- Flame retardant: NF C 32-070
- Insulation resistance: 200 MΩ x km
- Halogen-free: IEC 60754-1
- Low smoke: IEC 60754-2



H05SST-F

French Standard

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Thickness of Insulation mm	Nominal Thickness of Sheath mm	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Weight kg/km
H05SS-F						
18(24/32)	2×0.75	0.6	0.8	6.2	14.4	59.0
18(24/32)	3×0.75	0.6	0.9	6.8	21.6	71.0
18(24/32)	4×0.75	0.6	0.9	7.4	28.8	93.0
18(24/32)	5×0.75	0.6	1.0	8.9	36.0	113.0
17(32/32)	2×1.0	0.6	0.9	6.7	19.2	67.0
17(32/32)	3×1.0	0.6	0.9	7.1	29.0	86.0
17(32/32)	4×1.0	0.6	0.9	7.8	38.4	105.0
17(32/32)	5×1.0	0.6	1.0	8.9	48.0	129.0
16(30/30)	2×1.5	0.8	1.0	7.9	29.0	91.0
16(30/30)	3×1.5	0.8	1.0	8.4	43.0	110.0
16(30/30)	4×1.5	0.8	1.1	9.4	58.0	137.0
16(30/30)	5×1.5	0.8	1.1	11.0	72.0	165.0
14(50/30)	2×2.5	0.9	1.1	9.3	48.0	150.0
14(50/30)	3×2.5	0.9	1.1	9.9	72.0	170.0
14(50/30)	4×2.5	0.9	1.1	11.0	96.0	211.0
14(50/30)	5×2.5	0.9	1.1	13.3	120.0	255.0
12(56/28)	3×4.0	1.0	1.2	12.4	115.0	251.0
12(56/28)	4×4.0	1.0	1.3	13.8	154.0	330.0
10(84/28)	3×6.0	1.0	1.4	15.0	173.0	379.0
10(84/28)	4×6.0	1.0	1.5	16.6	230.0	494.0
H05SST-F						
18(24/32)	2×0.75	0.6	0.8	7.2	14.4	63.0
18(24/32)	3×0.75	0.6	0.9	7.8	21.6	75.0
18(24/32)	4×0.75	0.6	0.9	8.4	28.8	99.0
18(24/32)	5×0.75	0.6	1.0	9.9	36.0	120.0
17(32/32)	2×1.0	0.6	0.9	7.7	19.2	71.0
17(32/32)	3×1.0	0.6	0.9	8.1	29.0	91.0
17(32/32)	4×1.0	0.6	0.9	8.8	38.4	111.0
17(32/32)	5×1.0	0.6	1.0	10.4	48.0	137.0
16(30/30)	2×1.5	0.8	1.0	8.9	29.0	97.0
16(30/30)	3×1.5	0.8	1.0	9.4	43.0	117.0
16(30/30)	4×1.5	0.8	1.1	10.4	58.0	145.0
16(30/30)	5×1.5	0.8	1.1	12.0	72.0	175.0
14(50/30)	2×2.5	0.9	1.1	10.3	48.0	159.0
14(50/30)	3×2.5	0.9	1.1	10.9	72.0	180.0
14(50/30)	4×2.5	0.9	1.1	12.0	96.0	224.0
14(50/30)	5×2.5	0.9	1.1	14.3	120.0	270.0
12(56/28)	3×4.0	1.0	1.2	13.4	115.0	266.0
12(56/28)	4×4.0	1.0	1.3	14.8	154.0	350.0
10(84/28)	3×6.0	1.0	1.4	16.0	173.0	402.0
10(84/28)	4×6.0	1.0	1.5	17.6	230.0	524.0

H05GG-F

Application and Description

For general use in domestic premises, kitchens and offices and for supplying appliances where the cables are subjected to low mechanical stresses. Also for low temperature uses.(eg., cooking appliances, soldering irons, toasters)

Standard and Approval

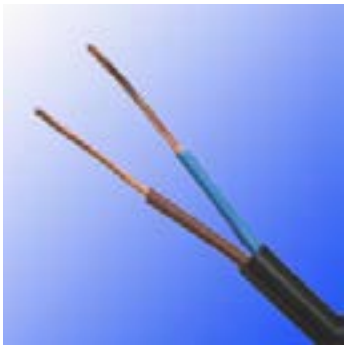
NF C 32-102-11

Cable Construction

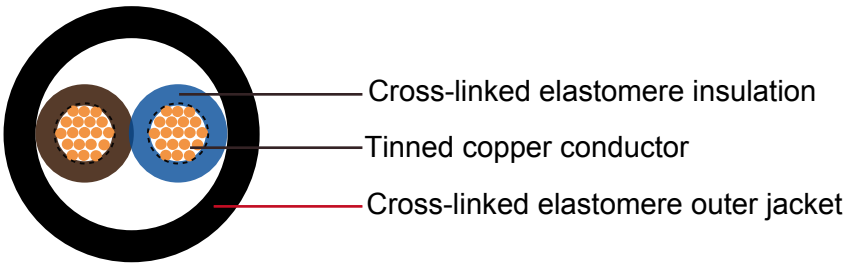
- Fine tinned copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Cl-5
- Cross-linked elastomere E13 insulation
- Color code VDE-0293-308
- Cross-linked elastomere EM 9 outer jacket - black

Technical Characteristics

- Working voltage: 300/500V
- Test voltage: 2000V
- Flexing bending radius: 4×Ø
- Static bending radius: 3×Ø
- Temperature range: -15°C to +110°C
- Short circuit temperature: 200°C
- Flame retardant: NF C 32-070
- Halogen-free: IEC 60754-1
- Low smoke: IEC 60754-2
- Smoke density: IEC 61034



H05GG-F



H05GG-F

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Thickness of sheath *mm*	Nominal Overall Diameter *mm*	Nominal Weight *kg/Km*
18(24/32)	2x0.75	0.6	0.8	6.3	53
17(32/32)	2x1	0.6	0.9	6.8	64
16(30/30)	2x1.5	0.8	1	8.3	95
14(50/30)	2x2.5	0.9	1.1	9.8	140
18(24/32)	3x0.75	0.6	0.9	6.8	65
17(32/32)	3x1	0.6	0.9	7.2	77
16(30/30)	3x1.5	0.8	1	8.8	115
14(50/30)	3x2.5	0.9	1.1	10.4	170
12(56/28)	3 x 4	1	1.2	12.2	240
10(84/28)	3 x 6	1	1.4	13.6	320
18(24/32)	4x0.75	0.6	0.9	7.4	80
17(32/32)	4x1	0.6	0.9	7.8	95
16(30/30)	4x1.5	0.8	1.1	9.8	145
14(50/30)	4x2.5	0.9	1.2	11.5	210
12(56/28)	4 x 4	1	1.3	13.5	300
10(84/28)	4 x 6	1	1.5	15.4	405
18(24/32)	5x0.75	0.6	1	8.3	100
17(32/32)	5x1	0.6	1	8.7	115
16(30/30)	5x1.5	0.8	1.1	10.7	170
14(50/30)	5x2.5	0.9	1.3	12.8	255

H01N2-D/E (NSKFFÖU)

Application and Description

These cables are used as a connection between the welding generator, the hand-electrode and the work piece. For use in the automobile industry, ship building, transport and conveyor systems, tool making machinery, welding robots etc. These cables retain their high flexibility even under influence of ozone, light, oxygen, protective gases, oil and petrol. Robust cable structure of these cables makes them resistant to low and high temperature, fire, ozone and radiation, oils, acids, fats and petrols. These cables are also ideal for outside installation in dry, moist and wet areas.

Standard and Approval

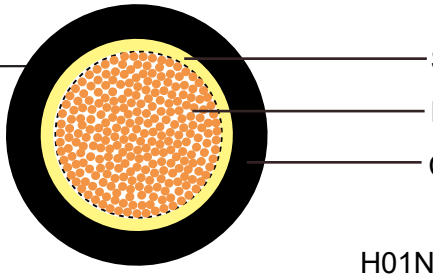
NF C 32-102-6, VDE-0282 Part-6, IEC 60332.3, IEC 60754.1, UNEL 35368, CEI 20-22 II, CEI 20-38

Cable Construction

- Extra fine bare copper strands
- Strands to DIN VDE 0295, BS 6360, IEC 60228 and HD 383
- Strands to VDE-0295 as listed below
- Synthetic or paper separator over core
- Polychloroprene rubber (neoprene) jacket EM5

Technical Characteristics

- Working voltage: 100/100 volts
- Test voltage: 1000 volts
- Flexing bending radius: 12.0 x Ø
- Fixed bending radius: 7.5 x Ø
- Flexing Temperature: -25º C to +80º C
- Fixed Temperature: -40º C to +80º C
- Flame retardant: NF C 32-070



H01N2-D/E

Cable Parameter

Cables with Standard and Approval flexibility

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
8(320/32)	1 x 10	2.0	7.7-9.7	96	135
6(512/32)	1 x 16	2.0	8.8-11.0	154	205
4(800/32)	1 x 25	2.0	10.1-12.7	240	302
2(1120/32)	1 x 35	2.0	11.4-14.2	336	420
1(1600/32)	1 x 50	2.2	13.2-16.5	480	586
2/0(2240/32)	1 x 70	2.4	15.3-19.2	672	798
3/0(3024/32)	1 x 95	2.6	17.1-21.4	912	1015
4/0(614/24)	1 x 120	2.8	19.2-24.0	1152	1310
300MCM(765/24)	1 x 150	3.0	21.2-26.4	1440	1620
350MCM(944/24)	1 x 185	3.2	23.1-28.9	1776	1916
500MCM(1225/24)	1 x 240	3.4	25.0-29.5	2304	2540

Cables with extreme high flexibility

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
8(566/35)	1 x 10	1.2	6.2-7.8	96	119
6(903/35)	1 x 16	1.2	7.3-9.1	154	181
4(1407/35)	1 x 25	1.2	8.6-10.8	240	270
2(1974/35)	1 x 35	1.2	9.8-12.3	336	363
1(2830/35)	1 x 50	1.5	11.9-14.8	480	528
2/0(3952/35)	1 x 70	1.8	13.6-17.0	672	716
3/0(5370/35)	1 x 95	1.8	15.6-19.5	912	1012
4/0(3819/32)	1 x 120	1.8	17.2-21.6	1152	1190
300MCM(4788/32)	1 x 150	1.8	18.8-23.5	1440	1305
500MCM(5852/32)	1 x 185	1.8	20.4-25.5	1776	1511

U-1000 R2V

Application and Description

These cables for energy distribution are suitable for all types of low voltage industrial-type connection, in urban grids, building installations, etc. Particularly suited in cases of high operating temperature and when high resistance to solar radiation and atmospheric agents is required. Good resistance to low temperature and chemical agents. Can be used without additional mechanical protection in the open air, fixed to walls or in raceways, inside walkways, and in empty in Cable Constructions in general. Can be laid underground with mechanical protection constructed from slabs, tiles, or bricks. They are not recommend to lay this cable in ground flooded for more than two months per year. With appropriate mechanical protection it can be use in areas subject to risk of explosion, but in this case the permitted current load is reduced by 15%.

Standard and Approval

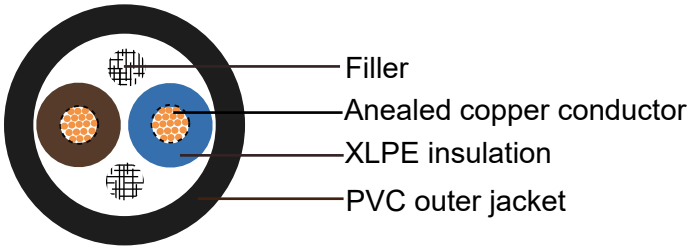
XP C 32-321 (formerly NF C 32-321), EN 60332-1/NF C 32-070 2.1(C2), EN 50575(Eca), CE Approval

Cable Construction

- Flexible electrolytic annealed copper strands
- Strands to IEC 60228 class 2
- XLPE insulation according to XP C 32-321
- Color codes to XP C32-321
- Not fibrous and not hygroscopic filler(only for multicore cables)
- Flexible black PVC outer jacket

Technical Characteristics

- Working Voltage: 600/1000 volts
- Test voltage: 3500 volts
- Minimum bending radius: 8 x Ø
- Operation temperature range: -15 °C to 90 °C
- Short-circuit temperature: 250 °C
- Flame retardant: EN 60332-1/NF C 32-070 C2



U1000 R2V

Cable Parameter

Conductor					
No. of Cores x Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
No.x mm^2		mm	mm	mm	kg/km
1x1.5	2	0.7	1.4	6.1	36
1x2.5	2	0.7	14	6.8	52
1x4	2	0.7	1.4	7.4	76
1x6	2	0.7	1.4	8.2	100
1x10	2	0.7	1.4	9.2	160
1x16	2	0.7	1.4	10.7	230
1x25	2	0.9	1.4	12.5	340
1x35	2	0.9	1.4	13.5	440
1x50	2	1	1.4	13.7	541
1x70	2	1.1	1.4	15.8	749
1x95	2	1.1	1.5	17.5	1000
1x120	2	1.2	1.5	19.3	1241
1x150	2	1.4	1.6	21.5	1523
1x185	2	1.6	1.6	24.7	1942
1x240	2	1.7	1.7	27.7	2514
1x300	2	1.8	1.8	30.6	3125
1x400	2	2.0	1.9	34.2	3967
1x500	2	2.2	2.0	38.0	5063
1x630	2	2.4	2.2	42.9	6491
2 Cores					
2x1.5	2	0.7	1.8	9.2	109
2x2.5	2	0.7	1.8	10	138
2x4	2	0.7	1.8	11	182
2x6	2	0.7	1.8	12	234
2x10	2	0.7	1.8	13.6	333
2x16	2	0.7	1.8	15.4	468
2x25	2	0.9	1.8	18.4	686
2x35	2	0.9	1.8	20.6	926
2x50	2	1	1.8	23.6	1269
2x70	2	1.1	1.8	26.8	1699
2x95	2	1.1	1.9	30.2	2269
2x120	2	1.2	2	33.7	2853
2x140	2	1.4	2.2	37.5	3539
2x185	2	1.6	2.3	41.6	4329
2x240	2	1.7	2.5	46.7	5607
2x300	2	1.8	2.6	51.4	6892
2x400	2	2	2.9	58.9	9202
3 Cores					
3x1.5	2	0.7	1.8	9.6	133
3x2.5	2	0.7	1.8	10.5	174
3x4	2	0.7	1.8	11.6	236

Conductor						
No. of Cores x Cross Section	Class of Conductor	Nominal Insulation Thickness		Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
No.x mm^2		mm		mm	mm	kg/km
3x6	2	0.7		1.8	12.6	310
3x10	2	0.7		1.8	14.4	452
3x16	2	0.7		1.8	16.3	648
3x25	2	0.9		1.8	19.5	963
3x35	2	0.9		1.8	21.9	1315
3x50	2	1		1.8	25.1	1818
3x70	2	1.1		1.9	28.7	2451
3x95	2	1.1		2	32.4	3287
3x120	2	1.2		2.1	36.1	4142
3x150	2	1.4		2.3	40.3	5140
3x185	2	1.6		2.4	44.6	6295
3x240	2	1.7		2.6	50.2	8170
3x300	2	1.8		2.7	55.2	10063
3x400	2	2		3	63.3	13451
3 Cores + 1 Earth Conductor						
		power conductor	earth conductor			
3x16/10	2	0.7	0.7	1.8	17.5	793
3x25/16	2	0.9	0.7	1.8	21.2	1070
3x35/16	2	0.9	0.7	1.8	23.8	1349
3x50/25	2	1	0.9	1.8	27.5	1890
3x70/35	2	1.1	0.9	2	31.7	2660
3x95/50	2	1.1	1	2.1	35.8	3650
3x120/70	2	1.2	1.1	2.3	39.9	4610
3x150/70	2	1.4	1.1	2.4	44.6	5450
3x185/95	2	1.6	1.1	2.6	49.5	6680
3x240/120	2	1.7	1.2	2.8	55.7	8690
3x300/150	2	1.8	1.4	3	61.4	11170
3x400/185	2	1.8	1.6	3.2	70.4	11480
4 Cores						
4x1.5	2	0.7		1.8	10.4	169
4x2.5	2	0.7		1.8	11.3	220
4x4	2	0.7		1.8	12.5	297
4x6	2	0.7		1.8	13.7	392
4x10	2	0.7		1.8	15.7	585
4x16	2	0.7		1.8	17.8	851
4x25	2	0.9		1.8	21.5	1200
4x35	2	0.9		1.8	24.1	1600
4x50	2	1		1.8	27.8	2200
4x70	2	1.1		2	32	3050
4x95	2	1.1		2.1	36.1	4070
4x120	2	1.2		2.3	40.2	5915
4x150	2	1.4		2.4	44.9	6350

French Standard

Conductor						
No. of Cores x Cross Section	Class of Conductor	Nominal Insulation Thickness		Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
No.x mm^2		mm		mm	mm	kg/km
4x185	2	1.6		2.6	49.8	7890
4x240	2	1.7		2.8	56	10400
4x300	2	1.8		3	61.7	12810
4x400	2	2		3.2	70.7	15869
5 Cores						
5x1.5	2	0.7		1.8	11.6	205
5x2.5	2	0.7		1.8	12.8	265
5x4	2	0.7		1.8	14.3	360
5x6	2	0.7		1.8	15.8	478
5x10	2	0.7		1.8	18.3	720
5x16	2	0.7		1.8	21.2	1059
4x25+1x16	2	0.9	0.7	1.8	25.3	1550
4x35+1x16	2	0.9	0.7	1.8	28.4	1991
4x50+1x25	2	1	0.9	2.1	33.1	2634
4x70+1x16	2	1.1	0.9	2.2	38.7	3560
5x70	2	1.1		2.2	39.2	4130
5x95	2	1.1		2.4	44.8	5618
5x120	2	1.2		2.5	49.8	7039
5x150	2	1.4		2.7	55.5	8655
5x185	2	1.6		2.9	62.1	10833
5x240	2	1.7		3.1	70.1	14091
7 Cores						
7x1.5	2	0.7		1.8	12.4	225
7x2.5	2	0.7		1.8	13.8	303
7x4	2	0.7		1.8	15.5	422
10 Cores						
10x1.5	2	0.7		1.8	15.6	325
10x2.5	2	0.7		1.8	17.5	426
10x4	2	0.7		1.8	19.7	597
12 Cores						
12x1.5	2	0.7		1.8	16.2	370
12x2.5	2	0.7		1.8	18.1	489
12x4	2	0.7		1.8	20.3	690
19 Cores						
19x1.5	2	0.7		1.8	19	516
19x2.5	2	0.7		1.8	21.3	725
19x4	2	0.7		1.8	24	1037
27 Cores						
27x1.5	2	0.7		1.8	22.7	712
27x2.5	2	0.7		1.8	25.5	1004
27x4	2	0.7		1.8	28.8	1445

U-1000 AR2V

Application and Description

These cables for energy distribution are suitable for all types of low voltage industrial-type connection, in urban grids, building installations, etc. Particularly suited in cases of high operating temperature and when high resistance to solar radiation and atmospheric agents is required. Good resistance to low temperature and chemical agents. Can be used without additional mechanical protection in the open air, fixed to walls or in raceways, inside walkways, and in empty in Cable Constructions in general. Can be laid underground with mechanical protection constructed from slabs, tiles, or bricks. They are not recommend to lay this cable in ground flooded for more than two months per year. With appropriate mechanical protection it can be use in areas subject to risk of explosion, but in this case the permitted current load is reduced by 15%.

Standard and Approval

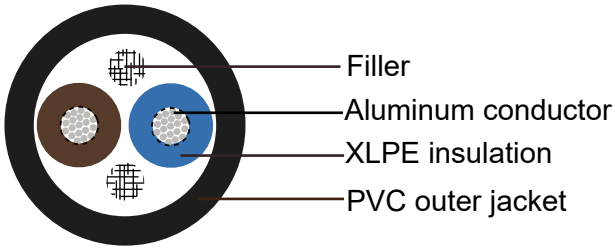
XP C 32-321(formerly NF C 32-321), EN 60332-1/NF C 32-070 2.1(C2) , EN 50575(Eca) , CE Approval

Cable Construction

- Flexible aluminum strands
- Strands to IEC 60228 class 2
- XLPE insulation according to XP C 32-321
- Color codes to XP C32-321
- Not fibrous and not hygroscopic filler(only for multicore cables)
- Flexible black PVC outer jacket

Technical Characteristics

- Working Voltage: 600/1000 volts
- Test voltage: 3500 volts
- Minimum bending radius: 8 x Ø
- Operation temperature range: -15 °C to 90 °C
- Short-circuit temperature: 250 °C
- Flame retardant: EN 60332-1/NF C 32-070 C2



U1000 AR2V

Cable Parameter

Conductor					
No. of Cores x Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
No.x mm^2		mm	mm	mm	kg/km
1x35	2	0.9	1.4	13.5	190
1x50	2	1	1.4	13.7	245
1x70	2	1.1	1.4	15.8	325
1x95	2	1.1	1.5	17.5	425
1x120	2	1.2	1.5	19.3	520
1x150	2	1.4	1.6	21.5	630
1x185	2	1.6	1.6	24.7	780
1x240	2	1.7	1.7	27.7	990
1x300	2	1.8	1.8	30.6	1210
1x400	2	2	1.9	34.2	1510
1x500	2	2.2	2	38	1860
1x630	2	2.4	2.2	42.9	2400
2 Cores					
2x1.5	2	0.7	1.8	9.2	94
2x2.5	2	0.7	1.8	10	110
2x4	2	0.7	1.8	11	146
2x6	2	0.7	1.8	12	172
2x10	2	0.7	1.8	13.6	219
2x16	2	0.7	1.8	15.4	279
2x25	2	0.9	1.8	18.4	388
2x35	2	0.9	1.8	20.6	475
2x50	2	1	1.8	23.6	610
2x70	2	1.1	1.9	26.8	796
2x95	2	1.1	2	30.2	1055
2x120	2	1.2	2.1	33.7	1267
2x150	2	1.4	2.2	37.5	1538
2x185	2	1.6	2.4	41.6	1911
2x240	2	1.7	2.5	46.7	2423
2x300	2	1.8	2.7	51.4	2992
2x400	2	2	2.9	58.9	3739
3 Cores					
3x1.5	2	0.7	1.8	9.6	112
3x2.5	2	0.7	1.8	10.5	132
3x4	2	0.7	1.8	11.6	180
3x6	2	0.7	1.8	12.6	215
3x10	2	0.7	1.8	14.4	279
3x16	2	0.7	1.8	16.3	362
3x25	2	0.9	1.8	19.5	513

Conductor					
No. of Cores x Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
No.x mm^2		mm	mm	mm	kg/km
3x35	2	0.9	1.8	21.9	635
3x50	2	1	1.8	25.1	825
3x70	2	1.1	1.9	28.7	1086
3x95	2	1.1	2	32.4	1468
3x120	2	1.2	2.1	36.1	1768
3x150	2	1.4	2.3	40.3	2151
3x185	2	1.6	2.4	44.6	2674
3x240	2	1.7	2.6	50.2	3434
3x300	2	1.8	2.7	55.2	4211
3x400	2	2	3	63.3	5307
4 Cores					
4x1.5	2	0.7	1.8	10.4	132
4x2.5	2	0.7	1.8	11.3	157
4x4	2	0.7	1.8	12.5	217
4x6	2	0.7	1.8	13.7	262
4x10	2	0.7	1.8	15.7	343
4x16	2	0.7	1.8	17.8	486
4x25	2	0.9	1.8	21.5	646
4x35	2	0.9	1.8	24.1	850
4x50	2	1	1.8	27.8	1066
4x70	2	1.1	2	32	1405
4x95	2	1.1	2.1	36.1	1900
4x120	2	1.2	2.3	40.2	2290
4x150	2	1.4	2.4	44.9	2813
4x185	2	1.6	2.6	49.8	3468
4x240	2	1.7	2.8	56	4487
4x300	2	1.8	3	61.7	5541
4x400	2	2	3.2	70.7	6934
5 Cores					
5x1.5	2	0.7	1.8	12.2	154
5x2.5	2	0.7	1.8	12.8	186
5x4	2	0.7	1.8	14.3	257
5x6	2	0.7	1.8	15.8	311
5x10	2	0.7	1.8	18.3	407
5x16	2	0.7	1.8	21.2	610
4x25+1x16	2	0.9 / 0.7	1.8	25.3	713
4x35+1x16	2	0.9 / 0.7	1.8	28.4	910
4x50+1x25	2	1 / 0.9	2.1	33.1	1151
4x70+1x16	2	1.1 / 0.9	2.2	38.7	1530
4x70+1x35	2	1.1 / 0.9	2.2	39.2	1600
4x95+1x50	2	1.1 / 1	2.4	44.3	2052

French Standard

Conductor						
No. of Cores x Cross Section	Class of Conductor	Nominal Insulation Thickness		Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
No.x mm^2		mm		mm	mm	kg/km
4x120+1x70	2	1.1	1.1	2.5	49.3	2505
4x150+1x70	2	1.4	1.1	2.7	54.3	3006
4x150+1x120	2	1.4	1.2	2.7	55	3207
4x185+1x95	2	1.6	1.1	2.9	61	3839
4x185+1x150	2	1.6	1.4	2.9	61.6	4092
4x240+1x25	2	1.7	0.9	3.1	68.6	4592
4x240+1x70	2	1.7	1.1	3.1	69.3	4713
5x95	2	1.1		2.4	44.8	2330
5x120	2	1.2		2.5	49.8	2719
5x150	2	1.4		2.7	55.5	3340
5x185	2	1.6		2.9	62.1	4262
5x240	2	1.7		3.1	70.1	5540
Multicores						
7x1.5	2	0.7		1.8	13.2	189
10x1.5	2	0.7		1.8	16.4	257
12x1.5	2	0.7		1.8	16.9	288
7x2.5	2	0.7		1.8	14.4	230
10x2.5	2	0.7		1.8	18	313
12x2.5	2	0.7		1.8	18.6	353

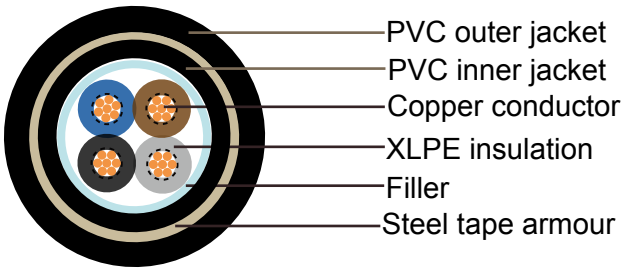
U-1000 RVFV

Application

With a sheath and armor, U-1000 RVFV is an enhanced version of the cables and U-1000 R2V They are suitable for direct burial without extra mechanical protection, fixed to the walls, laid on cable trays or raceways. May also be suitable for use in premises which poses a risk of explosion (rank BE3 NF C 15-100) with mechanical protection is necessary and in this case the intensity must be reduced by 15%.

Standard and Approval

XP C 32-322



U1000 RVFV

U1000 RVFV

Cable Construction

- Flexible copper strands
- Strands to IEC 60228 class 2
- XLPE insulation according to XP C 32-321
- Color codes to HD 308 S2(XP C32-321)
- Not fibrous and not hygroscopic filler(only for multicore cables)
- PVC inner jacket
- Two steel tapes helically wraped armour
- Flexible black PVC outer jacket

French Standard

Technical Characteristics

- Working Voltage: 600/1000 volts
- Test voltage: 3500 volts
- Minimum bending radius: 10 x Ø
- Operation temperature rage: -15 °C to 90 °C
- Short-circuit temperature: 250 °C
- Flame retardant: EN 60332-1/NF C 32-070 C2

Cable Parameter

AWG	Cross Section mm^2	Insulation Thickness mm	Amour Thickness mm	Minimum Sheath Thickness mm	Approx Overall Diameter mm	Approx Cable Weight kg/km
16	2x1.5	0.7	0.2	1.3	11.5	230
14	2x2.5	0.7	0.2	1.3	12.5	275
12	2x4	0.7	0.2	1.4	13.5	330
10	2x6	0.7	0.2	1.4	15.5	430
8	2x10	0.7	0.2	1.4	16.5	555
6	2x16	0.7	0.2	1.5	19	770
4	2x25	0.9	0.2	1.6	22.5	1080
2	2x35	0.9	0.2	1.7	25	1390
16	3x1.5	0.7	0.2	1.3	12	255
14	3x2.5	0.7	0.2	1.3	13	305
12	3x4	0.7	0.2	1.4	14	380
10	3x6	0.7	0.2	1.4	16	500
8	3x10	0.7	0.2	1.5	17.5	665
6	3x16	0.7	0.2	1.5	20	930
4	3x25	0.9	0.2	1.6	24	1325
2	3x35	0.9	0.2	1.7	26.5	1720
1	3x50	0.9	0.2	1.8	29	2125
2/0	3x70	1.1	0.2	2	34.5	3080
3/0	3x95	1.1	0.5	2.1	40	4505
4/0	3x120	1.2	0.5	2.3	44.5	5540
300MCM	3x150	1.4	0.5	2.4	48.5	6655
500MCM	3x185	1.6	0.5	2.5	53.5	8150
750MCM	3x240	1.7	0.5	2.7	61	10575
-	3x300	1.8	0.5	2.9	66.5	13055

AWG	Cross Section mm^2	Insulation Thickness mm	Amour Thickness mm	Minimum Sheath Thickness mm	Approx Overall Diameter mm	Approx Cable Weight kg/km
1	3x50+35	1.0/09	0.2	1.9	33	2730
2/0	3x70+50	1.1/0.9	0.2	2	36	3440
3/0	3x95+50	1.1/1.0	0.5	2.2	42.5	5080
4/0	3x120+70	1.2/1.1	0.5	2.3	46.5	6275
300MCM	3x150+70	1.4/1.1	0.5	2.5	50	7340
500MCM	3x185+70	1.6/1.1	0.5	2.6	56	8975
750MCM	3x240+95	1.7/1.1	0.5	2.8	62.5	11435
16	4x1.5	0.7	0.2	1.3	13	290
14	4x2.5	0.7	0.2	1.4	14	355
12	4x4	0.7	0.2	1.4	15	440
10	4x6	0.7	0.2	1.4	17	585
8	4x10	0.7	0.2	1.5	19	800
6	4x16	0.7	0.2	1.6	22	1120
4	4x25	0.9	0.2	1.7	26	1650
2	4x35	0.9	0.2	1.8	29	2135
1	4x50	1	0.2	1.9	32.5	2745
2/0	4x70	1.1	0.5	2.1	39	4295
3/0	4x95	1.1	0.5	2.3	44.5	5660
4/0	4x120	1.2	0.5	2.4	48.5	6880
300MCM	4x150	1.4	0.5	2.6	53	8315
500MCM	4x185	1.6	0.5	2.7	60.5	10510
750MCM	4x240	1.7	0.5	2.9	67	13370
-	4x300	1.8	0.5	3.1	73	16360
16	5x1.5	0.7	0.2	1.4	14	335
14	5x2.5	0.7	0.2	1.4	15	415
12	5x4	0.7	0.2	1.4	16	515
10	5x6	0.7	0.2	1.5	18.5	705
8	5x10	0.7	0.2	1.6	21	955
6	5x16	0.7	0.2	1.8	23.5	1340
4	5x25	0.9	0.2	1.8	29.5	2085
16	7x1.5	0.7	0.2	1.4	15	395
14	7x2.5	0.7	0.2	1.4	16	495
16	12x1.5	0.7	0.2	1.5	19	605
14	12x2.5	0.7	0.2	1.5	20.5	750
16	19x1.5	0.7	0.2	1.5	21.5	775
14	19x2.5	0.7	0.2	1.6	24	1045
16	24x1.5	0.7	0.2	1.6	24.5	980
14	24x2.5	0.7	0.5	1.7	29	1570
16	27x1.5	0.7	0.2	1.7	25	1050
14	27x2.5	0.7	0.2	1.8	28.5	1410
16	37x1.5	0.7	0.2	1.7	28	1320
14	37x2.5	0.7	0.2	1.8	31.5	1790

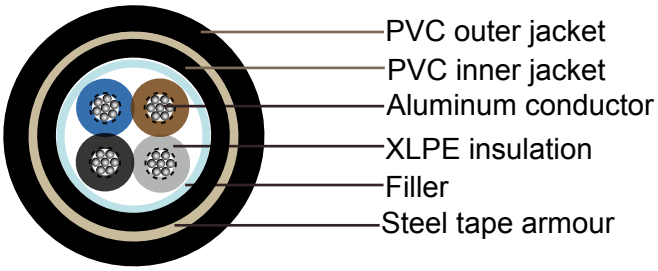
U-1000 ARVFV

Application

With a sheath and armor, U-1000 ARVFV is an enhanced version of the cables and U-1000 AR2V. They can be used in all industrial installations requiring mechanical protection. These cables can be provided in hard and SH C1 (NF C 32-323) and HR (resistant to aliphatic hydrocarbons). The design and characteristics of the materials comply with IEC 60502-1.

Standard and Approval

XP C 32-322



U1000 ARVFV

U1000 ARVFV

Cable Construction

- Aluminum conductor
- Strands to IEC 60228 class 2
- XLPE insulation according to XP C 32-321
- Color codes to HD 308 S2(XP C32-321)
- Not fibrous and not hygroscopic filler(only for multicore cables)
- PVC inner jacket
- Two steel tapes helically wraped armour
- Flexible black PVC outer jacket

Technical Characteristics

- Working Voltage: 600/1000 volts
- Test voltage: 3500 volts
- Minimum bending radius: 10 x Ø
- Operation temperature rage: -15 °C to 90 °C
- Short-circuit temperature: 250 °C
- Flame retardant: EN 60332-1/NF C 32-070 C2

Cable Parameter

AWG	Cross Section mm^2	Insulation Thickness mm	Amour Thickness mm	Minimum Sheath Thickness mm	Approx Overall Diameter mm	Approx Cable Weight kg/km
8	2x10	0.7	0.2	1.4	18.5	420
6	2x16	0.7	0.2	1.5	20.5	540
4	2x25	0.9	0.2	1.6	24.5	760
2	2x35	0.9	0.2	1.7	27	930
8	3x10	0.7	0.2	1.5	19	470
6	3x16	0.7	0.2	1.5	22	590
4	3x25	0.9	0.2	1.6	26	830
2	3x35	0.9	0.2	1.7	29	1030
1	3x50	0.9	0.2	1.8	32.5	1290
2/0	3x70	1.1	0.2	2	37.5	1710
3/0	3x95	1.1	0.5	2.1	43.5	2610
4/0	3x120	1.2	0.5	2.3	47.5	3110
300MCM	3x150	1.4	0.5	2.4	53	3770
500MCM	3x185	1.6	0.5	2.5	58	4540
750MCM	3x240	1.7	0.5	2.7	65.5	5620
-	3x300	1.8	0.5	2.9	72	6830
1	3x50+35	1.0/09	0.2	1.9	34.5	1500
2/0	3x70+50	1.1/0.9	0.2	2	40	2000
3/0	3x95+50	1.1/1.0	0.5	2.2	45	2870
4/0	3x120+70	1.2/1.1	0.5	2.3	50	3460
300MCM	3x150+70	1.4/1.1	0.5	2.5	54	4090
500MCM	3x185+70	1.6/1.1	0.5	2.6	59	4980
750MCM	3x240+95	1.7/1.1	0.5	2.8	66	6210

French Standard

AWG	Cross Section mm^2	Insulation Thickness mm	Amour Thickness mm	Minimum Sheath Thickness mm	Approx Overall Diameter mm	Approx Cable Weight kg/km
8	4x10	0.7	0.2	1.5	20.5	540
6	4x16	0.7	0.2	1.6	23.5	700
4	4x25	0.9	0.2	1.7	28	1000
2	4x35	0.9	0.2	1.8	31.5	1230
1	4x50	1	0.2	1.9	35.5	1550
2/0	4x70	1.1	0.5	2.1	42.5	2490
3/0	4x95	1.1	0.5	2.3	47.5	3120
4/0	4x120	1.2	0.5	2.4	53	3780
300MCM	4x150	1.4	0.5	2.6	58.5	4550
500MCM	4x185	1.6	0.5	2.7	64.5	5490
750MCM	4x240	1.7	0.5	2.9	72.5	6860
-	4x300	1.8	0.5	3.1	79.5	8250
8	5x10	0.7	0.2	1.6	22.5	640
6	5x16	0.7	0.2	1.8	26	820
4	5x25	0.9	0.2	1.8	31	1190

Symbol Relationship of Cable to Standards

H	Cable conforming with harmonized standards
A	Recognized National Type of cable listed in the relevant Supplement to harmonized standards

Symbol Value, Uo/U

01	=100/100V; (<300/300V)
03	300/300V
05	300/500V
07	450/750V

Symbol Material

B	Ethylene-propylene rubber
G	Ethylene-vinyl-acetate
J	Glass-fiber braid
N	Polychloroprene (or equivalent material)
N2	Special polychloroprene compound for covering of welding cables according to HD 22.6
N4	Chlorosulfonated polyethylene or chlorinated polyethylene
N8	Special water resistant polychloroprene compound
Q	Polyurethane
Q4	Polyamide
R	Ordinary ethylene propylene rubber or equivalent synthetic elastomer for a continuous operating temperature of 60ºC
S	Silicone rubber
T	Textile braid, impregnated or not, on assembled cores
T6	Textile braid, impregnated or not, on individual cores of a multi-core cable
V	Ordinary PVC
V2	PVC compound for a continuous operating temperature of 90ºC
V3	PVC compound for cables installed at low temperature
V4	Cross-linked PVC
V5	Special oil resistant PVC compound
Z	Polyolefin-based cross-linked compound having low level of emission of corrosive gases and which is suitable for use in cables which, when burned, have low emission of smoke
Z1	Polyolefin-based thermoplastic compound having low level of emission of corrosive gases and which is suitable for use in cables which, when burned, have low emission of smoke

Symbol Sheath, concentric conductors and screens

C Concentric copper conductor

C4 Copper screen as braid over the assembled cores

Symbol Sheath, concentric conductors and screens

D Strain-bearing element consisting of one or more textile components, placed at the centre of a round cable or tributed inside a flat cable

D5 Central heart (non strain-bearing for lift cables only)

D9 Strain-bearing element consisting of one or more metallic components, placed at the centre of a round cable or distributed inside a flat cable

Symbol Special construction

No Symbol Circular construction of cable

H Flat construction of “divisible” cables and cores, either sheathed or non-sheathed

H2 Flat construction of “non-divisible” cables and cores

H6 Flat cable having three or more cores, according to DH 359 or EN 50214

H7 Cable having a double layer insulation applied by extrusion

Symbol Conductor material

No Symbol Copper

-A Aluminium

Symbol Conductor form

-D Flexible conductor for use in arc welding cables to HD 22Part 6 (flexibilty different from Class 5 of HD 383)

-E Highly flexible conductor for use in arc welding cables to HD22 Part 6 (flexibility different from Class 6 of HD 383)

-F Flexible conductor of a flexible cable or cord (flexibility according to Class 5 of HD 383)

-H Highly flexible conductor of a flexible cable or cord (flexibility according to Class 6 of HD 383)

-K Flexible conductor of a cable for fixed installations (unless otherwise specified, flexibility according to Class 5 of HD 383)

-R Rigid, round conductor, stranded

-U Rigid round conductor, solid

Insulation Colour Code

Colour coded to VDE 0293-308

2 cores - Brown + Blue
3 cores (G) - Green-Yellow + Brown + Blue
3 cores - Brown + Black + Grey
4 cores (G) - Green-Yellow + Brown + Black + Grey
4 cores - Blue + Brown + Black + Grey
5 cores (G) - Green-Yellow + Blue + Brown + Black + Grey
5 cores - Blue + Brown + Black + Grey + Black

Single core - Black, Blue, Green/Yellow, Red, Yellow, White, Violet, Brown, Grey, Orange, Pink

	With ground wire	Without ground wire
2 cores	-	
3 cores		
4 cores		
5 cores		
≥6 cores	 **+ black numbered**	**black numbered**

Fire Performance Standard

At present, in cable industry, Fire Retardant, Low Smoke Halogen Free (LSZH), Low Smoke Fume (LSF) and Fire Resistant cables are all described as Fire survival Cables.

Flame Retardant

Fire retardant cables are designed for use in fire situations where the spread of flames along a cable route needs to be retarded. Due to relative low cost, fire retardant cables are widely used as fire survival cables. No matter the cables are installed in single wire or in bundles, during a fire, the flame spread will be retarded and the fire will be confined to a small area, thus reducing the fire hazard due to fire propagation.

Low Smoke & Halogen Free & Fire retardant (LSZH)

LSZH cables are not only characterized by the fire retardant performance but also by the halogen free properties, thus offering low corrosivity and toxicity. During a fire, the LSZH cables will emit less smoke and acid gases which may damage the human being and expensive equipment. Compared with normal PVC cables, LSZH cables outperform by their fire retardancy, low corrosivity and low smoke emission properties, however, normal PVC cables have better mechanical and electrical properties.

Low Smoke Fume (LSF)

The low halogen content and low corrosivity of low smoke fume cables lies somewhat in between their of fire retardant cables and LSZH cables. LSF cables also contain halogen but the content is much less than that of PVC cables. LSF cables are designed to reduce the spread of fire, toxic gases and smoke during fire. The LSF cables are usually manufactured from flame retardant PVC blended with HCL additive and smoke absorbent. These materials help improve the fire performance of the LSF cables.

Fire Resistant (FR)

Fire resistant cables are designed to maintain circuit integrity of those vital emergency services during the fire. The individual conductors are wrapped with a layer of fire resisting mica/glass tape which prevents phase to phase and phase to earth contact even after the insulation has been burnt away. The fire resistant cables exhibit same performance even under fire with water spray or mechanical shock situation.

Fire Performance Class

The main concerns for the cables in their fire survival properties are their flame spread, smoke characterization and gas toxicity. In American fire standard, the concern lies more on the first two and it differs from the European standard which concerns all these aspects. In USA, it is believed that the fire hazard is mainly due to CO toxic gas emitted and the heat release during the conversion of CO to CO2 during the fire. Therefore, to control the heat release is the most important concern for reducing the fire hazard. However, in European countries, halogen content, the corrosivity of the gases, the smoke density and the toxicity of the gas are equally important factors affecting the safety and survival of human during a fire.

Standard for Flame Retardancy

The European Electrical Committee categorizes the fire performance of the cables into three classes, namely NF C 32-070, IEC 60332-2, IEC 60332-3. NF C 32-070 and IEC 60332-2 are used to assess the flame propagation characteristics of a single wire. IEC 60332-3 is used to assess the flame propagation characteristics of bundled cables. Comparatively speaking, IEC 60332-3 for bundled cables is more demanding than NF C 32-070 for single wires.

NF C 32-070/BS 4066-1/EN 50265/CEI 20-35/1 (Flame Test On Single Vertical Insulated Wires/Cables)

This test details a method of test for the assessment of the flame propagation characteristics of a single wire or cable. In this test, a 60cm cable sample is fixed vertically inside a metallic box and a 175mm long flame is applied at 45mm from a gas burner placed at 450mm from the top at the upper portion. The specimen is deemed to have passed this test, if after burning has ceased, the charred or affected position does not reach within 50mm of the lower edge of the top clamp which is equivalent to 425mm above the point of flame application. The test method is not suitable for the testing of some small wires due to the melting of the conductors during the timeof application of the flame.

IEC 60332-3/BS 4066-3/EN 50266 /CEI 20-22/3(Flame Test On Bunched Wires/Cables)

IEC60332-3C describes a method of type approval testing to define the ability of bunched cables to resist fire propagation. In this test, a cable specimen, consisting of number of 3.5m length of cables are fixed to a vertical ladder tray where they are applied with a flame from a gas burner for a specified times under controlled air flow. Four categories (A, B, C & D) are defined and distinguished by test duration and the volume of non metallic material of the sample under test. The cable specimen is deemed to have met the requirements of the standard if, after burning has ceased, the extent of charred or affected portion does not reach a height exceeding 2.5m above the bottom edge of the burner.

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