Caledonian Cables Ltd

Industrial Cables

German 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

This certificate,

CALEDONIAN KABLO ELEKTRIK SANAYI VE TICARET LIMITED SIRKETI

MERKEZ MAHALLESI BAGLAR CADDESI C BLOK APARTMANI NO:14 C/4 KAGITHANE ISTANBUL, TURKEY

to do organization,

DESIGN, SUPPLY, FABRICATION, INSTALLATION, ASSEMBLY, COMMISSIONING, TESTING AND MAINTENANCE OF LV/MV/HV ENERGY CABLES, DATA CABLES, INSTRUMENTATION CABLES, TELECOMMUNICATION CABLES, FIBER OPTIC CABLES, RAILWAY CABLES, ROLLING STOCK CABLES, PHOTOVOLTAIC CABLES, MARINE CABLES, CABLING SYSTEM, CABLE ACCESORIES, ABC, AAC, ACSR, AAAC, POWER AND DISTRIBITION TRANSFORMERS, SWITCH GEARS, COMMUNICATION SYSTEMS, IT SYSTEMS

According to the scope,

ISO 9001:2015

To certify that Quality Management System in accordance with standard's clauses is established and being implemented.

Initial Date	:	24.08.2021
Issue Date	:	10.08.2022
Date of Validity	:	3 Yıl/ 23.08.2024
Expiry Date	:	23.08.2023
Certificate No	:	IFC-Q-8-21-I-10180

IAS ACCREDITED

MSC® 170

Approval

IFC GLOBAL SERTİFİKASYON MUAYENE VE EĞİTİM HİZMETLERİ ANONİM ŞİRKETİ
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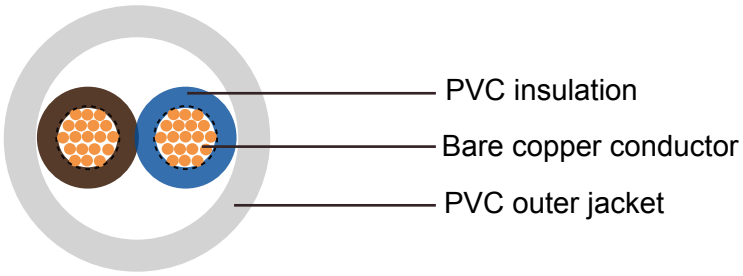
German Standard (VDE)

German Standard (VDE)

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.

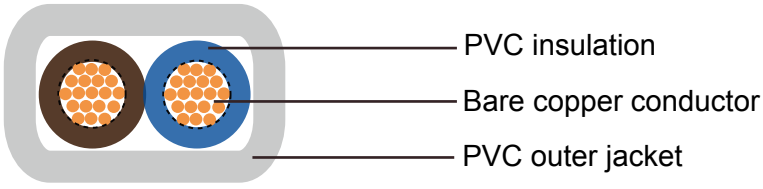


H03VV-F

H03VV-F

Standard and Approval

HD21.5, VDE 0281



H03VVH2-F

H03VVH2-F

German Standard (VDE)

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: IEC 60332.1
- Insulation resistance: 20 MΩ x km

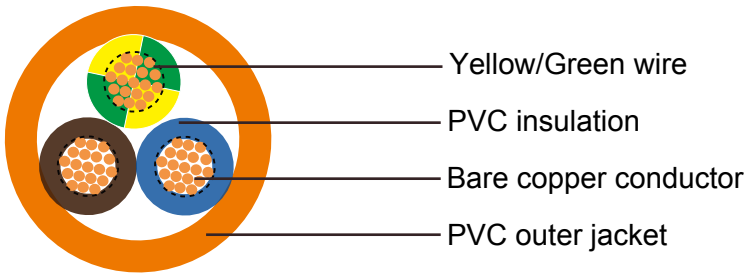
Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Thickness of Insulation *mm*	Nominal 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

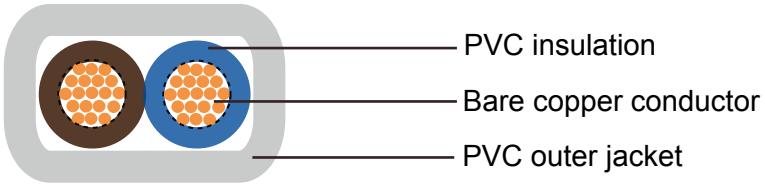


H03V2V2-F

H03V2V2-F

Standard and Approval

HD 21.12; HD 308 S2 DIN VDE 0281 part 1, part 12; DIN VDE 0293 part 308; DIN VDE 0295



H03V2V2H2-F

H03V2V2H2-F

German Standard (VDE)

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: IEC 60332.1
- 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 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

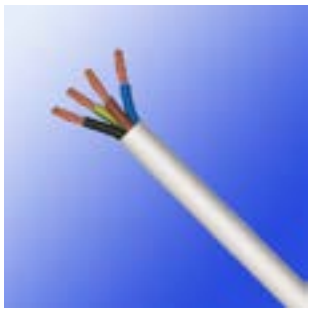
These cables are suited for medium mechanical stress in damp and wet environments such as refrigerators, washing machines, spin dryers and other appliances, as long as it meets applicable equipment specifications. These cables are also suited for cooking and heating apparatus, provided that the cable 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

VDE0281, CENELEC HD21.5

Cable Construction

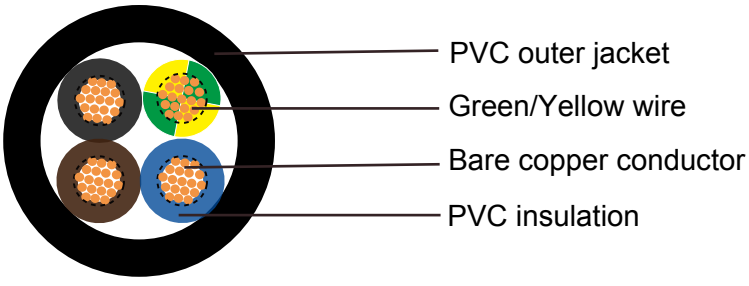
- Bare copper fine wire conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5, IEC 60228 cl. 5 and HD 383
- PVC core insulation T12 to VDE-0281 Part 1
- Color coded to VDE-0293-308
- Green-yellow grounding (3 conductors and above)
- PVC outer jacket TM2



H05VV-F

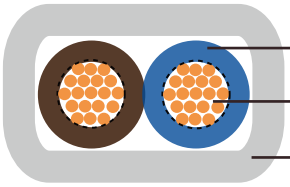
Technical Characteristics

- 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: IEC 60332.1
- Insulation resistance: 20 MΩ x km



H05VV-F

German Standard (VDE)



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(30/50)	2 x 2.50	0.8	1.0	9.2	48	134
14(30/50)	3 x 2.50	0.8	1.1	10.1	72	169
14(30/50)	4 x 2.50	0.8	1.1	11.2	96	211
14(30/50)	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

HD 21.12; HD 308 S2, DIN VDE 0281 part 1, part 12, DIN VDE 0293 part 308, DIN VDE 0295

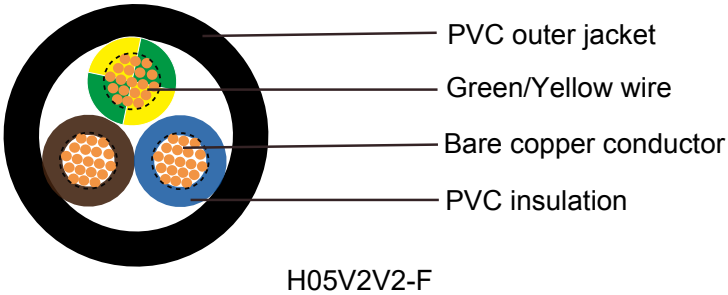
Cable Construction

- 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

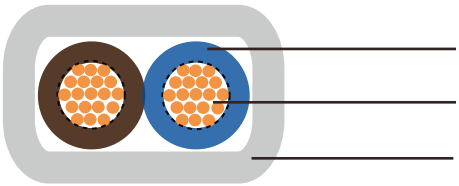
Technical Characteristics

- 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: IEC 60332.1
- Insulation resistance: 20 MΩ x km



H05V2V2-F

German Standard (VDE)



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(30/50)	2 x 2.50	0.8	1.0	9.2	48	129.1
14(30/50)	3 x 2.50	0.8	1.1	10	72	163
14(30/50)	4 x 2.50	0.8	1.1	10.9	96	199.6
14(30/50)	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

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

HD 359 S3, DIN VDE 0281 part 404, IEC 60332-1, BS EN 50214

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, IEC 60332-1

-Insulation resistance: 20 MΩ x km

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)	8 x 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	130	58
16(30/30)	5 x1.5	1.5	0.8	5.1 x 17.7	158	72
16(30/30)	7 x1.5	1.5	0.8	5.1 x 25.2	223	101
16(30/30)	8 x1.5	1.5	0.8	5.1 x 27.3	245	115
16(30/30)	10 x1.5	1.5	0.8	5.1 x 33.9	304	144
16(30/30)	12 x1.5	1.5	0.8	5.1 x 40.5	365	173
16(30/30)	18 x1.5	1.5	0.8	6.1 x 61.4	628	259
16(30/30)	24 x1.5	1.5	0.8	5.1 x 83.0	820	346
14(30/50)	4 x2.5	1.9	0.8	5.8 x 18.1	192	96
14(30/50)	5 x2.5	1.9	0.8	5.8 x 21.6	248	120
14(30/50)	7 x2.5	1.9	0.8	5.8 x 31.7	336	168
14(30/50)	8 x2.5	1.9	0.8	5.8 x 33.7	368	192
14(30/50)	10 x2.5	1.9	0.8	5.8 x 42.6	515	240
14(30/50)	12 x2.5	1.9	0.8	5.8 x 49.5	545	288
14(30/50)	24 x2.5	1.9	0.8	5.8 x 102.0	1220	480
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

H05VV-F/SJT

Application and Description

These cables are suited to be used for cooking and heating apparatus under the condition that cable does not come in direct contact with hot parts of the apparatus and no other influences or heat. The cables are suitable for fixed installation in furniture, partition walls, decoration covering and in hollow spaces of prefabricated building parts. They are not suitable for use in open air, in industries (also permitted to tailor workshops and of that kind) and in agriculture plants and for connecting commercial electrical tools.

Standard and Approval

HD21.5 S3, VDE-0281 Part-5 & Part-2, UL Style 62 (SJT), VW-1, CSA 22.2 No 49, FT-1

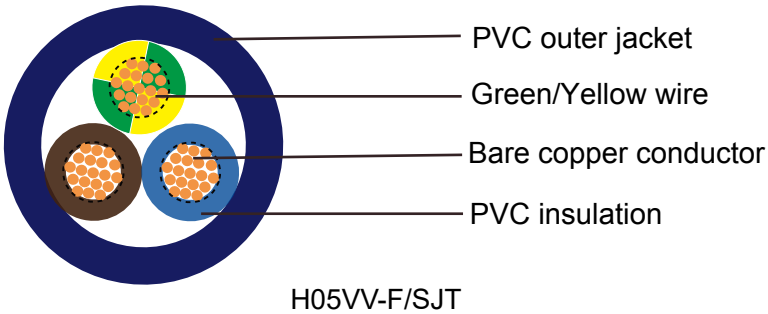
Cable Construction

- 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/SJT

Technical Characteristics

- Working voltage VDE: 300/500 volts
- Working Voltage UL/CSA: 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
- Flame retardant: IEC 60332.1, VW-1
- Insulation resistance: 20 MΩ x km



H05VV-F/SJT

German Standard (VDE)

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
17(32/32)	2 x 1	0.6	0.8	7.2	19.2	56
17(32/32)	3 x 1	0.6	0.8	7.6	28.8	73
17(32/32)	4 x 1	0.6	0.9	8.6	38.4	86
17(32/32)	5 x 1	0.6	0.9	9.4	48	105
16(30/30)	2 x 1.5	0.7	0.8	7.6	28	82
16(30/30)	3 x 1.5	0.7	0.9	8.3	44	96
16(30/30)	4 x 1.5	0.7	1.0	9.3	58	117
16(30/30)	5 x 1.5	0.7	1.1	10.4	72	144
14(30/50)	2 x 2.5	0.8	1.0	9.2	48	118
14(30/50)	3 x 2.5	0.8	1.1	10	72	152
14(30/50)	4 x 2.5	0.8	1.1	10.9	96	192
14(30/50)	5 x 2.5	0.8	1.2	12.2	120	243
12(56/28)	2 x 4	0.8	1.1	10.6	76	195
12(56/28)	3 x 4	0.8	1.2	11.5	115	235
12(56/28)	4 x 4	0.8	1.2	12.4	154	300
12(56/28)	5 x 4	0.8	1.4	14.1	192	361

H05RN-F/H05RNH2-F

Application and Description

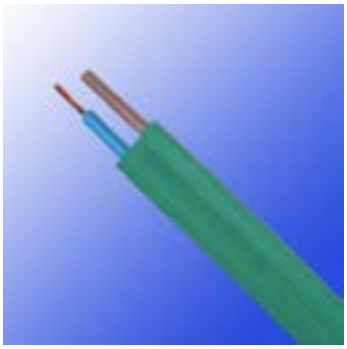
These cables are flexible, mainly recommended for use in electrical equipment under low stress in dry, damp and wet areas in indoor or outdoor environments. Commonly used for connection of electrical appliances when exposed to low mechanical strain in household, offices and for light utilities. Anywhere 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

HD22.4 S3, VDE-0282 Part-4

Cable Construction

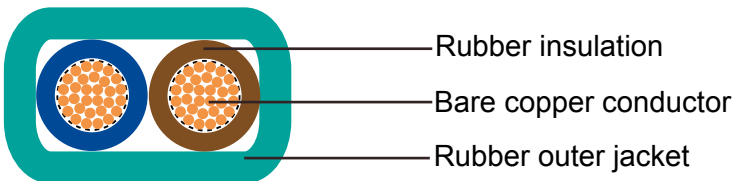
- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- Rubber core insulation EI4 to VDE-0282 Part-1
- Color code VDE-0293-308
- Green-yellow grounding, 3 conductors and above
- Polychloroprene rubber (neoprene) jacket EM2



H05RNH2-F

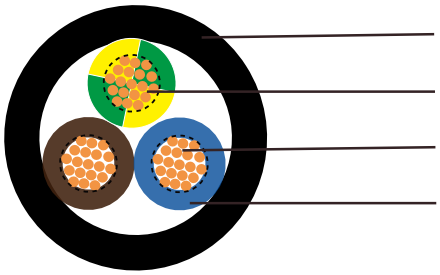
Technical Characteristics

- 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: IEC 60332.1
- Insulation resistance: 20 MΩ x km

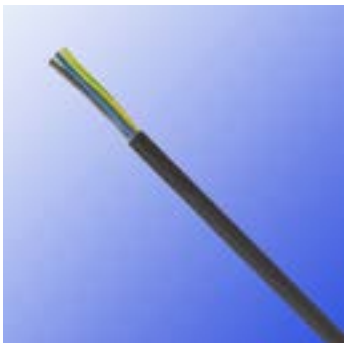


H05RNH2-F

German Standard (VDE)



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

HD22.4 S3, VDE-0282 Part-4

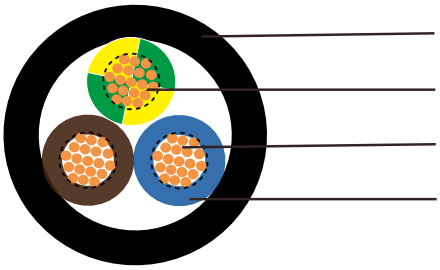
Cable Construction

- 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: IEC 60332.1
- Insulation resistance: 20 MΩ x km

German Standard (VDE)



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. Max operating voltage in single or three phase system is Uo/U 476/825 volts. In a direct current system max operating voltage is Uo/U 619/1238 volts. If in a fixed or protected installation Uo/U is 600/1000 volts. These cables are resistant to flame, acids, and oil penetration.

Standard and Approval

HD22.4 S3, VDE-0282 Part-4, IEC 60245-4

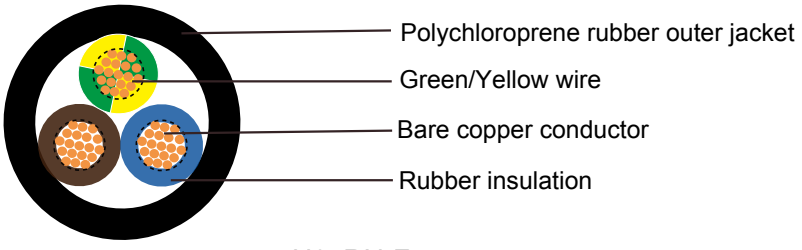
Cable Construction

- 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 EM2

H07RN-F

Technical Characteristics

- Working voltage: 450/750 volts
- Test voltage: 2500 volts
- Flexing bending radius: 6 x Ø
- Fixed bending radius: 4.0 x Ø
- Flexing Temperature: -25º C to +60º C
- Fixed Temperature: -40º C to +60º C
- Short circuit temperature: +200 º C
- Flame retardant: IEC 60332.1
- Insulation resistance: 20 MΩ x km



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*	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
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

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*
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

A07RN-F

Application and Description

These cables are designed to provide high flexibility and have the capacity to withstand ozone,weather and oils/greases, mainly used for connecting of power tools, mobile units and machines for medium mechanical requirements in dry and humid rooms, for outdoor use, in explosive areas, in commercial and agricultural plants and on Cable Construction lots. Also suitable for fixed laying e.g. on-wall in provisional buildings, for directly laying on modules of hoisting devices, machinery etc. Max operating voltage in single or three phase system is Uo/U 476/825 volts. In a direct current system max operating voltage is Uo/U 619/1238 volts. If in a fixed or protected installation Uo/U is 600/1000 volts.

Standard and Approval

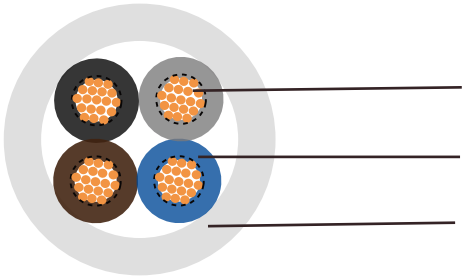
Authorized national to A07RN-F, VDE-0282 Part-4

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
- 3,4,& 5 cores cables - NO green/yellow ground
- Color code VDE-0293-308
- Green-yellow grounding, 3 conductors and above
- Polychloroprene rubber (neoprene) jacket EM2

Technical Characteristics

- Working voltage: 450/750 volts
- Test voltage: 2500 volts
- Flexing bending radius: 7.5 x Ø
- Fixed bending radius: 4.0 x Ø
- Flexing Temperature: -25º C to +60º C
- Fixed Temperature: -40º C to +60º C
- Flame retardant: IEC 60332.1
- Insulation resistance: 20 MΩ x km



A07RN-F

A07RN-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*
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
16(30/30)	27 x 1.5	0.8	3.6	25.5-31.5	389	1077
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)	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
14(50/30)	27 x 2.5	0.9	4.2	30.0-37.0	648	1521
14(50/30)	37x 2.5	0.9	4.5	34.0-37.5	725	1952
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
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
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
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

H07RN8-F

Application and Description

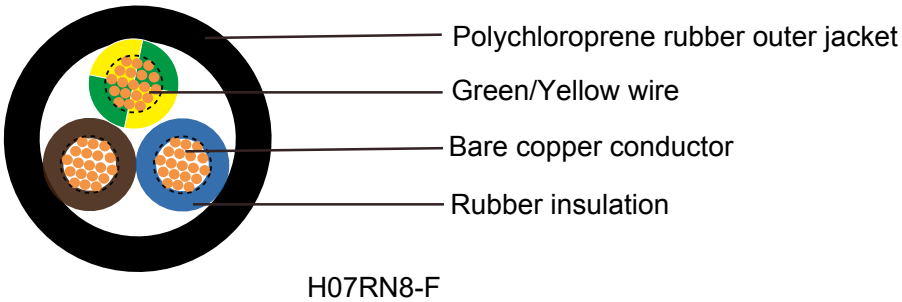
These cables particularly for use in fresh water up to 10 m depth with a maximum water temperature up to 40°C , such as the connection of submersible pumps or similar applications. Not suitable for underwater power transmission or installation in a watercourse, or where it is possible that mechanical 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

HD22.16 S1, VDE-0282 Part-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

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: IEC 60332.1
- 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 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

German Standard (VDE)

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

CENELEC HD 22.12 S1, VDE 0282 Part-12, IEC 60245-4

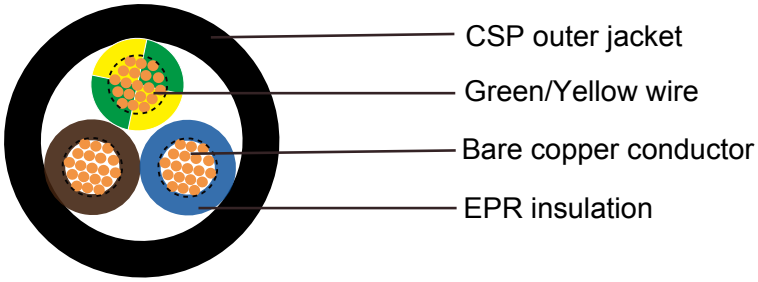
Cable Construction

- 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: IEC 60332.1
- Insulation resistance: 20 MΩ x km

German Standard (VDE)



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

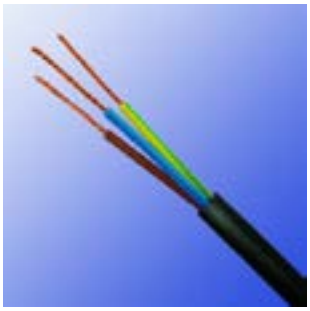
These cables are made with synthetic rubbers having an excellent temperature resistance and can be used either in dry, humid or wet places or in contact with oil or grease, in weather conditions and under medium mechanical stress, for example power supply to equipment in industrial plants, large size 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

CENELEC HD 22.12 S1, VDE-0282 Part-12, IEC 60245-4, IEC 60754-1/2

Cable Construction

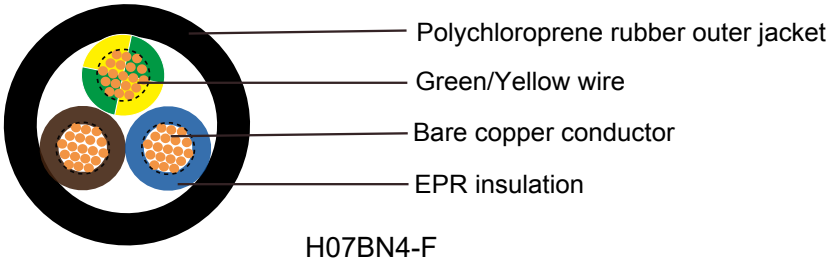
- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- EPR(Ethylene Propylene Rubber) rubber EI7 insulation
- Color code VDE-0293-308
- Special polychloroprene rubber outer jacket EM7



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

German Standard (VDE)

- Maximum Short Circuit Temperature: +250° C
- Flame retardant: IEC 60332.1C2/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

HD 21.3 S3, VDE-0281 Part-3

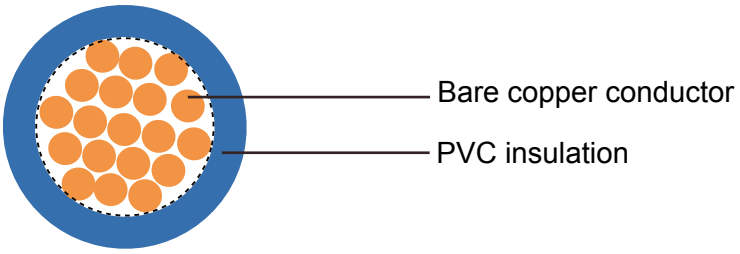
Cable Construction

- 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: -5º C to +70º C
- Static temperature: -30º C to +80º C
- Flame retardant: IEC 60332.1
- 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

HD 21.3 S3, VDE-0281 Part-3

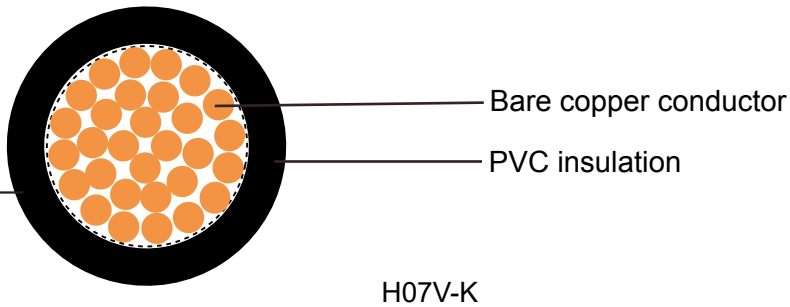
Cable Construction

- 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: IEC 60332.1
- Insulation resistance: 10 MΩ x km



H07V-K

German Standard (VDE)

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

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

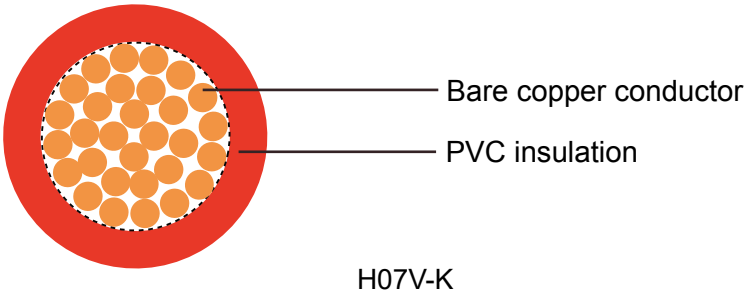
Cable Construction

- 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

German Standard (VDE)

- Temperature UL-MTW: -40º C to +90º C
- Temperature CSA-TEW: -40º C to +105º C
- Flame retardant: IEC 60332.1, 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 Cable W*eight* *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

HD 21.7 S2, VDE-0281 Part-7

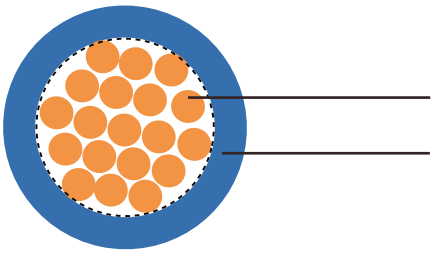
Cable Construction

- 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: IEC 60332.1
- Insulation resistance: 20 MΩ x km

German Standard (VDE)



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 Cable 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

HD 21.7 S2, VDE-0281 Part-3, UL-Standard and Approval 1063 MTW, UL-AWM Style 10269, CSA TEW, CSA-AWM 1 A/B, FT-1

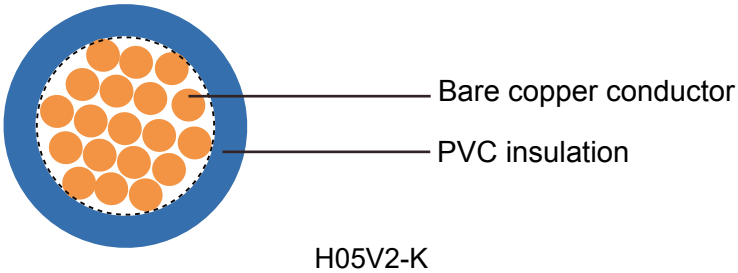
Cable Construction

- 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

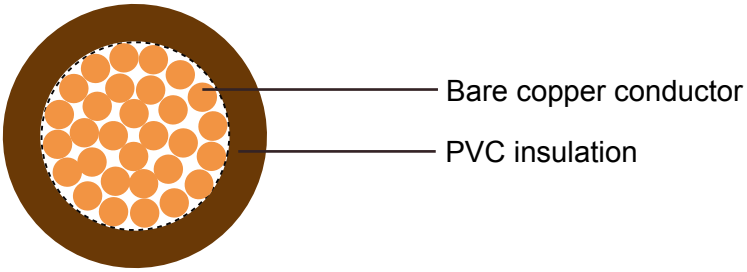
- Working voltage: 300/500v (H05V2-K UL)
- Working voltage: 450/750v (H07V2-K UL)
- Working voltage UL(MTW) & CSA: 600v
- Working voltage UL (AWM): 1000v
- Test voltage: 2500 volts (4000 volts UL)
- Flexing/Static bending radius: 10-15 x Ø



H05V2-K

German Standard (VDE)

- 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: IEC 60332.1, 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

HD 21.3 S3, VDE-0281 Part-3

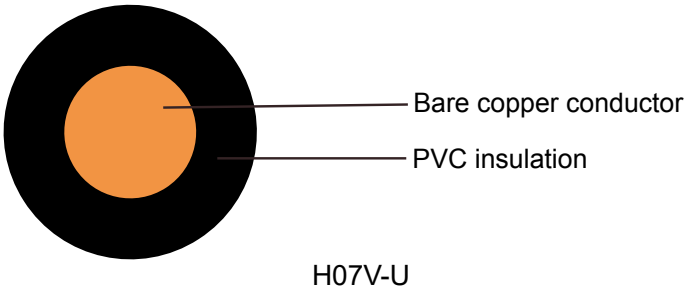
Cable Construction

- 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

German Standard (VDE)

- Static temperature: -30º C to +90º C
- Short circuit temperature: +160º C
- Flame retardant: IEC 60332.1
- 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

HD 21.7 S2, VDE-0281 Part-7

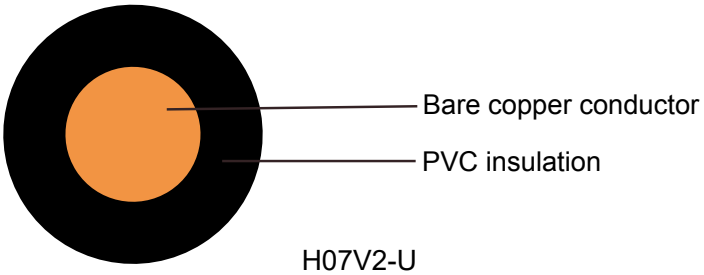
Cable Construction

- Solid bare copper single wire
- Solid to DIN VDE 0281-3, HD 21.3 S3 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: IEC 60332.1
- Insulation resistance: 10 MΩ x km



H07V2-U

German Standard (VDE)

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

HD22.13 S1 & A1, VDE-0282 Part-13,IEC 60245-4 , IEC 60754, EN 61034

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

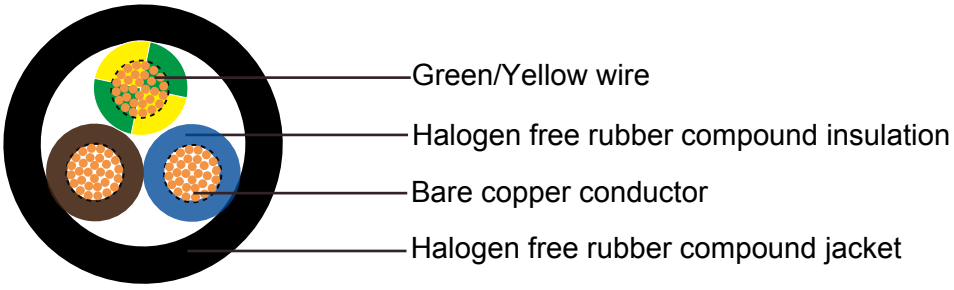
- Flexing voltage: 450/750 volts
- Fixed voltage: 600/1000 volts
- Test voltage: 2500 volts
- Flexing bending radius:6 x Ø
- Fixed bending radius: 4.0 x Ø
- Flexing Temperature: -5º C to +70º C
- Fixed Temperature: -40º C to +70º C
- Short circuit temperature: +250º C
- Flame retardant: IEC 60332.3 C1,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

H07ZZ-F

German Standard (VDE)

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

HD21.14 S1, VDE-0281 Part-14, VDE 0482-332-1-2, EN60332-1, EN50267, EN50363

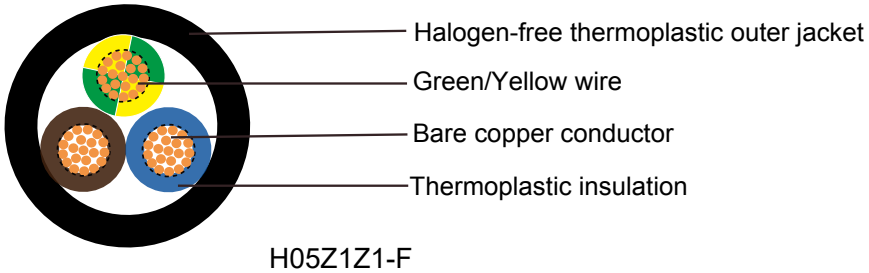
Cable Construction

- 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



H05Z1Z1-F

German Standard (VDE)

- 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, IEC 60332.1

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

HD 21.3 S3, VDE-0281 Part-3

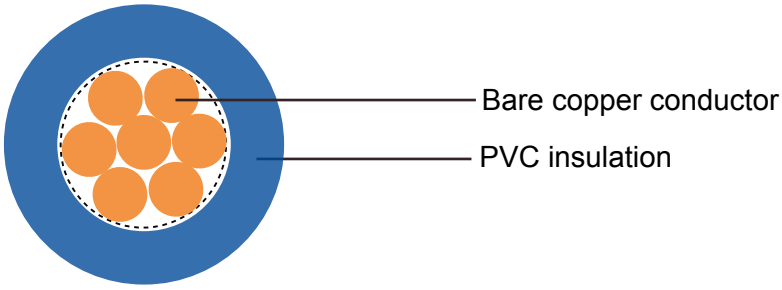
Cable Construction

- 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: IEC 60332.1
- Insulation resistance: 10 MΩ x km

H05V-R



H05V-R

German Standard (VDE)

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

HD 22.9 S2, VDE-0282 Part-9, BS 7211, IEC 60754-2, EN 50267, VDE 0482-267

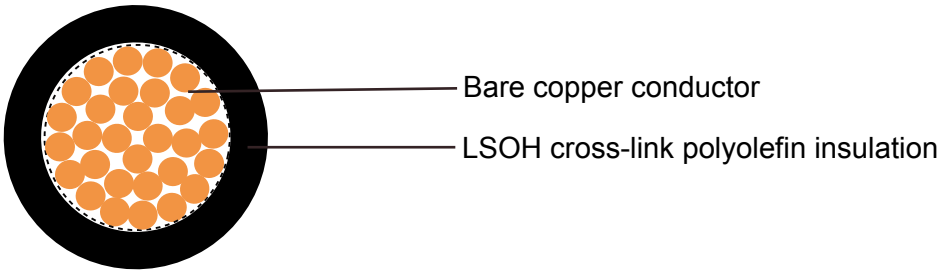
Cable Construction

- 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: IEC 60332.1
- 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, IEC 60332.1

German Standard (VDE)



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

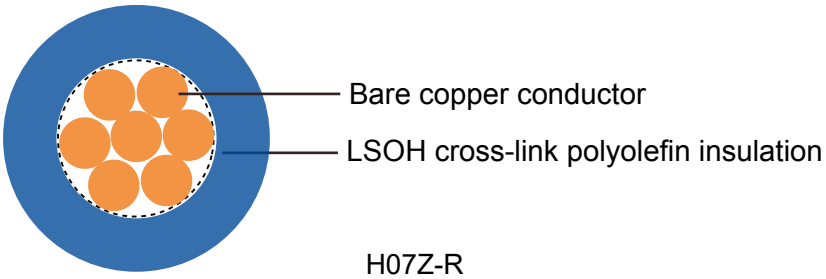
HD 22.9 S2, VDE-0282 Part-9, BS 7211, IEC 60754-2, EN 50267, VDE 0482-267

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: IEC 60332.1
- Insulation resistance: 10 MΩ x km

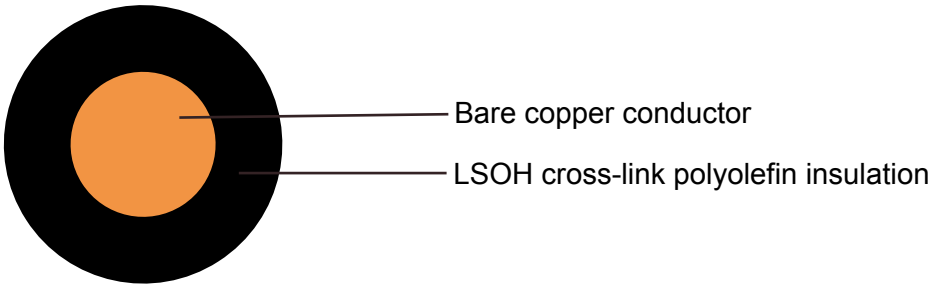


H07Z-R

German Standard (VDE)

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

HD22.10 S1, VDE-0282 Part-10

Cable Construction

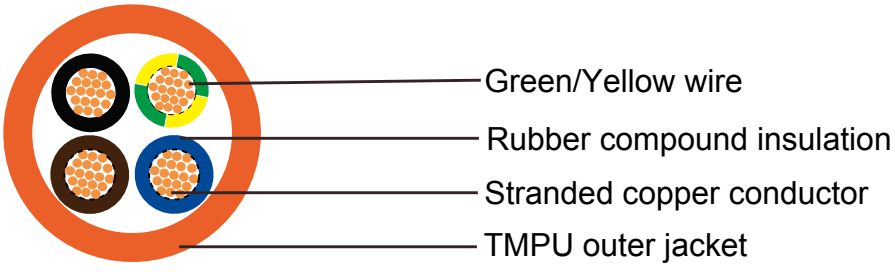
- Fine bare or tinned copper strands
- Strands to VDE-0295 Class-5, IEC 60228 and HD383 Class-5
- Rubber compound insulation E16 to VDE-0282 Part-1
- Color coded to VDE-0293-308
- Conductors stranded in layers with optimal lay-length
- Green-yellow earth core in the outer layer
- Polyurethane/PUR outer 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: IEC 60332.1
- 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 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

HD 22.7 S2, VDE-0282 Part-7

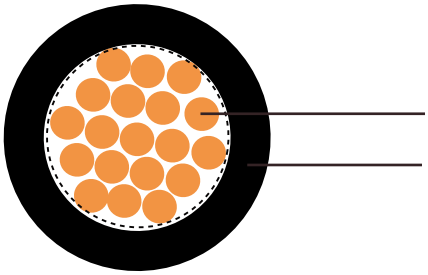
Cable Construction

- 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: IEC 60332.1
- Insulation resistance: 10 MΩ x km

German Standard (VDE)



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

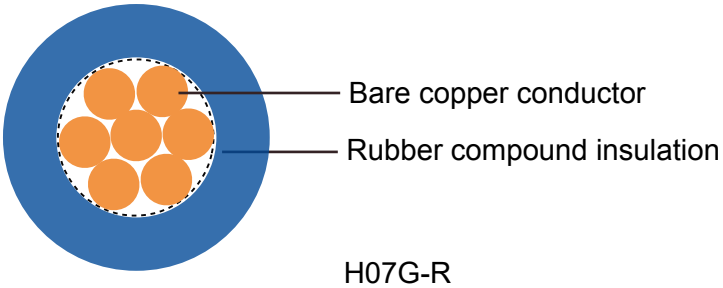
HD 22.7 S2, VDE-0282 Part-7

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

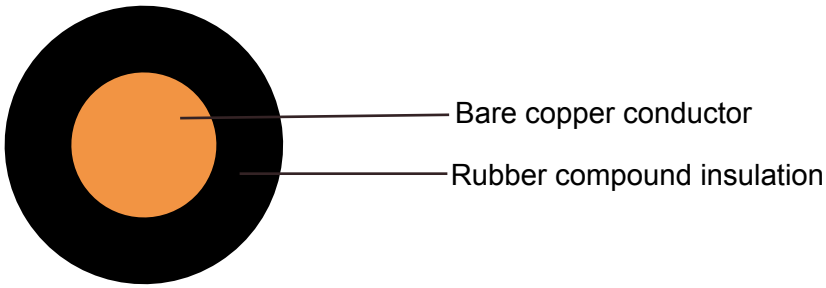
Technical Characteristics

- 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: IEC 60332.1
- Insulation resistance: 10 MΩ x km



H07G-R

German Standard (VDE)



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

<HAR> HD 21.13 S1, VDE-0281 Part-13, EN60332-1

Cable Construction

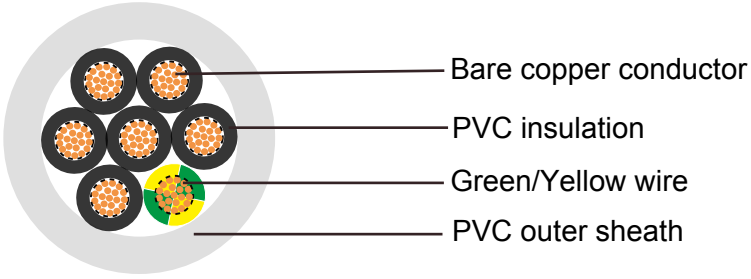
- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- PVC insulation T12 to DIN VDE 0281 part 1
- Green-yellow grounding (3 conductors and above)
- Cores to VDE-0293 colors
- PVC sheath TM5 to DIN VDE 0281 part 1

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: IEC 60332.1
- Insulation resistance: 20 MΩ x km

H05VV5-F

German Standard (VDE)



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(30/50)	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(30/50)	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(30/50)	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(30/50)	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(30/50)	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(30/50)	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(30/50)	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(30/50)	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(30/50)	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(30/50)	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(30/50)	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(30/50)	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

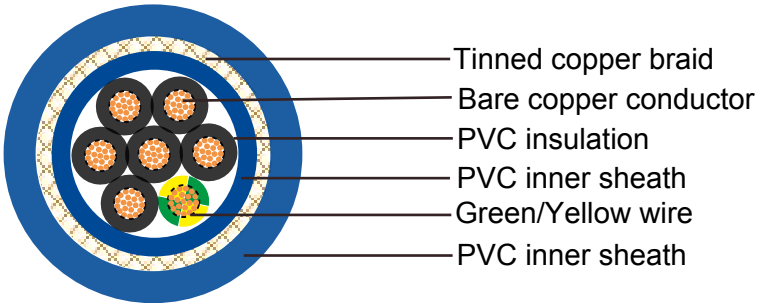
HD 21.13 S1, VDE-0281 Part-13, EN60332-1

Cable Construction

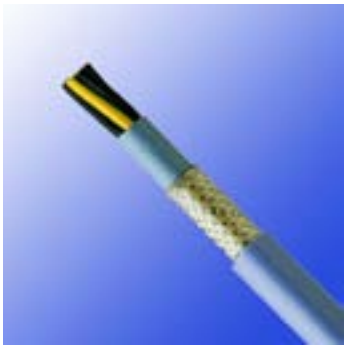
- Fine bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Class-5
- PVC insulation T12 to DIN VDE 0281 part 1
- Green-yellow grounding (3 conductors and above)
- Cores to VDE-0293 colors
- PVC inner sheath TM2 to DIN VDE 0281 part 1
- Tinned copper braided shielding, covering approx. 85%
- 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: IEC 60332.1
- 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(30/50)	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(30/50)	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(30/50)	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(30/50)	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(30/50)	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

German Standard (VDE)

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(30/50)	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(30/50)	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(30/50)	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(30/50)	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(30/50)	60 x 2,50	0.8	1.2	2.4	47,2	1706	2870

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

EN 50214; HD 359 S3; IEC 60332-1

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: IEC 60332-1
- 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

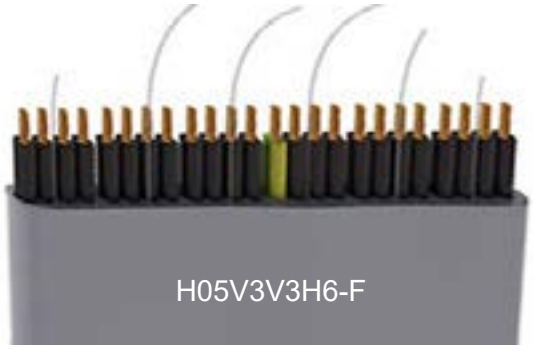
DIN VDE 0281 part 404, EN 50214, HD 359 S3, IEC 60332-1

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: IEC 60332 -1
- Insulation resistance: 350 MΩ x km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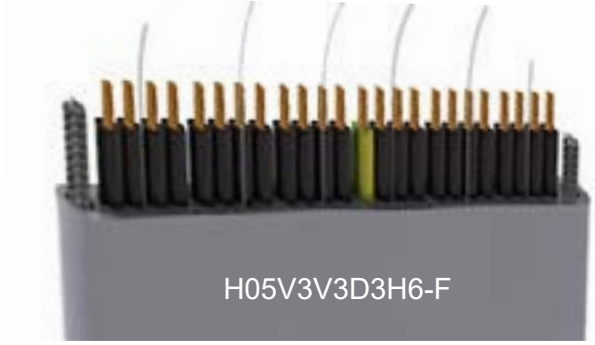
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Cable Parameter

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

HD 22.12, DIN VDE 0282-12

Cable Construction

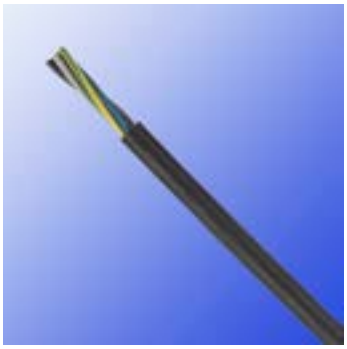
- Bare/Tinned copper strand conductor
- acc. to DIN VDE 0295 class 5. IEC 60228 class 5
- Insulation: EPR rubber type E17
- Color coded to VDE 0293-308(3 conductors and above with yellow/green wire)
- Sheath: EPR rubber type EM6
- Sheath color: normally black

Technical Characteristics

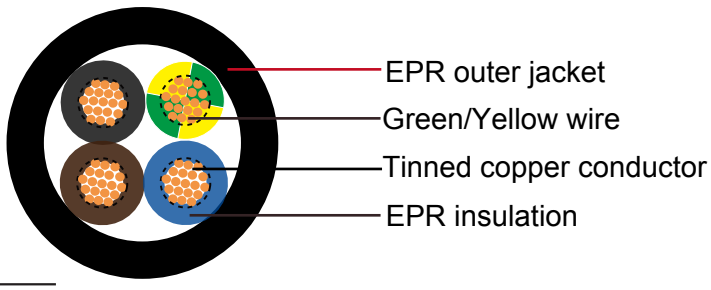
- Working voltage:
  - H05BB-F: 300/500V
  - H07BB-F: 450/750V
- Test voltage:
  - H05BB-F: 2000V
  - H07BB-F: 2500V
- Flexing bending radius: 4 × Ø
- Static bending radius: 3 × Ø
- Operating temperature:
  - H05BB-F: - 40℃- + 60℃
  - H07BB-F: - 25℃- + 90℃

Short circuit temperature: 250℃

Flame retardant: VDE 0482-332-1-2/IEC 60332-1



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(30/50)	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(30/50)	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(30/50)	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(30/50)	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(30/50)	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(30/50)	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(30/50)	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

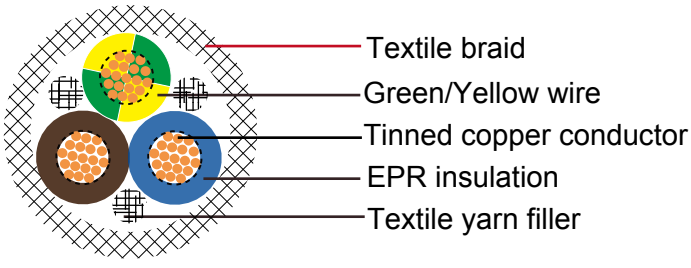
HD 22.14, DIN VDE 0282-14

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(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 Cable *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

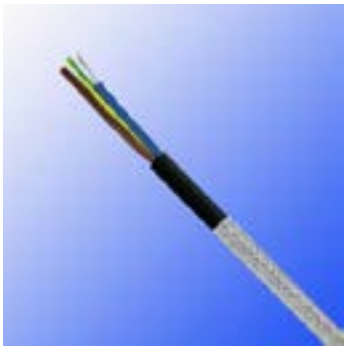
These cables are special 180 Degree C., harmonized, heavy-duty, tear-resistant black silicone multi-core cable for use in high and low temperature areas or where UV light can be damaging. The harmonization approval on these cables makes them ideal for export to or use in European countries and markets. 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

HD 22.15 S1, VDE-0282 Part 15, VDE-0250 Part-816 (N2MH2G)

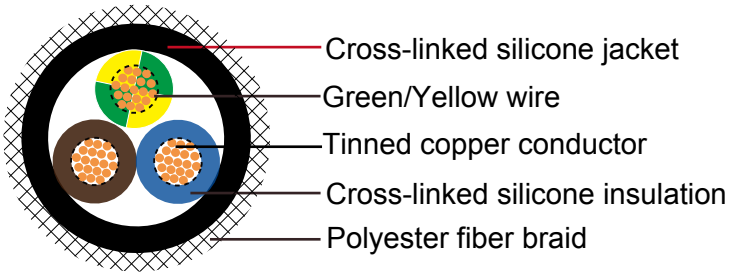
Cable Construction

- 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: IEC 60332 -1
- Insulation resistance: 200 MΩ x km
- Halogen-free: IEC 60754-1
- Low smoke: IEC 60754-2



H05SST-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*
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(30/50)	2×2.5	0.9	1.1	9.3	48.0	150.0
14(30/50)	3×2.5	0.9	1.1	9.9	72.0	170.0
14(30/50)	4×2.5	0.9	1.1	11.0	96.0	211.0
14(30/50)	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(30/50)	2×2.5	0.9	1.1	10.3	48.0	159.0
14(30/50)	3×2.5	0.9	1.1	10.9	72.0	180.0
14(30/50)	4×2.5	0.9	1.1	12.0	96.0	224.0
14(30/50)	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

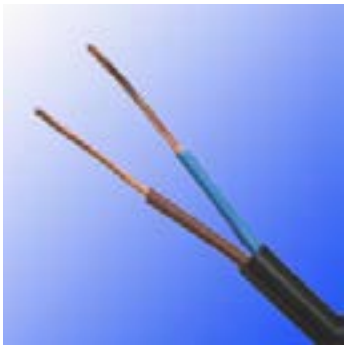
HD 22.11 S1, VDE 0282 part 11

Cable Construction

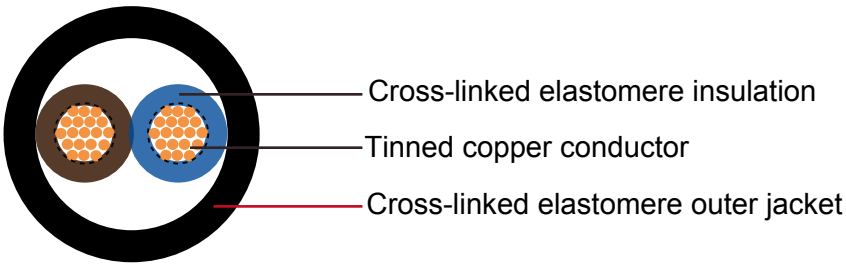
- Fine tinned copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Cl-5
- Cross-linked elastomere E13 insulation
- Color code VDE-0293-308
- Cross-linked elastomere EM 9 outer jacket - black

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: IEC 60332 -1
- Halogen-free: IEC 60754-1
- Low smoke: IEC 60754-2
- Smoke density: IEC 61034



H05GG-F



H05GG-F

German Standard (VDE)

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(30/50)	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(30/50)	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(30/50)	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(30/50)	5x2.5	0.9	1.3	12.8	255

H00V-D

Application and Description

These high flexible earth conductors are used for earthing of portable equipment and short circuiting. These cables perform a protective function in the live repair of high voltage power supply in railway systems, failing current equipment, alternating current systems and in networks of transmission and distribution. Because of that these are designated as safety cables. These earthing cables offer special characteristics with low weights, high flexibility to a wide temperature range and the behavior in high temperature. The protective overall PVC jacket assure essential function for proper protection against mechanical and chemical stresses.

Standard and Approval

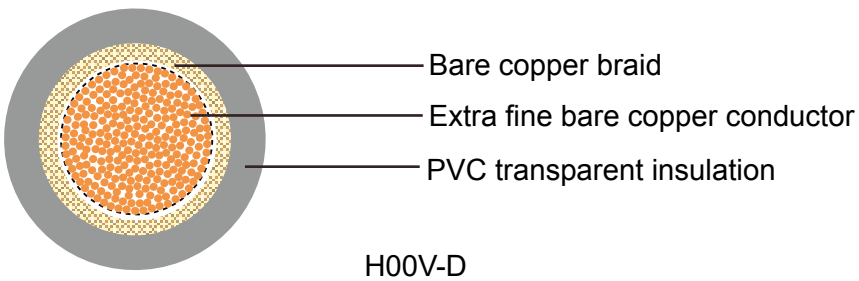
EN61138, VDE-0283 Part-3, DIN 46438 & DIN 46440

Cable Construction

- Extra fine bare copper strands
- Strands to DIN VDE 0295, BS 6360, IEC 60228 and HD 383
- Overall bare copper wire braid (for ESUY type)
- PVC transparent jacket TM2
- High stress resistance
- Spark Test 6, 4 & 2 AWG: 5000V
- Spark Test 1 & 2/0 AWG: 6000V
- Spark Test 3/0 - 500 MCM: 8000V

Technical Characteristics

- Working voltage: N/A - earthing only
- Test voltage: 2000 volts
- Minimal bending radius: 12.0 x Ø
- Temperature range: -5º C to +70º C
- Flame retardant: IEC 60332.1
- Insulation resistance: 20 MΩ x km



H00V-D

German Standard (VDE)

Cable Parameter

H00V-D (ESEU type)

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
6(4200/41)	1 x 16	9.1	194	230
4(3192/38)	1 x 25	10.5	280	335
2(4480/38)	1 x 35	12.5	415	475
1(6383/38)	1 x 50	14.2	585	670
2/0(8918/38)	1 x 70	16.8	820	905
3/0(12100/38)	1 x 95	19.8	1090	1220
4/0(15300/38)	1 x 120	21.5	1360	1505
300MCM(19152/38)	1 x 150	24	1650	1940
350MCM(23580/38)	1 x 185	27.6	2150	2390
500MCM(30600/38)	1 x 240	31	2750	3090

H00V-D (ESY type)

AWG	No. of Cores x Nominal Cross Sectional Area *# x mm²*	Nominal Overall Diameter *mm*	Nominal Copper Weight *kg/km*	Nominal Weight *kg/km*
6(525/32)	1 x 16	8.5	155	185
4(798/32)	1 x 25	10.0	240	270
2(1120/32)	1 x 35	12.5	336	390
1(1617/32)	1 x 50	14.0	480	575
2/0(2254/32)	1 x 70	17.2	672	810
3/0(3087/32)	1 x 95	19.5	912	1080
4/0(3822/32)	1 x 120	22.8	1152	1320
300MCM(4802/32)	1 x 150	25.4	1440	1680

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

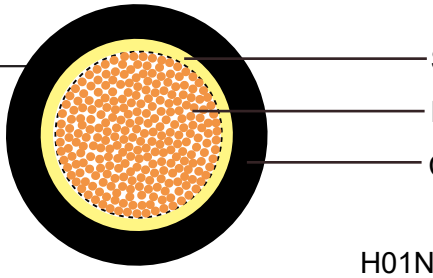
HD22.6 S2, VDE-0282 Part-6, IEC 60332.3, IEC 60754.1

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: IEC 60332.1



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

YY Control Flexible Cable

Application and Description

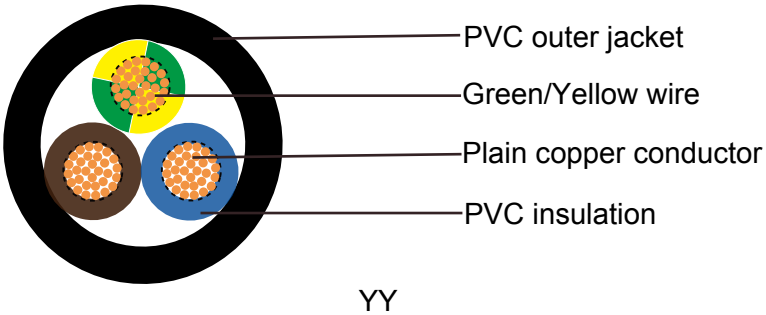
YY Control Flexible Cable is used as connecting cable, as measuring, checking and control cable in machine tool manufacturing, plant engineering and on assembly lines and production lines to meet stringent safety requirements. Suitable for fixed installation or flexible applications with unrestricted mobility without forced movement control and without exposure to tensile load installation in dry and moist rooms; outdoor installation not permitted.

Standard and Approval

Generally to BS6500, VDE0250

Cable Construction

- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5
- PVC core insulation type Y12
- Color coded to VDE-0293-308
- Green-yellow grounding (3 conductors and above)
- PVC outer jacket type YM2



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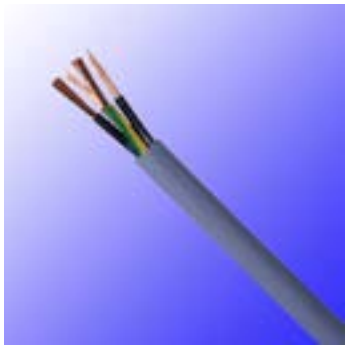


German Standard (VDE)

Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 3000 volts
- Minimum bending radius: 10 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -35º C to +70º C
- Flame retardant: IEC 60332.1
- Insulation resistance: 20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Cable Weight kg/km
20(16/32)	2 x 0.50	4.7	32
18(24/32)	2 x 0.75	5.1	39
17(32/32)	2 x 1.00	5.3	49
16(30/30)	2 x 1.50	6.2	61
14(30/50)	2 x 2.50	7.3	92
20(16/32)	3 x 0.50	5.1	39
18(24/32)	3 x 0.75	5.4	50
17(32/32)	3 x 1.00	5.6	60
16(30/30)	3 x 1.50	6.5	79
14(30/50)	3 x 2.50	7.7	119
12(56/28)	3 x 4.00	9.3	176
10(84/28)	3 x 6.00	11.0	255
8(80/26)	3 x 10.00	14.0	411
6(128/26)	3 x 16.00	18.2	653
20(16/32)	4 x 0.50	5.4	46
18(24/32)	4 x 0.75	5.9	59
17(32/32)	4 x 1.00	6.5	69
16(30/30)	4 x 1.50	7.4	92
14(30/50)	4 x 2.50	8.5	148
12(56/28)	4 x 4.00	10.2	219
10(84/28)	4 x 6.00	12.3	323
8(80/26)	4 x 10.00	15.0	513
6(128/26)	4 x 16.00	19.2	844
4(200/26)	4 x 25.00	23.0	1252
20(16/32)	5 x 0.50	6.2	57

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Cable Weight kg/km
18(24/32)	5 x 0.75	6.7	68
17(32/32)	5 x 1.00	6.9	83
16(30/30)	5 x 1.50	7.9	109
14(30/50)	5 x 2.50	9.7	180
12(56/28)	5 x 4.00	11.6	269
10(84/28)	5 x 6.00	13.5	391
8(80/26)	5 x 10.00	17.1	650
6(128/26)	5 x 16.00	21.3	1012
4(200/26)	5 x 25.00	25.8	1548
2(280/26)	5 x 35.00	29.5	2029
18(24/32)	6 x 0.75	6.9	81
17(32/32)	6 x 1.00	7.0	101
20(16/32)	7 x 0.50	6.6	70
18(24/32)	7 x 0.75	7.1	90
17(32/32)	7 x 1.00	7.5	104
16(30/30)	7 x 1.50	9.0	147
14(30/50)	7 x 2.50	10.1	232
18(24/32)	8 x 0.75	7.4	100
17(32/32)	8 x 1.00	8.0	120
16(30/30)	8 x 1.50	9.5	169
20(16/32)	12 x 0.50	8.6	110
18(24/32)	12 x 0.75	9.4	146
17(32/32)	12 x 1.00	9.9	174
16(30/30)	12 x 1.50	11.6	237
14(30/50)	12 x 2.50	13.9	377
18(24/32)	18 x 0.75	11.1	211
17(32/32)	18 x 1.00	11.7	252
16(30/30)	18 x 1.50	13.7	347
14(30/50)	18 x 2.50	17.1	575
18(24/32)	25 x 0.75	13.4	289
16(30/30)	25 x 1.50	16.9	490
17(32/32)	34 x 1.00	16.3	477
17(32/32)	41 x 1.00	17.7	566
18(24/32)	42 x 0.75	16.0	461
17(32/32)	50 x 1.00	19.1	682
18(24/32)	61 x 0.75	19.8	673
18(24/32)	65 x 0.75	20.7	774

YY LSZH Control Flexible Cable

Application and Description

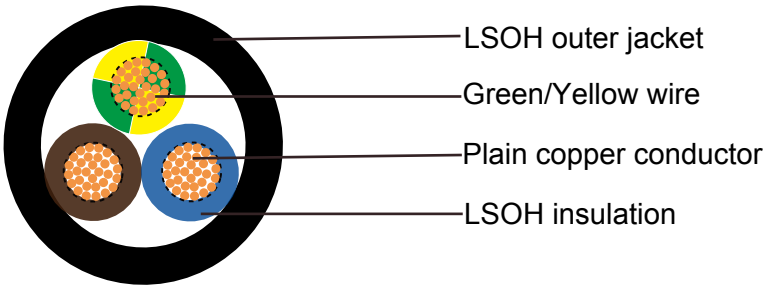
YY LSZH Control Flexible Cable is suitable for electrical installations in dry and damp interiors and outdoors if UV protection and temperature ranges are observed. It is suitable as a measurement, sensing and control cable in the machine tool manufacturing, engineering, power stations, heating and air conditioning installations, refrigeration and date processing installations. Can be used outdoors when protected, and in dry or moist conditions indoors.

Standard and Approval

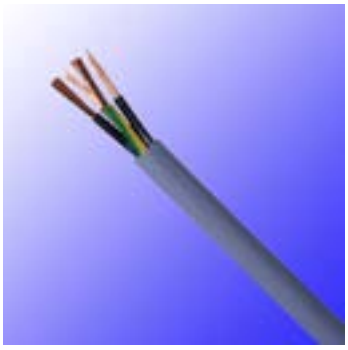
BS6500, VDE0250, IEC 60332-3, IEC 60754-1

Cable Construction

- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5
- LSOH core insulation
- Color coded to VDE-0293-308
- Green-yellow grounding (3 conductors and above)
- LSOH outer jacket



YY LSOH



Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 3000 volts
- Minimum bending radius: 10 x Ø
- Flexing temperature: -5º C to +85º C
- Static temperature: -35º C to +85º C
- Short circuit temperature: +160º C
- Flame retardant: IEC 60332.3
- Insulation resistance: 20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
20(16/32)	2 x 0.5	4.8	9.6	40
20(16/32)	3 x 0.5	5.1	14.4	47
20(16/32)	4 x 0.5	5.7	19.2	57
20(16/32)	5 G 0.5	6.2	24.0	66
20(16/32)	7 G 0.5	7.1	33.6	85
20(16/32)	12 G 0.5	8.9	58.0	133
18(24/32)	2 x 0.75	5.4	14.4	50
18(24/32)	3 x 0.75	5.7	21.6	60
18(24/32)	4 x 0.75	6.2	28.8	73
18(24/32)	5 x 0.75	6.7	36.0	88
18(24/32)	7 x 0.75	7.7	50.0	109
18(24/32)	9 G 0.75	9.4	65.0	162
18(24/32)	12 G 0.75	9.9	86.0	190
18(24/32)	18 G 0.75	11.7	130.0	268
18(24/32)	25 G 0.75	13.8	180.0	374
17(32/32)	2 x 1.0	5.7	19.2	57
17(32/32)	3 x 1.0	6.0	28.8	73
17(32/32)	4 x 1.0	6.5	38.4	85
17(32/32)	5 G 1.0	7.1	48.0	105
17(32/32)	7 G 1.0	8.3	67.0	131
17(32/32)	8 G 1.0	9.5	77.0	146
17(32/32)	12 G 1.0	10.5	115.0	220
17(32/32)	14 G 1.0	11.2	134.0	249

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
17(32/32)	18 G 1.0	12.7	173.0	315
17(32/32)	25 G 1.0	14.7	240.0	449
17(32/32)	41 G 1.0	18.8	394.0	698
16(30/30)	2 x 1.5	6.3	29.0	77
16(30/30)	3 x 1.5	6.7	43.0	95
16(30/30)	4 G 1.5	7.2	58.0	117
16(30/30)	5 G 1.5	8.1	72.0	144
16(30/30)	7 G 1.5	9.9	101.0	183
16(30/30)	8 G 1.5	10.6	115.0	205
16(30/30)	9 G 1.5	11.4	130.0	220
16(30/30)	12 G 1.5	12.0	173.0	307
16(30/30)	14 G 1.5	12.6	202.0	349
16(30/30)	18 G 1.5	14.4	259.0	465
16(30/30)	25 G 1.5	16.9	360.0	655
16(30/30)	34 G 1.5	22.0	490.0	945
14(30/50)	2 x 2.5	7.5	48.0	123
14(30/50)	3 G 2.5	8.1	72.0	152
14(30/50)	4 G 2.5	8.9	96.0	192
14(30/50)	5 G 2.5	10.0	120.0	243
14(30/50)	7 G 2.5	12.3	168.0	310
14(30/50)	12 G 2.5	14.8	288.0	524
12(56/28)	4 G 4	10.8	154.0	299
12(56/28)	5 G 4	12.1	192.0	363
12(56/28)	7 G 4	14.9	269.0	488
10(84/28)	4 G 6	13.0	230.0	480
10(84/28)	5 G 6	14.1	288.0	583
10(84/28)	7 G 6	17.5	404.0	782

CY Screened cable

Application and Description

CY Screened cable can be used as connecting cable, as measuring, signalling and control cable in machine tool manufacturing, plant engineering and in assembly and production lines to meet stringent safety requirements. Suitable for fixed installations or flexible applications with unrestricted mobility without forced movement control and without exposure to tensile load. Installation in dry and moist rooms; outdoor installation not permitted. These cables with copper screening are ideally suitable for interference-free data and signal transmission in measuring and control technology.

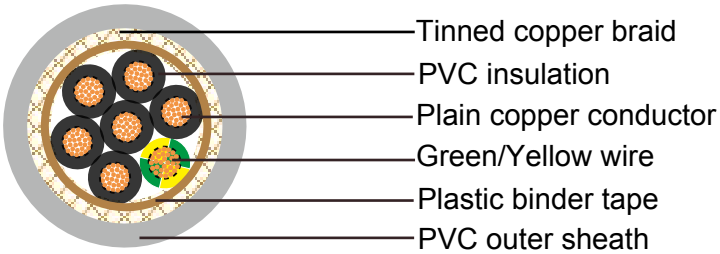
Standard and Approval

BS6500, VDE0250

Cable Construction

- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 IEC 60228 cl.5
- PVC core insulation type Y12
- Color coded to VDE-0293-308
- Green-yellow grounding (3 conductors and above)
- Plastic binder tape
- Tinned Copper Wire Braid Screen
- PVC outer jacket type Y12

CY



CY

German Standard (VDE)

Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 2000 volts
- Minimum bending radius: 10 x Ø
- Flexing temperature: -15º C to +70º C
- Static temperature: -35º C to +70º C
- Short circuit temperature: +160º C
- Flame retardant: IEC 60332.3
- Insulation resistance: 20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Cable Weight kg/km
20(16/32)	2 x 0.50	5.4	45.0
18(24/32)	2 x 0.75	6.0	54.0
17(32/32)	2 x 1.00	6.2	60.0
16(30/30)	2 x 1.50	6.8	70.0
14(30/50)	2 x 2.50	8.0	104.0
20(16/32)	3 x 0.50	5.8	53.0
18(24/32)	3 x 0.75	6.3	65.0
17(32/32)	3 x 1.00	6.5	73.0
16(30/30)	3 x 1.50	7.5	100.1
14(30/50)	3 x 2.50	8.6	140.0
20(16/32)	4 x 0.50	6.3	63.0
18(24/32)	4 x 0.75	6.8	77.0
17(32/32)	4 x 1.00	7.0	89.0
16(30/30)	4 x 1.50	8.2	123.3
14(30/50)	4 x 2.50	9.4	173.0
12(56/28)	4 x 4.00	11.1	236.0
10(84/28)	4 x 6.00	12.8	339.0
8(80/26)	4 x 10.00	16.1	502.0
6(128/26)	4 x 16.00	19.2	771.0
4(200/26)	4 x 25.00	20.2	1420.0
20(16/32)	5 x 0.50	6.7	76.0
18(24/32)	5 x 0.75	7.3	91.0
17(32/32)	5 x 1.00	7.6	105.0
16(30/30)	5 x 1.50	8.4	125.0

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Cable Weight kg/km
14(30/50)	5 x 2.50	10.0	206.0
12(56/28)	5 x 4.00	12.1	288.0
10(84/28)	5 x 6.00	14.2	416.0
20(16/32)	6 x 0.50	7.2	87.0
18(24/32)	6 x 0.75	7.8	102.0
17(32/32)	6 x 1.00	8.2	110.0
20(16/32)	7 x 0.50	7.3	107.0
18(24/32)	7 x 0.75	7.8	115.0
17(32/32)	7 x 1.00	8.4	139.0
16(30/30)	7 x 1.50	9.3	160.0
14(30/50)	7 x 2.50	10.8	267.0
20(16/32)	8 x 0.50	7.7	109.0
18(24/32)	8 x 0.75	8.3	137.0
17(32/32)	8 x 1.00	9.0	157.0
20(16/32)	12 x 0.50	9.2	140.0
18(24/32)	12 x 0.75	10.1	177.0
17(32/32)	12 x 1.00	10.4	207.0
16(30/30)	12 x 1.50	11.8	279.0
14(30/50)	12 x 2.50	14.6	432.0
20(16/32)	18 x 0.50	10.2	179.0
18(24/32)	18 x 0.75	11.6	250.0
17(32/32)	18 x 1.00	12.4	295.0
16(30/30)	18 x 1.50	14.0	350.0
20(16/32)	25 x 0.50	13.3	256.0
18(24/32)	25 x 0.75	13.9	326.0
17(32/32)	25 x 1.00	14.9	384.0
16(30/30)	25 x 1.50	16.9	530.0
18(24/32)	34 x 0.75	15.6	406.0
17(32/32)	34 x 1.00	16.6	530.0
16(30/30)	34 x 1.50	18.9	720.0
16(30/30)	42 x 1.50	20.1	820.0
18(24/32)	50 x 0.75	19.0	576.0
17(32/32)	50 x 1.00	19.6	1020.0

CY LSZH Screened Cable

Application and Description

CY LSZH Screened Cable is used as interconnecting cable for measuring, controlling or regulation in control equipment for assembly and production lines, conveyors and for computer units. Suitable for fixed installations or for flexible use when temporarily moved, and in conditions of medium mechanical stress. For installation where fire, smoke emission and toxic fumes create a potential threat to life and equipment. . Can be used outdoors when protected, and in dry or moist conditions indoors.

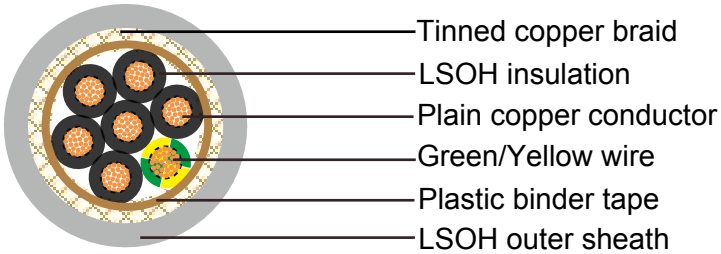
Standard and Approval

BS6500, VDE0250, IEC 60332-3, IEC 60754-1

Cable Construction

- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 IEC 60228 cl.5
- LSOH core insulation H12- DIN VDE 027 PT23
- Color coded to VDE-0293-308
- Green-yellow grounding (3 conductors and above)
- Plastic binder tape
- Tinned Copper Wire Braid Screen
- LSOH outer jacket

CY LSOH



CY LSOH

Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 2000 volts
- Minimum bending radius: 10 x Ø
- Flexing temperature: -15º C to +70º C
- Static temperature: -35º C to +70º C
- Short circuit temperature: +160º C
- Flame retardant: IEC 60332.3
- Insulation resistance: 20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
20(16/32)	2 x 0.5	7.0	35.0	80
20(16/32)	3 x 0.5	7.3	45.5	106
20(16/32)	4 x 0.5	7.9	55.0	123
20(16/32)	5 G 0.5	8.4	66.0	134
20(16/32)	7 G 0.5	9.9	80.5	160
20(16/32)	12 G 0.5	11.3	138.5	237
18(24/32)	2 x 0.75	7.4	45.0	115
18(24/32)	3 x 0.75	7.9	57.9	125
18(24/32)	4 x 0.75	8.4	64.0	141
18(24/32)	5 x 0.75	8.9	77.4	162
18(24/32)	7 X 0.75	10.6	102.0	187
18(24/32)	12 G 0.75	12.3	177.0	313
18(24/32)	18 G 0.75	14.5	243.0	456
18(24/32)	25 G 0.75	16.6	307.3	575
17(32/32)	2 x 1.0	7.9	50.0	127
17(32/32)	3 x 1.0	8.2	65.3	140
17(32/32)	4 x 1.0	8.7	78.1	160
17(32/32)	5 G 1.0	9.5	89.4	182
17(32/32)	7 G 1.0	10.8	113.6	215
17(32/32)	12 G 1.0	13.3	188.1	352
17(32/32)	18 G 1.0	15.5	286.0	514
17(32/32)	25 G 1.0	17.5	388.5	677
17(32/32)	41 G 1.0	22.0	578	1010

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
16(30/30)	2 x 1.5	8.5	77.0	172
16(30/30)	3 x 1.5	8.9	83.0	187
16(30/30)	4 G 1.5	9.6	100.0	201
16(30/30)	5 G 1.5	10.3	125.0	231
16(30/30)	7 G 1.5	13.1	196.0	310
16(30/30)	12 G 1.5	14.8	280.0	505
16(30/30)	18 G 1.5	17.2	389.0	671
16(30/30)	25 G 1.5	20.1	535.0	955
14(30/50)	3 G 2.5	10.3	146.0	211
14(30/50)	4 G 2.5	11.3	167.0	356
14(30/50)	5 G 2.5	12.6	200.2	386
14(30/50)	7 G 2.5	13.9	288.0	498
14(30/50)	12 G 2.5	17.6	477.3	911
12(56/28)	4 G 4	13.4	237.0	458
12(56/28)	5 G 4	14.7	280.0	532
12(56/28)	7 G 4	18.2	388.0	766
10(84/28)	4 G 6	15.8	318.0	611
10(84/28)	5 G 6	17.3	453.0	770
10(84/28)	7 G 6	24.8	524.7	1035
8(80/26)	4 G 10	24.4	558.0	986
6(128/26)	4 G 16	28.1	804.0	1338
4(200/26)	4 G 25	32.9	1289.0	2028
2(280/26)	4 G 35	36.8	1693.0	2649
1(400/26)	4 G 50	42.4	2342.0	3741
2/0(356/24)	4 G 70	49.4	3035.0	5054
3/0(485/24)	4 G 95	54.5	4055.0	6427

SY Steel Wire Braid Cable

Application and Description

SY Steel Wire Braid Cable is supplied to a wide number of industries including building and construction (often in airports), rail and transport infrastructure, transmission, distribution and power networks as well as automation and process control. SY Cable is used as interconnecting cable for measuring, controlling or regulation in signal and control equipment. This braided control cable is found frequently on assembly and production lines, conveyors, in computer units and machine tool manufacture. The SY Cable's flexible and versatile design makes it a great choice for linking fixed and mobile equipment – as well as projects where fixed installations are required. With the right protection (such as keeping it out of direct sunlight), SY Control Cable is useful for outdoor installations. The SY Flex is most suitable, however, for work in dry or moist indoor environments.

Standard and Approval

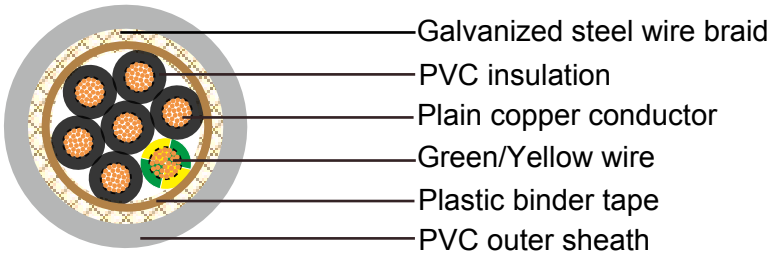
BS6500, VDE0250

Cable Construction

- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 IEC 60228 cl.5
- PVC core insulation type Y12
- Black with White numbers
- Green-yellow grounding (3 conductors and above)
- PVC bedding type YM2
- Galvanized Steel Wire Braid
- Transparent PVC outer jacket type YM2

Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 3000 volts
- Minimum bending radius: 10 x Ø
- Flexing temperature: -15º C to +70º C
- Static temperature: -35º C to +70º C
- Short circuit temperature: +160º C
- Flame retardant: IEC 60332.3
- Insulation resistance: 20 MΩ x km



SY

SY

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Diameter over Bedding mm	Diameter over Braid mm	Nominal Overall Diameter mm	Cable Weight kg / km
20(16/32)	2 x 0.5	5.5	6.5	8.3	91
20(16/32)	3 x 0.5	5.7	6.7	8.6	99
20(16/32)	4 x 0.5	6.2	7.2	9.1	113
20(16/32)	5 x 0.5	6.7	7.7	9.7	129
20(16/32)	7 x 0.5	7.3	8.3	10.3	150
20(16/32)	12 x 0.5	9.7	10.7	12.4	214
20(16/32)	18 x 0.5	11.2	12.4	14.3	298
20(16/32)	25 x 0.5	13.7	14.9	16.8	400
20(16/32)	30 x 0.5	14.2	15.4	17.7	454
20(16/32)	35 x 0.5	15.9	17.1	19.9	585
20(16/32)	41 x 0.5	17.5	18.7	21.5	671

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Diameter over Bedding mm	Diameter over Braid mm	Nominal Overall Diameter mm	Cable Weight kg / km
20(16/32)	50 x 0.5	18.4	19.6	21.9	694
20(16/32)	60 x 0.5	20.0	21.2	24.2	895
18(24/32)	2 x 0.75	6.1	7.1	9.0	85
18(24/32)	3 x 0.75	6.4	7.4	9.3	116
18(24/32)	4 x 0.75	6.9	7.9	9.8	133
18(24/32)	5 x 0.75	7.6	8.6	10.5	155
18(24/32)	7 x 0.75	8.3	9.3	11.2	182
18(24/32)	12 x 0.75	10.8	11.8	13.7	266
18(24/32)	18 x 0.75	13.1	14.3	16.2	388
18(24/32)	25 x 0.75	15.6	16.8	19.1	521
18(24/32)	30 x 0.75	16.1	17.3	19.6	572
18(24/32)	35 x 0.75	17.9	19.1	21.4	684
18(24/32)	50 x 0.75	20.9	22.1	24.8	909
18(24/32)	60 x 0.75	22.3	23.8	26.4	1050
17(32/32)	2 x 1.0	6.3	7.3	9.3	101
17(32/32)	3 x 1.0	6.6	7.6	9.5	126
17(32/32)	4 x 1.0	7.2	8.2	10.1	146
17(32/32)	5 x 1.0	7.9	8.9	10.8	171
17(32/32)	7 x 1.0	8.6	9.6	11.5	203
17(32/32)	12 x 1.0	11.2	12.4	14.3	314
17(32/32)	18 x 1.0	13.6	14.8	16.7	441
17(32/32)	25 x 1.0	16.2	17.4	19.7	594
17(32/32)	30 x 1.0	16.8	18.0	20.3	658
17(32/32)	35 x 1.0	18.6	19.8	22.1	786
17(32/32)	50 x 1.0	21.8	23.3	25.9	1070
17(32/32)	60 x 1.0	23.6	25.1	27.7	1240
16(30/30)	2 x 1.5	6.8	7.8	9.8	114
16(30/30)	3 x 1.5	7.2	8.2	10.1	145
16(30/30)	4 x 1.5	7.9	8.9	10.8	171
16(30/30)	5 x 1.5	8.7	9.7	11.6	202
16(30/30)	7 x 1.5	9.5	10.5	12.4	242
16(30/30)	12 x 1.5	12.8	14.0	15.9	394
16(30/30)	18 x 1.5	15.1	16.3	18.6	553
16(30/30)	25 x 1.5	18.4	19.6	21.9	746
16(30/30)	30 x 1.5	19.1	20.3	23.0	850
16(30/30)	35 x 1.5	20.7	21.9	24.6	990
16(30/30)	50 x 1.5	24.7	26.2	29.2	1380
16(30/30)	60 x 1.5	26.3	27.8	30.8	1570
14(30/50)	2 x 2.5	8.0	9.0	11.0	143
14(30/50)	3 x 2.5	8.5	9.5	11.4	193
14(30/50)	4 x 2.5	9.4	10.4	12.3	232
14(30/50)	5 x 2.5	10.3	11.3	13.2	277

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Diameter over Bedding mm	Diameter over Braid mm	Nominal Overall Diameter mm	Cable Weight kg / km
14(30/50)	7 x 2.5	11.3	12.5	14.4	353
14(30/50)	12 x 2.5	15.3	16.5	18.8	575
14(30/50)	18 x 2.5	18.5	19.7	22.0	818
14(30/50)	25 x 2.5	22.1	23.6	26.2	1130
14(30/50)	30 x 2.5	23.4	24.9	27.5	1290
14(30/50)	35 x 2.5	25.3	26.8	29.8	1540
14(30/50)	50 x 2.5	29.8	31.3	34.7	2060
14(30/50)	60 x 2.5	31.7	33.2	36.6	2350
12(56/28)	2 x 4.0	10.8	11.8	13.8	240
12(56/28)	3 x 4.0	11.5	12.8	14.8	312
12(56/28)	4 x 4.0	12.7	13.9	15.8	384
12(56/28)	5 x 4.0	14.0	15.2	17.5	478
12(56/28)	7 x 4.0	15.3	16.5	18.8	587
10(84/28)	2 x 6.0	12.2	13.4	15.4	316
10(84/28)	3 x 6.0	13.0	14.2	16.2	407
10(84/28)	4 x 6.0	14.4	15.6	17.9	508
10(84/28)	5 x 6.0	15.9	17.1	19.4	617
10(84/28)	7 x 6.0	17.9	19.1	21.4	789
8(80/26)	2 x 10.0	15.3	16.5	18.9	467
8(80/26)	3 x 10.0	16.5	17.7	20.1	621
8(80/26)	4 x 10.0	18.4	19.6	21.9	779
8(80/26)	5 x 10.0	20.4	21.6	24.3	978
8(80/26)	7 x 10.0	22.4	23.9	26.5	1250
6(128/26)	3 x 16.0	19.7	20.8	23.8	857
6(128/26)	4 x 16.0	21.4	22.7	25.5	1040
6(128/26)	5 x 16.0	24.1	25.4	28.6	1300
4(200/26)	3 x 25.0	21.4	22.7	25.5	1110
4(200/26)	4 x 25.0	23.8	25.1	27.2	1350
4(200/26)	5 x 25.0	26.4	27.7	31.3	1740
4(200/26)	5 x 35.0	-	-	36	3185

LiYY PVC Data Cable

Application and Description

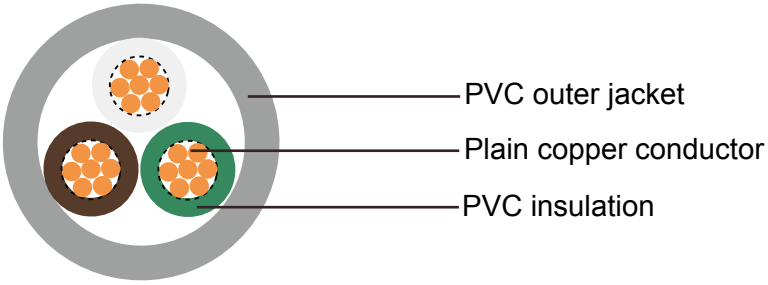
LiYY cables are data transmission cables which have been developed from well proven types based on the specification VDE 0812. For use in flexible or stationary applications under low mechanical stress with free movement without any tensile stress, loads or forced movements in dry, moist and wet conditions. Commonly used as control and signal cables in the electronics of computers systems, electronic control equipment, office machines and measurement devices in the tool making and machine industries. LiYY is recommended when a small outer diameter is required. Not permitted for outdoor use.

Standard and Approval

VDE 0245, VDE 0812

Cable Construction

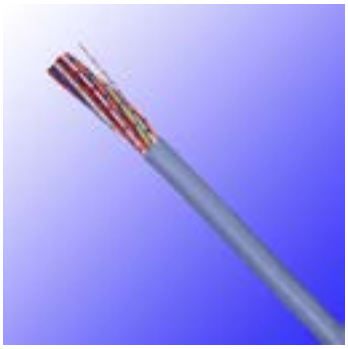
- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 IEC 60228 cl.5
- PVC core insulation type T12 to DIN VDE 0281 part 1
- Color coded to DIN 47100, but without color repetition
- PVC outer jacket type TM2 to DIN VDE 0281 part 1



LiYY

Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 1200/2000 volts
- Minimum bending radius: 4 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -30º C to +80º C
- Short circuit temperature: +160º C
- Flame retardant: IEC 60332.1
- Insulation resistance: 20 MΩ x km



LiYY

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
26(18/38)	2X0.14	3.2	2.7	13.0
26(18/38)	3X0.14	3.2	4.0	16.0
26(18/38)	4X0.14	3.5	5.4	19.0
26(18/38)	5X0.14	4.0	6.7	22.0
26(18/38)	6X0.14	4.3	8.1	25.0
26(18/38)	7X0.14	4.3	9.4	28.0
26(18/38)	8X0.14	4.6	10.7	35.0
26(18/38)	10X0.14	5.3	13.4	41.0
26(18/38)	12X0.14	5.6	16.1	48.0
26(18/38)	14X0.14	5.9	18.8	53.0
26(18/38)	16X0.14	6.2	21.5	59.0
26(18/38)	18X0.14	6.5	24.2	65.0
26(18/38)	20X0.14	6.5	26.9	70.0
26(18/38)	21X0.14	6.8	28.2	77.0
26(18/38)	24X0.14	7.6	32.3	87.0
26(18/38)	25X0,14	7.6	33.6	91.0
26(18/38)	27X0.14	7.7	36.3	97.0
26(18/38)	30X0.14	8.0	40.3	108.0
26(18/38)	32X0.14	8.2	43.0	114.0
26(18/38)	36X0.14	8.7	48.4	126.0
26(18/38)	40X0.14	9.5	54.0	139.0
26(18/38)	42X0.14	9.8	56.0	146.0
26(18/38)	44X0.14	10.3	59.0	153.0
26(18/38)	48X0.14	10.4	65.0	164.0
26(18/38)	52X0.14	10.7	70.0	173.0
26(18/38)	56X0.14	11.0	75.0	187.0

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
26(18/38)	61X0.14	11.3	82.0	204.0
26(18/38)	80X0.14	15.5	108.0	280.0
26(18/38)	100X0.14	18.1	135.0	370.0
24(14/34)	2X0.25	3.8	4.8	18.0
24(14/34)	3X0.25	3.9	7.2	22.0
24(14/34)	4X0.25	4.3	9.6	26.0
24(14/34)	5X0.25	4.8	12.0	30.0
24(14/34)	6X0.25	5.2	14.4	36.0
24(14/34)	7X0.25	5.2	16.8	42.0
24(14/34)	8X0.25	5.7	19.2	49.0
24(14/34)	10X0.25	6.4	24.0	57.0
24(14/34)	12X0.25	6.7	28.8	66.0
24(14/34)	14X0.25	7.1	33.6	75.0
24(14/34)	16X0.25	7.5	38.4	84.0
24(14/34)	18X0.25	7.9	43.2	72.0
24(14/34)	19X0.25	8.4	46.0	84.0
24(14/34)	20X0.25	9.1	48.0	101.0
24(14/34)	21X0.25	9.3	50.0	107.0
24(14/34)	24X0.25	9.8	60.0	120.0
24(14/34)	25X0.25	9.9	61.0	132.0
24(14/34)	27X0.25	10.1	65.0	140.0
24(14/34)	30X0.25	10.3	72.0	156.0
24(14/34)	32X0.25	10.5	77.0	164.0
24(14/34)	36X0.25	11.1	86.0	182.0
24(14/34)	37X0.25	11.3	89.0	190.0
24(14/34)	40X0.25	11.5	96.0	200.0
24(14/34)	42X0.25	11.8	101.0	211.0
24(14/34)	44X0.25	12.6	106.0	225.0
24(14/34)	48X0.25	12.7	115.0	245.0
24(14/34)	52X0.25	13.6	125.0	263.0
24(14/34)	56X0.25	14.0	134.0	280.0
24(14/34)	61X0.25	14.4	146.0	305.0
24(14/34)	80X0.25	19.6	192.0	450.0
24(14/34)	100X0.25	23.1	240.0	590.0
22(7/30)	2X0.34	4.2	6.5	22.0
22(7/30)	3X0.34	4.4	9.8	30.0
22(7/30)	4X0.34	4.9	13.1	43.0
22(7/30)	5X0.34	5.3	16.3	54.0
22(7/30)	6X0.34	5.8	19.6	58.0
22(7/30)	7X0.34	5.9	22.8	61.0
22(7/30)	8X0.34	6.3	26.1	73.0
22(7/30)	10X0.34	7.2	32.6	82.0
22(7/30)	12X0.34	7.6	39.2	102.0
22(7/30)	14XO.34	8.0	45.7	108.0
22(7/30)	16X0.34	8.4	52.0	126.0
22(7/30)	18X0.34	8.9	59.0	143.0
22(7/30)	20X0.34	9.8	65.0	160.0

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
22(7/30)	21X0.34	9.8	69.0	166.0
22(7/30)	24X0.34	11.0	78.0	186.0
22(7/30)	25X0.34	11.2	82.0	192.0
22(7/30)	27X0.34	11.2	88.0	206.0
22(7/30)	30X0.34	11.6	98.0	226.0
22(7/30)	32X0.34	11.9	104.0	245.0
22(7/30)	36X0.34	12.6	118.0	285.0
22(7/30)	37X0.34	12.9	121.0	292.0
22(7/30)	40X0.34	13.5	131.0	318.0
22(7/30)	42X0.34	14.0	137.0	330.0
22(7/30)	44X0.34	14.7	144.0	370.0
22(7/30)	48X0.34	14.9	157.0	405.0
22(7/30)	52X0.34	15.3	170.0	430.0
22(7/30)	53X0.34	15.5	183.0	440.0
22(7/30)	61X0.34	16.2	199.0	610.0
22(7/30)	80X0.34	22.0	264.0	880.0
22(7/30)	100X0.34	25.4	327.0	1050.0
20(16/32)	2X0.5	4.8	9.6	40.0
20(16/32)	3X0.5	5.1	14.4	46.0
20(16/32)	4X0.5	5.7	19.2	55.0
20(16/32)	5X0.5	6.2	24.0	64.0
20(16/32)	6X0.5	6.7	28.8	73.0
20(16/32)	7X0.5	7.4	33.6	81.0
20(16/32)	8X0.5	8.0	38.4	97.0
20(16/32)	10X0.5	8.8	48.0	116.0
20(16/32)	12X0.5	9.1	58.0	135.0
20(16/32)	16X0.5	10.0	77.0	168.0
20(16/32)	20X0.5	11.2	96.0	213.0
20(16/32)	24X0.5	12.3	116.0	241.0
20(16/32)	30X0.5	13.5	144.0	303.0
20(16/32)	40X0.5	15.8	192.0	391.0
18(24/32)	2X0.75	5.2	14.4	47.0
18(24/32)	3X0.75	5.5	21.6	54.0
18(24/32)	4X0.75	6.2	29.0	66.0
18(24/32)	5X0.75	6.8	36.0	80.0
18(24/32)	7X0.75	8.1	50.0	110.0
18(24/32)	8X0.75	8.9	58.0	125.0
18(24/32)	10X0.75	9.6	72.0	148.0
18(24/32)	12X0.75	9.9	86.0	176.0
18(24/32)	16X0.75	11.6	115.0	220.0
18(24/32)	20X0.75	12.6	144.0	276.0
17(32/32)	2X1.0	5.5	19.2	56.0
17(32/32)	3X1.0	6.0	29.0	71.0
16(30/30)	2X1.5	6.5	29.0	75.0
16(30/30)	3X1.5	6.9	43.0	90.0

LiYY TP

Application and Description

LiYY TP is for use in flexible or stationary applications under low mechanical stress with free movement without any tensile stress, loads or forced movements in dry, moist and wet conditions. Commonly used as control and signal cables in the electronics of computers systems, electronic control equipment, office machines and measurement devices in the tool making and machine industries. LiYY TP is recommended in areas where there are short runs in tight spaces and require a small outer diameter and bending radius. The twisted pair construction reduces interference within the cable. In many applications, no additional shield is necessary. Not permitted for outdoor use.

Standard and Approval

VDE 0812, VDE 0814

Cable Construction

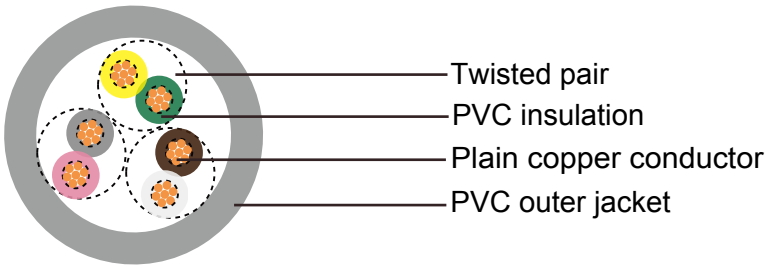
- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 IEC 60228 cl.5
- PVC core insulation type T12 to DIN VDE 0281 part 1
- Color coded to DIN 47100, but without color repetition
- Cores twisted into pairs, pairs twisted into layers
- PVC outer jacket type TM2 to DIN VDE 0281 part 1

Technical Characteristics

- Working voltage: 250 volts
- Test voltage: 1200 volts

German Standard (VDE)

- Minimum bending radius: 4 x Ø
- Flexing temperature: -5º C to +80º C
- Static temperature: -30º C to +80º C
- Short circuit temperature: +160º C
- Flame retardant: IEC 60332.1
- Insulation resistance: 20 MΩ x km



LiYY TP

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
26(18/38)	2 x 2 x 0,14	4.9	5.4	25.5
26(18/38)	3 x 2 x 0.14	5	8	32
26(18/38)	4 x 2 x 0.14	5.4	10.7	38.5
26(18/38)	5 x 2 x 0.14	5.9	13.4	45.5
26(18/38)	6 x 2 x 0.14	6.3	16.1	51
26(18/38)	10 x 2 x 0.14	8.1	26.9	77.5
26(18/38)	12 x 2 x 0.14	8.4	32.3	94.5
26(18/38)	14 x 2 x 0.14	8.8	37.6	105.5
26(18/38)	16 x 2 x 0.14	9.3	43	110.5
26(18/38)	18 x 2 x 0.14	10.2	48.4	119.5
26(18/38)	25 x 2 x 0.14	11.7	67	180.5
26(18/38)	30 x 2 x 0.14	12.4	81	199.5
26(18/38)	50 x 2 x 0.14	16	134	387
24(14/34)	2 x 2 x 0.25	6.1	9.6	38
24(14/34)	3 x 2 x 0.25	6.3	14.4	48
24(14/34)	4 x 2 x 0.25	6.8	19.2	59
24(14/34)	6 x 2 x 0.25	8	28.8	80
24(14/34)	8 x 2 x 0.25	9.4	38.4	98
24(14/34)	10 x 2 x 0.25	10.5	48	115
22(7/30)	2 x 2 x 0.34	5.5	13	42
22(7/30)	3 x 2 x 0.34	6.7	19	51
22(7/30)	4 x 2 x 0.34	7.4	25	61
22(7/30)	8 x 2 x 0.34	8.1	37	119
22(7/30)	10 x 2 x 0.34	9.2	48	152
20(16/32)	2 x 2 x 0.50	8.1	19.2	72
20(16/32)	3 x 2 x 0.50	8.4	28.8	83
20(16/32)	4 x 2 x 0.50	8.7	38.4	115
20(16/32)	8 x 2 x 0.50	12.7	76.8	206
20(16/32)	10 x 2 x 0.50	13.7	96	247
18(24/32)	2 x 2 x 0.75	7.5	28	60
18(24/32)	3 x 2 x 0.75	8.4	43	74
18(24/32)	4 x 2 x 0.75	8.7	58	92

LiYCY

Application and Description

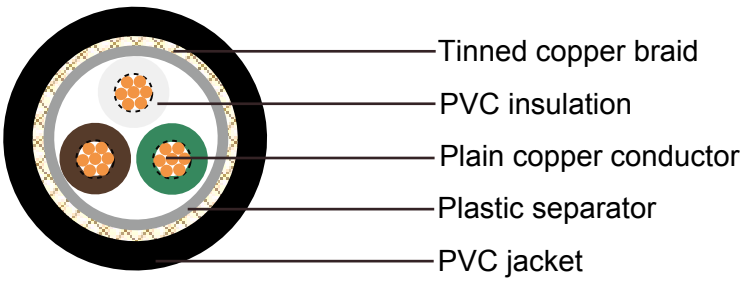
LiYCY screened cables are suitable for flexible use with free movement, but without tensile stress or forced movements in dry wet and moist areas but are not suitable for open air application. LiYCY cables are ideal whenever construction requirements call for minimal outer diameter such as areas of tool making, machine industry, eletrotechnics, computers, measuring and controlling technics. The extremely small outer diameter makes the cable also suitable for miniature plugs.

Standard and Approval

VDE 0245, VDE 0812

Cable Construction

- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 IEC 60228 cl.5
- PVC core insulation to DIN VDE 0281 part 1
- Color coded to DIN 47100, but without color repetition
- Cores twisted into layers
- Plastic foil separator
- 85% tinned copper braid
- PVC outer jacket to DIN VDE 0281 part 1



LiYCY

German Standard (VDE)

Technical Characteristics

- Working voltage: 250 volts
- Test voltage: 1200/1500 volts
- Minimum bending radius: 10 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -40º C to +80º C
- Flame retardant: IEC 60332.1
- Insulation resistance: 20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
26(18/38)	2X0.14	3.9	12	20
26(18/38)	3X0.14	4.1	13	28
26(18/38)	4X0.14	4.3	14.3	33
26(18/38)	5X0.14	4.6	15.5	38
26(18/38)	6X0.14	4.8	22	38
26(18/38)	7X0.14	4.9	19	49
26(18/38)	8X0.14	5.3	21.2	56
26(18/38)	10X0.14	5.9	28.5	66
26(18/38)	12X0.14	6.3	30.4	78
26(18/38)	14X0.14	6.5	32	80
26(18/38)	15X0.14	6.7	37.8	86
26(18/38)	16X0.14	6.8	43	90
26(18/38)	18X0.14	7.1	48.8	104
26(18/38)	20X0.14	7.6	53.9	116
26(18/38)	21X0.14	7.7	55.5	121
26(18/38)	25X0.14	8.5	63	149
26(18/38)	28X0,14	8.5	66.1	153
26(18/38)	30X0.14	8.7	69	158
26(18/38)	32X0.14	9	73.6	164
26(18/38)	36X0.14	9.3	83	183
26(18/38)	40X0.14	9.7	87.5	210
26(18/38)	44X0.14	10.3	110.5	225
26(18/38)	50X0.14	11.1	122.5	253
24(14/34)	2X0.25	4.5	16	32
24(14/34)	3X0.25	4.7	21	37

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
24(14/34)	4X0.25	5.1	24	41.3
24(14/34)	5X0.25	5.4	29	51.2
24(14/34)	6X0.25	5.8	30	58
24(14/34)	7X0.25	5.8	37	65
24(14/34)	8X0.25	6.5	42	73
24(14/34)	10X0.25	7.5	46	82
24(14/34)	12X0.25	7.7	59	145
24(14/34)	14X0.25	8.1	59	99
24(14/34)	15X0.25	8.4	61	111
24(14/34)	16X0.25	8.4	64	124
24(14/34)	18X0.25	8.8	83	143
24(14/34)	20X0.25	9.1	88	152.3
24(14/34)	21X0.25	9.3	93	161
24(14/34)	25X0.25	10.3	114	172
24(14/34)	28X0.25	10.8	126	181.1
24(14/34)	30X0.25	11.1	132	189
24(14/34)	32X0.25	11.4	138	203
24(14/34)	36X0.25	11.8	148	220
24(14/34)	40X0.25	12.3	157	248
24(14/34)	44X0.25	13.3	165	292.1
24(14/34)	50X0.25	13.9	178	318
24(14/34)	61X0.25	14.6	205	365.2
22(7/30)	2X0.34	4.9	21	37
22(7/30)	3X0.34	5.1	27	49
22(7/30)	4X0.34	5.5	33	59
22(7/30)	5X0.34	6.2	36	66
22(7/30)	6X0.34	6.8	36	64
22(7/30)	7X0.34	6.8	46	83
22(7/30)	8X0.34	7.3	52	94
22(7/30)	10X0.34	8.3	74	129.2
22(7/30)	12X0.34	8.5	80	142
22(7/30)	14XO.34	8.9	86	154
22(7/30)	15XO.34	9.2	90	155
22(7/30)	16X0.34	9.4	94	160
22(7/30)	18X0.34	9.8	103	173
22(7/30)	20X0.34	10.2	112	192
22(7/30)	21X0.34	10.3	116	199.2
22(7/30)	25X0.34	11.9	135	259
22(7/30)	28X0.34	12	153	280
22(7/30)	30X0.34	12.3	159	291.1
22(7/30)	32X0.34	13	165	305
22(7/30)	36X0.34	13.4	179	331
22(7/30)	40X0.34	13.9	200	365

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
22(7/30)	44X0.34	14.9	215	314.2
22(7/30)	50X0.34	15.9	235	431
20(16/32)	2X0.5	5.5	29	54
20(16/32)	3X0.5	5.8	38	67
20(16/32)	4X0.5	6.5	43	77
20(16/32)	5X0.5	7	51	90
20(16/32)	6X0.5	7.8	59	104
20(16/32)	7X0.5	7.8	65	112
20(16/32)	8X0.5	8.3	70	135
20(16/32)	10X0.5	9.5	88	160
20(16/32)	12X0.5	9.8	99	177
20(16/32)	18X0.5	11.8	134	239
20(16/32)	20X0.5	12.2	149	276
20(16/32)	25X0.5	14	211	352
20(16/32)	30X0.5	14.5	230	397
18(24/32)	2X0.75	5.9	38	64
18(24/32)	3X0.75	6.4	49	76
18(24/32)	4X0.75	7	58	92
18(24/32)	5X0.75	7.8	67	109
18(24/32)	7X0.75	8.4	100	156
18(24/32)	10X0.75	10.3	130	187
18(24/32)	12X0.75	11	154	218
18(24/32)	18X0.75	13	195	327
18(24/32)	25X0.75	15.6	280	454
18(24/32)	30X0.75	16.2	312	486
17(32/32)	2X1.0	6.5	43	72
17(32/32)	3X1.0	6.9	56	90
17(32/32)	4X1.0	7.6	68	109
17(32/32)	5X1.0	8.3	79	126
17(32/32)	7X1.0	9	118	171
17(32/32)	10X1.0	11.5	140	228
17(32/32)	12X1.0	11.9	168	259
17(32/32)	18X1.0	14	252	389
17(32/32)	25X1.0	16.7	335	517
16(30/30)	2X1.5	7.6	58	90
16(30/30)	3X1.5	8	74	115
16(30/30)	4X1.5	8.7	108	153
16(30/30)	5X1.5	9.5	129	176
16(30/30)	7X1.5	10.3	164	220
16(30/30)	12X1.5	13.9	254	376
16(30/30)	18X1.5	16.6	350	519
16(30/30)	25X1.5	20	550	901

LiYCY TP

Application and Description

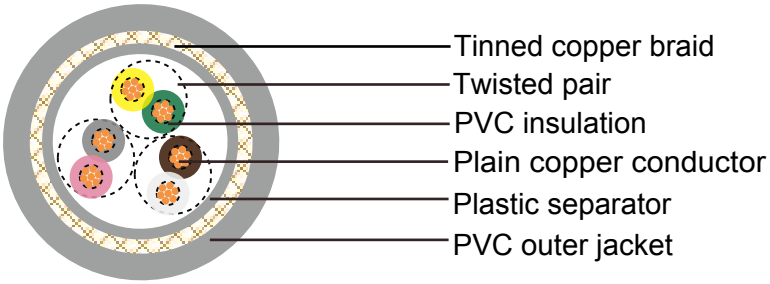
LiYCY TP twisted cable is used for flexible use with free movement, but without tensile stress or forced movements in dry, wet and moist areas but are not suitable for open air application. It is commonly used as control and signal cable in the electronics of computer systems, electronic control equipment, office machines and measurement devices in the tool making and machine industries. The twisted pair construction reduces interference (crosstalk) within the cable while the tinned copper braid shield offers optimum protection from electrical and electromagnetic interference.

Standard and Approval

VDE 0812, VDE 0814

Cable Construction

- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 IEC 60228 cl.5
- PVC core insulation to DIN VDE 0281 part 1
- Color coded to DIN 47100, but without color repetition
- Cores twisted into layers
- Plastic foil separator
- 85% tinned copper braid
- PVC outer jacket to DIN VDE 0281 part 1



LiYCY TP

German Standard (VDE)

Technical Characteristics

- Working voltage: 250 volts
- Test voltage: 1200 volts
- Minimum bending radius: 5 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -30º C to +70º C
- Flame retardant: IEC 60332.1
- Insulation resistance: 20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
26(18/38)	2 x 2 x 0.14	5.2	18.5	40
26(18/38)	3 x 2 x 0.14	5.6	23.0	49
26(18/38)	4 x 2 x 0.14	5.8	26.6	55
26(18/38)	5 x 2 x 0.14	6.5	30.7	66
26(18/38)	6 x 2 x 0.14	7.3	48.5	86
26(18/38)	7 x 2 x 0.14	7.5	51.1	91
26(18/38)	8 x 2 x 0.14	7.8	53.7	97
26(18/38)	10 x 2 x 0.14	8.5	59.0	109
26(18/38)	12 x 2 x 0.14	9.3	66.0	141
26(18/38)	14 x 2 x 0.14	10.0	74.0	148
26(18/38)	15 x 2 x 0.14	10.3	76.0	152
26(18/38)	16 x 2 x 0.14	10.7	79.0	155
26(18/38)	18 x 2 x 0.14	11.0	83.0	171
26(18/38)	20 x 2 x 0.14	11.2	97.0	183
26(18/38)	22 x 2 x 0.14	11.6	103.0	205
26(18/38)	24 x 2 x 0.14	12.0	111.0	228
26(18/38)	25 x 2 x 0.14	12.4	113.0	239
26(18/38)	26 x 2 x 0.14	12.8	122.0	245
26(18/38)	27 x 2 x 0.14	13.0	125.0	251
26(18/38)	28 x 2 x 0.14	13.2	128.0	258
26(18/38)	30 x 2 x 0.14	13.6	140.0	270
26(18/38)	32 x 2 x 0.14	14.2	145.0	284
26(18/38)	34 x 2 x 0.14	14.6	150.0	300
26(18/38)	36 x 2 x 0.14	14.8	156.0	316
26(18/38)	38 x 2 x 0.14	15.0	162.0	350
26(18/38)	40 x 2 x 0.14	15.4	177.0	370
26(18/38)	44 x 2 x 0.14	16.0	181.0	390

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
26(18/38)	46 x 2 x 0.14	16.4	195.0	430
26(18/38)	50 x 2 x 0.14	17.8	202.0	440
26(18/38)	52 x 2 x 0.14	18.0	206.0	460
26(18/38)	55 x 2 x 0.14	18.8	210.0	480
24(14/34)	2 x 2 x 0.25	6.3	28.0	53
24(14/34)	3 x 2 x 0.25	6.7	32.0	65
24(14/34)	4 x 2 x 0.25	6.8	38.0	80
24(14/34)	5 x 2 x 0.25	7.8	55.0	98
24(14/34)	6 x 2 x 0.25	8.8	65.0	114
24(14/34)	7 x 2 x 0.25	8.9	70.0	121
24(14/34)	8 x 2 x 0.25	9.6	75.0	129
24(14/34)	10 x 2 x 0.25	10.6	110.0	157
24(14/34)	12 x 2 x 0.25	11.6	117.0	189
24(14/34)	14 x 2 x 0.25	12.0	122.0	213
24(14/34)	15 x 2 x 0.25	12.5	134.0	225
24(14/34)	16 x 2 x 0.25	13.0	143.0	237
24(14/34)	18 x 2 x 0.25	13.2	148.0	248
24(14/34)	20 x 2 x 0.25	13.7	162.0	275
24(14/34)	22 x 2 x 0.25	14.4	172.0	303
24(14/34)	24 x 2 x 0.25	15.0	223.0	330
24(14/34)	25 x 2 x 0.25	15.4	233.0	343
24(14/34)	26 x 2 x 0.25	15.8	238.0	345
24(14/34)	27 x 2 x 0.25	16.2	244.0	350
24(14/34)	28 x 2 x 0.25	16.3	249.0	360
24(14/34)	30 x 2 x 0.25	16.7	254.0	375
24(14/34)	32 x 2 x 0.25	16.9	290.0	400
24(14/34)	34 x 2 x 0.25	17.5	312.0	410
24(14/34)	36 x 2 x 0.25	17.7	322.0	420
24(14/34)	38 x 2 x 0.25	18.0	339.0	450
24(14/34)	40 x 2 x 0.25	18.8	349.0	485
24(14/34)	44 x 2 x 0.25	19.0	359.0	500
24(14/34)	46 x 2 x 0.25	19.2	398.0	540
24(14/34)	50 x 2 x 0.25	19.9	403.0	550
24(14/34)	52 x 2 x 0.25	20.0	435.0	580
24(14/34)	55 x 2 x 0.25	21.0	464.0	630
22(7/30)	2 x 2 x 0.34	6.3	36.9	65
22(7/30)	3 x 2 x 0.34	7.5	44.9	78
22(7/30)	4 x 2 x 0.34	8.0	54.2	90
22(7/30)	5 x 2 x 0.34	8.9	63.5	110
22(7/30)	6 x 2 x 0.34	10.5	73.1	130
22(7/30)	7 x 2 x 0.34	10.7	79.5	145
22(7/30)	8 x 2 x 0.34	10.9	88.4	150
22(7/30)	9 x 2 x 0.34	11.4	99.3	170
22(7/30)	10 x 2 x 0.34	12.0	106.9	190
22(7/30)	12 x 2 x 0.34	13.2	122.1	220
22(7/30)	14 x 2 x 0.34	13.6	138.2	245

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
22(7/30)	16 x 2 x 0.34	15.1	154.2	250
22(7/30)	18 x 2 x 0.34	15.2	197.9	275
22(7/30)	21 x 2 x 0.34	16.2	214.4	300
22(7/30)	25 x 2 x 0.34	17.9	238.5	400
22(7/30)	27 x 2 x 0.34	18.2	262.5	410
22(7/30)	30 x 2 x 0.34	19.0	286.6	440
22(7/30)	34 x 2 x 0.34	20.0	310.1	510
22(7/30)	37 x 2 x 0.34	20.3	368.7	550
22(7/30)	40 x 2 x 0.34	21.0	392.6	590
22(7/30)	44 x 2 x 0.34	22.2	424.3	600
22(7/30)	50 x 2 x 0.34	23.5	455.9	650
22(7/30)	52 x 2 x 0.34	24.6	487.6	680
22(7/30)	56 x 2 x 0.34	25.1	518.5	750
22(7/30)	61 x 2 x 0.34	26.3	557.2	840
20(16/32)	2 x 2 x 0.5	7.8	54.0	89
20(16/32)	3 x 2 x 0.5	8.5	70.0	104
20(16/32)	4 x 2 x 0.5	9.1	91.0	126
20(16/32)	5 x 2 x 0.5	10.4	105.0	148
20(16/32)	6 x 2 x 0.5	11.8	120.0	171
20(16/32)	8 x 2 x 0.5	13.1	144.0	290
20(16/32)	10 x 2 x 0.5	14.3	178.0	320
20(16/32)	12 x 2 x 0.5	15.0	199.0	261
20(16/32)	16 x 2 x 0.5	17.5	254.0	421
20(16/32)	20 x 2 x 0.5	19.5	302.0	580
20(16/32)	25 x 2 x 0.5	22.5	344.0	740
18(24/32)	2 x 2 x 0.75	8.2	58.0	105
18(24/32)	3 x 2 x 0.75	9.0	84.0	128
18(24/32)	4 x 2 x 0.75	9.2	108.0	156
18(24/32)	5 x 2 x 0.75	11.0	126.0	189
18(24/32)	6 x 2 x 0.75	12.4	146.0	216
18(24/32)	8 x 2 x 0.75	14.1	180.0	309
18(24/32)	10 x 2 x 0.75	15.3	220.0	355
18(24/32)	12 x 2 x 0.75	16.4	261.0	405
18(24/32)	16 x 2 x 0.75	19.2	328.0	565
18(24/32)	20 x 2 x 0.75	21.2	392.0	700
18(24/32)	25 x 2 x 0.75	23.5	470.0	950
17(32/32)	2 x 2 x 1.0	8.9	82	116
17(32/32)	3 x 2 x 1.0	9.5	103	140
17(32/32)	4 x 2 x 1.0	10.5	132	190
17(32/32)	5 x 2 x 1.0	14.3	161	265
17(32/32)	7 x 2 x 1.0	16.5	208	411
16(30/30)	2 x 2 x 1.5	10.7	110	122
16(30/30)	3 x 2 x 1.5	11.6	135	193
16(30/30)	4 x 2 x 1.5	13.0	171	240
16(30/30)	5 x 2 x 1.5	15.2	211	339
16(30/30)	7 x 2 x 1.5	17.5	295	475

LiYCYCY

Application and Description

LiYCYCY braiding cable is for use in flexible or stationary applications under low mechanical stress with free movement without any tensile stress, loads or forced movements in dry, moist and wet conditions. Commonly used as a flexible connecting cable for electronic control equipment and computers in strong interference fields. The overall and individual tinned copper braid shields offer the best protection against electrical interference for perfect and precise impulse and data transmissions.

Standard and Approval

VDE 0245, VDE 0812

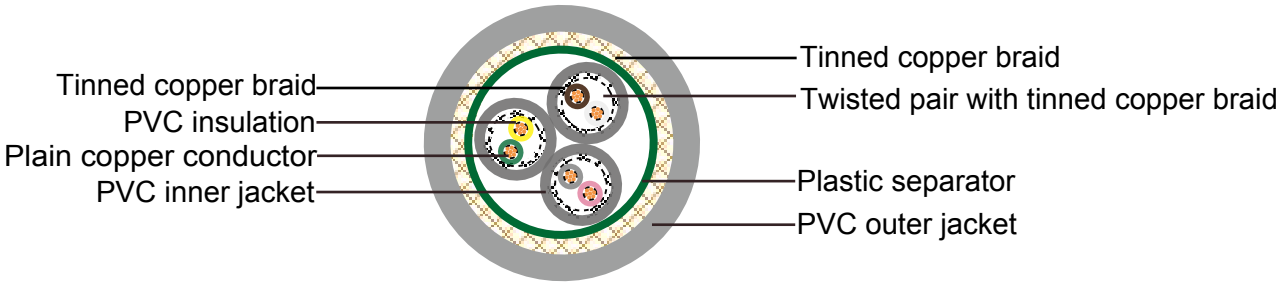
Cable Construction

- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 IEC 60228 cl.5
- PVC core insulation to DIN VDE 0281 part 1
- Color coded to DIN 47100, but without color repetition
- Cores twisted into pairs, pairs twisted into layers
- Pairs screened individually, tinned copper braid, approx. 85% coverage
- PVC inner jacket
- Plastic foil separator
- 85% tinned copper braid
- PVC outer jacket to DIN VDE 0281 part 1

Technical Characteristics

- Working voltage: 350 volts
- Test voltage: 1200 volts
- Minimum bending radius: 6 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -30º C to +80º C
- Flame retardant: IEC 60332.1
- Insulation resistance: 20 MΩ x km

LiYCYCY



LiYCYCY

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
26(18/38)	2 x 2 x 0.14	7.3	31.0	95
26(18/38)	3 x 2 x 0.14	7.5	34.0	105
26(18/38)	4 x 2 x 0.14	9.3	45.0	140
26(18/38)	5 x 2 x 0.14	10.5	58.0	160
26(18/38)	6 x 2 x 0.14	11.0	67.0	185
26(18/38)	7 x 2 x 0.14	12.0	78.0	230
26(18/38)	8 x 2 x 0.14	13.5	97.0	245
26(18/38)	9 x 2 x 0.14	14.1	101.0	280
26(18/38)	10 x 2 x 0.14	14.0	108.0	325
26(18/38)	12 x 2 x 0.14	15.0	134.0	380
26(18/38)	16 x 2 x 0.14	17.0	179.0	440
26(18/38)	20 x 2 x 0.14	17.8	225.0	520
24(14/34)	2 x 2 x 0.25	9.5	62.0	125
24(14/34)	3 x 2 x 0.25	10.0	78.2	140

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
24(14/34)	4 x 2 x 0.25	12.0	124.1	205
24(14/34)	5 x 2 x 0.25	12.1	137.6	230
24(14/34)	6 x 2 x 0.25	13.0	148.1	275
24(14/34)	7 x 2 x 0.25	16.0	159.1	295
24(14/34)	8 x 2 x 0.25	17.0	178.7	330
24(14/34)	10 x 2 x 0.25	17.2	213.9	420
24(14/34)	12 x 2 x 0.25	17.5	238.3	465
24(14/34)	16 x 2 x 0.25	22.0	291.4	590
24(14/34)	20 x 2 x 0.25	22.6	325.0	620
24(14/34)	24 x 2 x 0.25	27.5	367.5	690
24(14/34)	32 x 2 x 0.25	29.8	588.0	785
24(14/34)	48 x 2 x 0.25	34.5	840.5	970
22(7/30)	2 x 2 x 0.34	10.1	73.1	139
22(7/30)	3 x 2 x 0.34	11.0	88.1	157
22(7/30)	4 x 2 x 0.34	12.4	137.2	213
22(7/30)	6 x 2 x 0.34	14.5	174.8	308
22(7/30)	8 x 2 x 0.34	16.0	247.2	385
22(7/30)	10 x 2 x 0.34	17.6	288.7	433
22(7/30)	12 x 2 x 0.34	18.5	321.0	495
22(7/30)	14 x 2 x 0.34	20.7	388.4	600
22(7/30)	16 x 2 x 0.34	22.5	425.5	637
22(7/30)	24 x 2 x 0.34	28.0	577.1	781
22(7/30)	2 x 2 x 0.5	10.8	83.1	143
22(7/30)	3 x 2 x 0.5	11.4	106.4	179
22(7/30)	4 x 2 x 0.5	13.0	158.0	241
22(7/30)	6 x 2 x 0.5	14.9	201.4	319
22(7/30)	8 x 2 x 0.5	16.8	311.5	441
22(7/30)	10 x 2 x 0.5	18.4	334.5	464
22(7/30)	12 x 2 x 0.5	20.1	394.1	529
22(7/30)	14 x 2 x 0.5	21.6	446.0	641
22(7/30)	16 x 2 x 0.5	23.8	501.2	694
22(7/30)	24 x 2 x 0.5	28.4	712.4	930

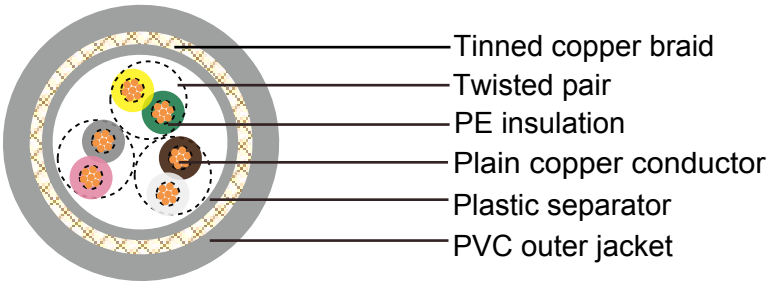
Li2YCY/ Li2YCYv TP

Application and Description

The PE-insulated data cable is designed for computer application and data transmission. It is specially designed for wiring data systems with transmission rates up to 10MB/s, eg. for interfaces of types RS 422, RS 485. The twisted pair lay-up prevents electrical unbalances within the cable and this effectively suppresses cross-talk effect. It is designed for limited flexible use as well as for fixed installation in dry and damp interiors. Yv version reinforced with a black outer sheath suitable for outdoor and indoor use as well as for direct burial.

Standard and Approval

CE Low Voltage Directive 73/23/EEC and 93/68/EEC



Li2YCY

Li2YCY

Cable Construction

- Plain copper conductor
- 7-wires strands to DIN VDE 0881, Suitable for Termi-Point and solder-free connection technique
- PE core insulation type 2YI1 to DIN VDE 0207 part 2
- Color coded to DIN 47100 with color repetition
- Cores twisted into layers
- Plastic foil separator
- 85% tinned copper braid
- PVC outer jacket type YM2 grey to DIN VDE 0207 part 5

Technical Characteristics

- Working voltage: 250 volts
- Test voltage: Conductor to conductor 2000 V
  Conductor to shield 1000 V
- Minimum bending radius: 7.5 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -30º C to +80º C
- Flame retardant: IEC 60332.1-2
- Insulation resistance: 5GΩ x km
- Impedance: 100 Ω + 15 Ω
- Mutual capacitance at 800 Hz: max. 60 nF/km
- Loop resistance: max. 160 Ohm/km
- Inductance: approx. 0.66 mH/km
- Cross-Talk Attenuation: Up 1 MHz min. 50 dB / Up 10 MHz min. 40 dB

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
24(7/32)	2 x 2 x 0.22	7.3	31.0	95
24(7/32)	3 x 2 x 0.22	7.5	34.0	105
24(7/32)	4 x 2 x 0.22	9.3	45.0	140
24(7/32)	8 x 2 x 0.22	13.5	97.0	245
24(7/32)	10 x 2 x 0.22	14.0	108.0	325
22(7/30)	2 x 2 x 0.34	9.5	62.0	125
22(7/30)	3 x 2 x 0.34	10.0	78.2	140
22(7/30)	4 x 2 x 0.34	12.0	124.1	205
22(7/30)	8 x 2 x 0.34	17.0	178.7	330
22(7/30)	10 x 2 x 0.34	17.2	213.9	420
20(7/28)	2 x 2 x 0.50	10.1	73.1	139
20(7/28)	3 x 2 x 0.50	11.0	88.1	157
20(7/28)	4 x 2 x 0.50	12.4	137.2	213
20(7/28)	8 x 2 x 0.50	16.0	247.2	385
20(7/28)	10 x 2 x 0.50	17.6	288.7	433

Li2YCY PiMF

Application and Description

Li2YCY PiMF is particularly suitable for wiring data systems and controls in large industrial plants, for the transmission of sensitive signals and high bit rates for enhanced requirements in near-end cross-talk attenuation and high electrical interference in the circuits. For measurement value transmission and serial 2-wire interfaces, Cables of this type are intended for limited flexible use, and for fixed installation in dry and damp interiors

Standard and Approval

CE Low Voltage Directive 73/23/EEC and 93/68/EEC

Cable Construction

- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, IEC 60228 cl.5
- PE core insulation type 2YI1 to DIN VDE 0207 part 2
- Yellow and red core colours, pairs numbered as per DIN 47100
- Two cores twisted into a pair
- Plastic foil separator
- Screening of pairs with plastic laminated metal foil with multi-wire tinned copper drain wire
- Pairs (PiMF) twisted in layers
- Plastic foil separator
- 85% tinned copper braid
- PVC outer jacket type YM2 grey to DIN VDE 0207 part 5, black color for Yv version

Technical Characteristics

- Working voltage: 250 volts

- Test voltage:

Conductor to conductor	1200V
Conductor to shield	500V
Shield to shield	500V

- Minimum bending radius: 10 x Ø

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

- Static temperature: -30° C to +70° C

- Flame retardant: IEC 60332.1-2

- Insulation resistance: 5GΩ x km

- Short-range crosstalk attenuation up to 1 MHz min. 75 dB

- Impendence at 1 MHz:

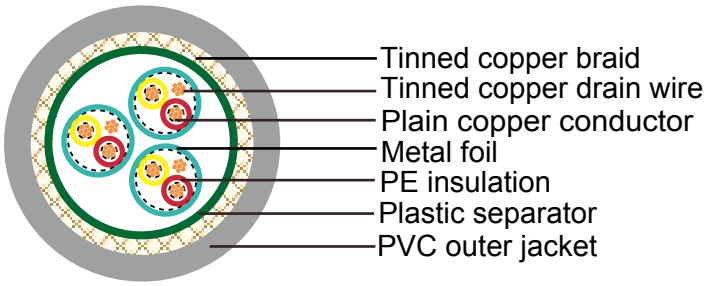
0.22mm²	approx. 80Ohm
0.34mm²	approx. 85Ohm
0.5mm²	approx. 80Ohm
1.0mm²	approx. 75Ohm

- Mutual capacitance at 800 Hz:

0.22mm²	max.70nF/km
0.34mm²	max.70nF/km
0.5mm²	max.75nF/km
1.0mm²	max.85nF/km

- Loop resistance:

0.22mm²	max.186Ohm/km
0.34mm²	max.115Ohm/km
0.5mm²	max.78.4Ohm/km
1.0mm²	max.39Ohm/km



Li2YCY PiMF

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
24(7/32)	2 x 2 x 0.22	7.7	33	38
24(7/32)	3 x 2 x 0.22	7.8	42	57
24(7/32)	4 x 2 x 0.22	9.3	50	83
24(7/32)	8 x 2 x 0.22	10.8	85	133
24(7/32)	10 x 2 x 0.22	11.6	100	164
22(7/30)	2 x 2 x 0.34	9.0	43	70
22(7/30)	3 x 2 x 0.34	9.1	55	85

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
22(7/30)	4 x 2 x 0.34	9.4	64	103
22(7/30)	8 x 2 x 0.34	13.4	127	191
22(7/30)	10 x 2 x 0.34	14.3	150	230
20(7/28)	2 x 2 x 0.5	9.1	50	101
20(7/28)	3 x 2 x 0.5	10.0	66	120
20(7/28)	4 x 2 x 0.5	12.0	108	172
20(7/28)	5 x 2 x 0.5	13.1	120	201
20(7/28)	6 x 2 x 0.5	14.4	148	260
20(7/28)	8 x 2 x 0.5	15.0	180	310
20(7/28)	10 x 2 x 0.5	17.6	236	398
20(7/28)	16 x 2 x 0.5	21.2	338	515
20(7/28)	20 x 2 x 0.5	22.9	394	688
20(7/28)	30 x 2 x 0.5	27.9	577	980
20(7/28)	40 x 2 x 0.5	38.3	684	1390
20(7/28)	50 x 2 x 0.5	43.2	834	1860
18(24/32)	2 x 2 x 0.75	10.4	61	117
18(24/32)	3 x 2 x 0.75	11.3	97	142
18(24/32)	4 x 2 x 0.75	14.0	141	240
18(24/32)	5 x 2 x 0.75	15.1	163	304
18(24/32)	6 x 2 x 0.75	16.8	198	352
18(24/32)	8 x 2 x 0.75	17.2	246	415
18(24/32)	10 x 2 x 0.75	19.8	305	505
18(24/32)	16 x 2 x 0.75	24.0	446	732
18(24/32)	20 x 2 x 0.75	25.6	530	860
18(24/32)	30 x 2 x 0.75	30.9	765	1210
17(32/32)	2 x 2 x 1.0	11.9	72	130
17(32/32)	3 x 2 x 1.0	12.2	104	161
17(32/32)	4 x 2 x 1.0	16.2	186	360
17(32/32)	5 x 2 x 1.0	17.4	231	412
17(32/32)	6 x 2 x 1.0	18.7	260	472
17(32/32)	8 x 2 x 1.0	19.2	322	540
17(32/32)	10 x 2 x 1.0	22.2	382	670
17(32/32)	16 x 2 x 1.0	26.9	578	982
17(32/32)	20 x 2 x 1.0	29.4	710	1240
17(32/32)	30 x 2 x 1.0	35.4	1050	1720
18(24/32)	2 x 2 x 1.5	12.8	81	164
18(24/32)	3 x 2 x 1.5	14.1	141	197
18(24/32)	4 x 2 x 1.5	17.4	261	480
16(30/30)	5 x 2 x 1.5	18.4	284	516
16(30/30)	6 x 2 x 1.5	20.1	355	590
16(30/30)	8 x 2 x 1.5	20.7	448	696
16(30/30)	10 x 2 x 1.5	23.9	551	874
16(30/30)	16 x 2 x 1.5	29.7	838	1340
16(30/30)	20 x 2 x 1.5	31.7	1030	1620

LiHH

Application and Description

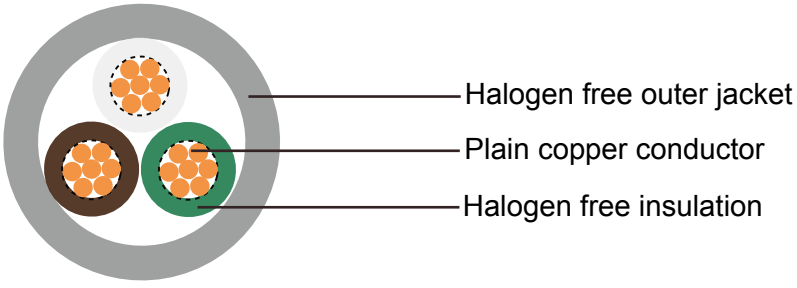
LiHH cable is for use in flexible or stationary applications under low mechanical stress with free movement without any tensile stress, loads or forced movements in dry, moist and wet conditions. Commonly used as connecting cable for signal, measuring, control, call-announcing and two-way intercom systems, clock installations, electronic weighing machines and electrical apparatus for office use. The halogen-free thermoplastic jacket is flame retardant and will give off no corrosive or toxic gases in the case of fire. Commonly installed in public buildings, laboratories, trading and transportation centers. Not permitted for outdoor use.

Standard and Approval

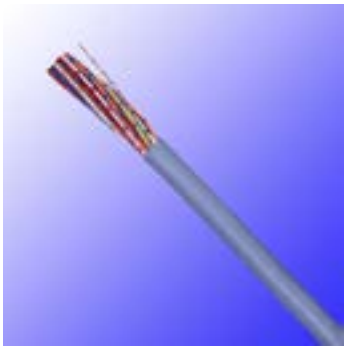
VDE 0482 part 267, VDE 0812

Cable Construction

- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, IEC 60228 cl.5
- Halogen free core insulation
- Color coded to DIN 47100, but without color repetition
- Halogen free outer jacket



LiHH



LiHH

German Standard (VDE)

Technical Characteristics

- Working voltage: 350 volts
- Test voltage: 1200 volts
- Minimum bending radius: 4 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -40º C to +70º C
- Flame retardant: IEC 60332.1-2
- Halogen free: DIN EN 50267/IEC 60754
- Smoke density: DIN EN 61034/IEC 61034
- Insulation resistance: 20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
26(18/38)	2 X 0.14	3.3	3	13
26(18/38)	3 X 0.14	3.5	4.1	16
26(18/38)	4 X 0.14	3.7	5.4	18
26(18/38)	5 X 0.14	4.1	7	22
26(18/38)	6 X 0.14	4.2	8.1	25
26(18/38)	7 X 0.14	4.4	9.4	26
26(18/38)	8 X 0.14	4.8	11	30
26(18/38)	10 X 0.14	5.5	13.5	36
26(18/38)	12 X 0.14	6.1	16.2	44
26(18/38)	15 X 0.14	6.5	20.2	57
26(18/38)	18 X 0.14	6.9	24.2	65
26(18/38)	20 X 0.14	7.8	27	73
26(18/38)	21 X 0.14	7.9	29	76
26(18/38)	25 X 0.14	8.3	35	90
26(18/38)	30 X 0.14	8.8	40.4	98
26(18/38)	34 X 0.14	9.2	46	111
26(18/38)	40 X 0.14	10.4	54	139
26(18/38)	50 X 0.14	12.5	67.2	764
24(14/34)	2 X 0.25	3.6	5	20
24(14/34)	3 X 0.25	3.8	7.2	23
24(14/34)	4 X 0.25	4.1	9.6	27
24(14/34)	5 X 0.25	4.5	12	32
24(14/34)	6 X 0.25	4.9	14.4	39
24(14/34)	7 X 0.25	5	17	41

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
24(14/34)	8 X 0.25	6.4	19.2	50
24(14/34)	10 X 0.25	6.3	24	58
24(14/34)	12 X 0.25	6.5	30	66
24(14/34)	15 X 0.25	7.3	36	80
24(14/34)	16 X 0.25	7.4	38.4	85
24(14/34)	18 X 0.25	7.9	43.2	95
24(14/34)	21 X 0.25	8.6	50.4	105
24(14/34)	25 X 0.25	9.2	60	130
24(14/34)	34 X 0.25	10.8	82	168
24(14/34)	40 X 0.25	11.4	96	196
22(7/30)	2 X 0.34	4.3	7	26
22(7/30)	3 X 0.34	4.5	10	30
22(7/30)	4 X 0.34	4.8	13.1	38
22(7/30)	5 X 0.34	5.3	16.4	44
22(7/30)	7 X 0.34	6.1	23	59
22(7/30)	8 X 0.34	6.2	26.2	65
22(7/30)	10 X 0.34	7.7	33	80
22(7/30)	12 X 0.34	7.9	39.2	94
22(7/30)	15 X 0.34	8.8	49.1	115
22(7/30)	18 X 0.34	9.6	59.1	135
22(7/30)	21 X 0.34	10.4	69	154
22(7/30)	25 X 0.34	11.4	82	180
22(7/30)	34 X 0.34	12.8	111.1	233
22(7/30)	40 X 0.34	13.7	131	272
20(16/32)	2 X 0.5	4.5	10	30
20(16/32)	3 X 0.5	4.8	14.4	36
20(16/32)	4 X 0.5	5.2	19.2	44
20(16/32)	5 X 0.5	6.1	24	57
20(16/32)	7 X 0.5	6.4	34	71
20(16/32)	10 X 0.5	8.3	48	101
20(16/32)	12 X 0.5	8.6	58	117
20(16/32)	15 X 0.5	9.5	72	145
20(16/32)	18 X 0.5	10.5	86.4	171
20(16/32)	21 X 0.5	11.3	101	197
20(16/32)	25 X 0.5	12.4	120	230
20(16/32)	30 X 0.5	13.1	144	269
20(16/32)	34 X 0.5	13.8	163.2	301
20(16/32)	40 X 0.5	15.2	192	365
18(24/32)	2 X 0.75	5.2	14.4	40
18(24/32)	3 X 0.75	5.5	22	54
18(24/32)	4 X 0.75	6.1	29	60
18(24/32)	5 X 0.75	6.7	36.1	73
18(24/32)	7 X 0.75	7.3	50.4	91
18(24/32)	10 X 0.75	9.5	72	137
18(24/32)	12 X 0.75	10.2	86.4	166

LiHCH

Application and Description

LiHCH is for use in flexible or stationary applications under low mechanical stress with free movement without any tensile stress, loads or forced movements in dry, moist and wet conditions. Commonly used as connecting cable for signal, measuring, control, call-announcing and two-way intercom systems, clock installations, electronic weighing machines and electrical apparatus for office use. The halogen-free thermoplastic jacket is flame retardant and will give off no corrosive or toxic gases in the case of fire. Commonly installed in public buildings, laboratories, trading and transportation centers. The tinned copper braid shield offers interference-free signal and data transfers. Not permitted for outdoor use.

Standard and Approval

VDE 0482 part 267, VDE 0812

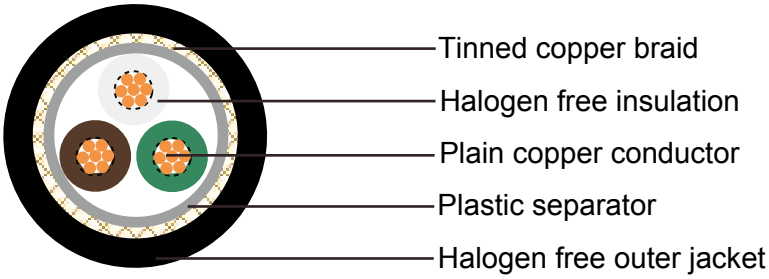
Cable Construction

- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, IEC 60228 cl.5
- Halogen free core insulation
- Color coded to DIN 47100, but without color repetition
- Plastic foil separator
- 85% tinned copper braid
- Halogen free outer jacket

Technical Characteristics

- Working voltage: 250 volts
- Test voltage: 1200 volts
- Minimum bending radius: 5 x Ø

- Flexing temperature: -5º C to +70º C
- Static temperature: -40º C to +70º C
- Flame retardant: IEC 60332.1-2
- Mutual Capacitance:
  - Conductor./conductor: 120 nF/km
  - Conductor./shield: 160 nF/km
- Halogen free: DIN EN 50267/IEC 60754
- Smoke density: DIN EN50268/IEC 61034
- Insulation resistance: 20 MΩ x km



LiHCH

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
26(18/38)	2x0.14	3.9	8	21
26(18/38)	3x0.14	4.2	11	26
26(18/38)	4x014	4.5	12.5	28
26(18/38)	5x0.14	4.8	13.5	33
26(18/38)	6x0.14	5.1	15.5	37
26(18/38)	7x0.14	5.1	17	40
26(18/38)	8x0.14	5.5	19.5	46
26(18/38)	9x0.14	5.9	23	50
26(18/38)	10x0.14	6	26	55
26(18/38)	12x0.14	6.3	30	64
26(18/38)	16x0.14	7.4	40	84
26(18/38)	20x0.14	8.2	46	98
26(18/38)	25x0.14	8.6	55	125
24(14/34)	2x0.25	4.3	12	29
24(14/34)	3x0.25	4.5	14.7	30
24(14/34)	4x0.25	4.9	17	38
24(14/34)	5x0.25	5.3	21.2	43
24(14/34)	6x0.25	5.7	23.5	48
24(14/34)	7x0.25	5.7	27.5	51
24(14/34)	8x0.25	6.5	29.8	58
24(14/34)	9x0.25	7	34.9	64
24(14/34)	10x0.25	7.2	39.5	70
24(14/34)	12x0.25	7.4	46	83
24(14/34)	16x0.25	8.1	55.3	102
24(14/34)	20x0.25	9	66.1	121
24(14/34)	25x0.25	10.1	81	145
22(7/30)	2 X 0.34	4.9	16	31

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
22(7/30)	3 X 0.34	5.1	19	37
22(7/30)	4 X 0.34	5.5	25	48
22(7/30)	5 X 0.34	6.2	30	58
22(7/30)	6 X 0.34	6.5	34	67
22(7/30)	7 X 0.34	6.9	37	76
22(7/30)	8 X 0.34	7.6	46	95
22(7/30)	10 X 0.34	8.9	62	110
22(7/30)	12 X 0.34	9.1	68	123
22(7/30)	14 X 0.34	9.4	82	140
22(7/30)	16 X 0.34	9.9	95	156
22(7/30)	18 X 0.34	10.4	107	171
22(7/30)	21 X 0.34	11.3	122	195
22(7/30)	25 X 0.34	12.5	141	226
22(7/30)	30 X 0.34	13.1	162	260
22(7/30)	34 X 0.34	13.9	177	284
22(7/30)	40 X 0.34	14.8	202	329
20(16/32)	2 X 0.5	5.2	22	37
20(16/32)	3 X 0.5	5.5	30	46
20(16/32)	4 X 0.5	6.1	34	57
20(16/32)	5 X 0.5	6.9	52	77
20(16/32)	6 X 0.5	7.1	60	85
20(16/32)	7 X 0.5	7.3	65	92
20(16/32)	8 X 0.5	8.3	76	113
20(16/32)	10 X 0.5	9.4	88	135
20(16/32)	12 X 0.5	9.7	98	147
20(16/32)	18 X 0.5	11.1	141	210
20(16/32)	21 X 0.5	12.2	161	241
20(16/32)	25 X 0.5	13.5	186	284
20(16/32)	30 X 0.5	14.5	223	339
20(16/32)	40 X 0.5	16.5	293	443
18(24/32)	2 X 0.75	5.9	31	45
18(24/32)	3 X 0.75	6.3	37	60
18(24/32)	4 X 0.75	7.1	58	80
18(24/32)	5 X 0.75	7.6	68	97
18(24/32)	7 X 0.75	8.5	88	126
18(24/32)	10 X 0.75	10.5	122	174
18(24/32)	12 X 0.75	11.2	137	195
17(32/32)	2 X 1.0	6.5	43	71
17(32/32)	3 X 1.0	7.0	57	89
17(32/32)	4 X 1.0	7.5	68	109
17(32/32)	5 X 1.0	8.2	79	126
17(32/32)	7 X 1.0	8.8	118	171
16(30/30)	2 X 1.5	7.7	58	91
16(30/30)	3 X 1.5	8.1	74	115
16(30/30)	4 X 1.5	8.7	107	153
16(30/30)	5 X 1.5	9.5	129	176
16(30/30)	7 X 1.5	10.7	164	220

LiHCH TP

Application and Description

LiHCH TP is for use in flexible or stationary applications under low mechanical stress with free movement without any tensile stress, loads or forced movements in dry, moist and wet conditions. Commonly used as connecting cable for signal, measuring, control, call-announcing and two-way intercom systems, clock installations, electronic weighing machines and electrical apparatus for office use. The halogen-free thermoplastic jacket is flame retardant and will give off no corrosive or toxic gases in the case of fire. Commonly installed in public buildings, laboratories, trading and transportation centers. The twisted pair design will reduce internal interference (crosstalk) while the tinned copper braid shield offers added protection and interference-free signal and data transfers. Not permitted for outdoor use.

Standard and Approval

VDE 0482 part 267, VDE 0812

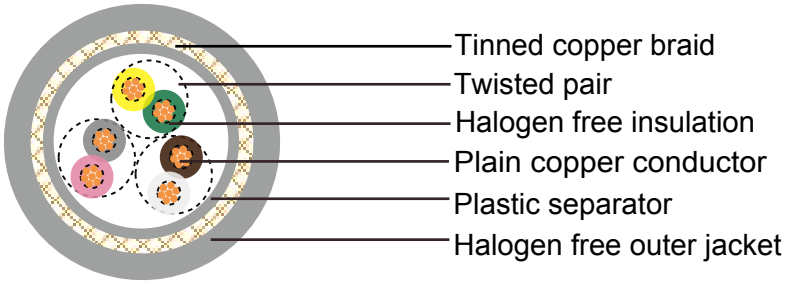
Cable Construction

- Plain copper conductor
- Stranded to DIN VDE 0295 cl. 5, IEC 60228 cl.5
- Halogen free core insulation
- Color coded to DIN 47100, but without color repetition
- Cores twisted into layers
- Plastic foil separator
- 85% tinned copper braid
- Halogen free outer jacket

LiHCH TP

Technical Characteristics:

- Working voltage: 250 volts
- Test voltage: 1200 volts
- Minimum bending radius: 5 x Ø
- Flexing temperature: -5º C to +70º C
- Static temperature: -40º C to +70º C
- Flame retardant: IEC 60332.1-2
- Mutual Capacitance: Conductor./conductor: 80 nF/km
  Conductor./shield: 120 nF/km
- Halogen free: DIN EN 50267/IEC 60754
- Smoke density: DIN EN50268/IEC 61034
- Insulation resistance: 20 MΩ x km



LiHCH TP

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
26(18/38)	2x2x0.14	5.2	19.1	34
26(18/38)	3x2x0.14	5.7	23.4	41
26(18/38)	4x2x0.14	6.5	27.8	53
26(18/38)	5x2x0.14	7.0	31.9	60
26(18/38)	6x2x0.14	7.2	36.2	68
26(18/38)	8x2x0.14	7.8	43.4	80
26(18/38)	10x2x0.14	8.9	50.6	100
26(18/38)	12x2x0.14	9.7	58.2	111
26(18/38)	16x2x0.14	10.5	71.4	136
26(18/38)	18x2x0.14	11.1	92.8	159
26(18/38)	20x2x0.14	11.7	98.1	164
26(18/38)	24x2x0.14	12.3	114.8	203
26(18/38)	25x2x0.14	12.8	117.5	207
26(18/38)	28x2x0.14	13.1	125.7	221
26(18/38)	30x2x0.14	13.8	135.6	237
26(18/38)	36x2x0.14	14.6	157.8	275
26(18/38)	40x2x0.14	14.9	168.2	296
26(18/38)	44x2x0.14	16.3	205.9	348
26(18/38)	52x2x0.14	17.0	228.1	388
26(18/38)	61x2x0.14	18.3	263.2	443

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
24(14/34)	2x2x0.25	5.7	24.9	42
24(14/34)	3x2x0.25	6.4	31.4	55
24(14/34)	4x2x0.25	7.8	44.9	81
24(14/34)	6x2x0.25	7.9	50.7	85
24(14/34)	8x2x0.25	9.0	62.1	109
24(14/34)	10x2x0.25	9.8	73.9	132
24(14/34)	12x2x0.25	10.9	101.9	160
24(14/34)	16x2x0.25	11.9	126.8	195
24(14/34)	18x2x0.25	12.7	136.6	222
24(14/34)	24x2x0.25	14.2	170.3	270
22(7/30)	2x2x0.34	6.8	31.5	57
22(7/30)	3x2x0.34	7.4	39.7	72
22(7/30)	4x2x0.34	8.8	49.8	99
22(7/30)	5x2x0.34	9.5	58.5	116
22(7/30)	6x2x0.34	9.7	65.1	128
22(7/30)	8x2x0.34	10.6	80.7	144
22(7/30)	12x2x0.34	13.4	133.1	225
22(7/30)	16x2x0.34	14.6	165.0	280
22(7/30)	18x2x0.34	15.1	178.3	306
22(7/30)	24x2x0.34	17.6	255.1	415
20(16/32)	2x2x0.5	7.2	39.3	66
20(16/32)	3x2x0.5	7.9	50.1	84
20(16/32)	4x2x0.5	9.6	82.0	146
20(16/32)	6x2x0.5	10.4	86.0	146
20(16/32)	8x2x0.5	10.9	111.5	166
20(16/32)	10x2x0.5	13.2	146.5	229
20(16/32)	12x2x0.5	14.4	175.7	268
20(16/32)	16x2x0.5	16.3	241.3	368
20(16/32)	18x2x0.5	16.9	261.0	399
20(16/32)	20x2x0.5	16.9	280.2	418
20(16/32)	24x2x0.5	19.0	330.4	491
18(24/32)	2x2x0.75	8.5	52.4	92
18(24/32)	3x2x0.75	9.4	69.4	112
18(24/32)	4x2x0.75	10.9	108.0	179
18(24/32)	6x2x0.75	12.5	136.5	218
18(24/32)	8x2x0.75	14.9	180.0	305
18(24/32)	12x2x0.75	17.1	261.2	385
18(24/32)	16x2x0.75	18.6	329.9	482
18(24/32)	18x2x0.75	19.3	369.3	535
18(24/32)	24x2x0.75	21.8	469.2	661
17(32/32)	2x2x1.0	10.5	84.0	142
17(32/32)	3x2x1.0	10.6	96.0	173
17(32/32)	4x2x1.0	11.5	121.0	212
17(32/32)	5x2x1.0	12.0	161.0	266

JE-LiHCH

Application and Description

JE-LiHCH halogen-free cable with improved characteristics in the case of fire is used for telephone transmission, measuring and signal purposes. The copper shielding design (C) protects the transmission circuits against electrical interferences. A fire propagation is prevented through high oxygen index of the insulation material and produce no corrosive gases in case of fire. Those are preferable used for telecommunication indoor installations and in special cases the outdoor installation is permitted under protection against sunlight. These cables are suitable for fixed installation in areas with danger of fire, in dry and damp environments as well in and under plaster.

Standard and Approval

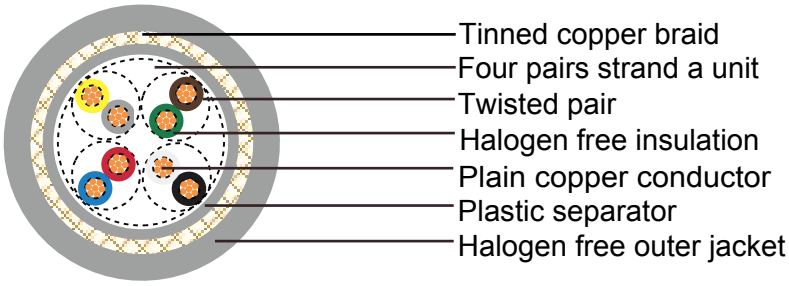
VDE 0815

Cable Construction

- Plain copper conductor 7x0.3mm
- Halogen-free core insulation, compound type HI1 or HI2 to DIN VDE part 23
- Core identification to DIN VDE 0815 (with ring colours and ring groups)
- 2 conductors twisted in a pair, 4 pairs to a unit and several units stranded in layers (for 2 pairs cable, 4 conductors stranded to a quad)
- Plastic foil separator
- 85% bare/tinned copper braid, 0.2mm
- Halogen free outer jacket type HM1 or HM2 to DIN VDE 0207 part 24

Technical Characteristics

- Working voltage: 225 volts
- Test voltage: core/core 500 V
  core/screen 2000 V
- Minimum bending radius: 7.5 x Ø
- Flexing temperature: -5º C to +50º C
- Static temperature: -30º C to +70º C
- Flame retardant: IEC 60332.1-2



JE-LiHCH

- Mutual Capacitance: Max.120 nF/km at 800 Hz
  (This value may be extended at 20% with a make-up up to 4 pairs)
- Capacitance Unbalance
  Max. 200 pF/100 m (20% of the values, but one value up to 400 pF is allowed)
- Halogen free: DIN EN 50267/IEC 60754
- Smoke density: DIN EN50268/IEC 61034
- Insulation resistance: 100 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	No. of Units	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
20	2x2x0.5	-	9	44	102
20	4x2x0.5	1	12	80	168
20	8x2x0.5	2	17	152	297
20	12x2x0.5	3	18	192	357
20	20x2x0.5	5	22	288	555
20	32x2x0.5	8	26	439	852
20	40x2x0.5	10	29	531	1005

LiY / LiYv / LiYv-t

Application and Description

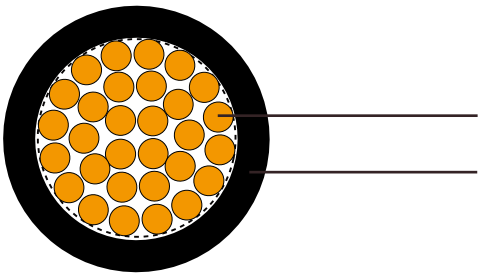
These PVC insulated stranded hook-up wires are employed in telecommunication systems, toys, sports equipment and general wiring equipment used in electrical engineering to meet stringent demands in terms of high and ultra-high flexibility. They are not permitted to be installed in heavy current applications outside of the equipment.

Standard and Approval

VDE 0812

Cable Construction

- Tinned copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Cl-5 and HD383
- Special PVC core insulation, compound YI3 to DIN VDE 0812
- Cores identification to VDE-0293



LiY

LiY

Technical Characteristics

- Working voltage: 0.14 mm² 500 V/0.25-1.50 mm² 900 V
- Test voltage: 0.14 mm² 1200 V/0.25-1.50 mm² 2500 V
- 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(temporary 105 º C for LiYv-t)
- Flame retardant: VDE 0472 part 804, test method B, and IEC 60332.1
- Insulation resistance: 10 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
26(18/38)	1 x 0.14	1.1	1.4	3.0
24(14/34)	1 x 0.25	1.3	2.4	4.0
22(19/34)	1 x 0.34	1.4	3.6	5.0
20(16/32)	1 x 0.50	1.8	4.8	8.0
18(24/32)	1 x 0.75	2.0	7.2	10.0
17(32/32)	1 x 1.00	2.1	9.6	13.0
16(30/30)	1 x 1.50	2.6	14.4	19.0
14(30/50)	1 x 2.50	3.4	24.0	31.0

LiYW

Application and Description

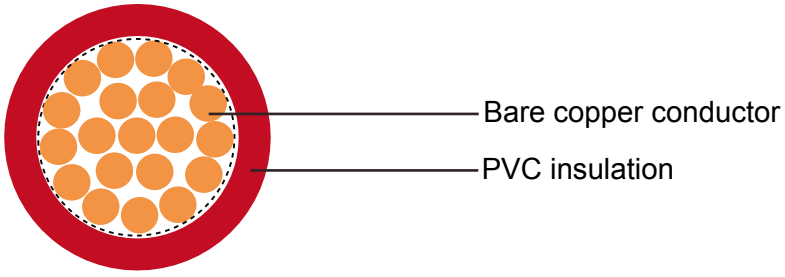
These thermal insulated wires are ideal for use in power current installation, switch cabinets, motors and transformers which are subject to direct contact with high temperature (e.g. varnishing machines and drying towers etc.). These are also suitable for inside wiring of electrical equipments such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

Standard and Approval

VDE-0281-7

Cable Construction

- Bare copper strands
- Strands to VDE-0295 Class-5, IEC 60228 Cl-5, BS 6360 cl. 5 and HD 383
- Special heat-resistant PVC core insulation
- Cores identification to VDE-0293



LiYW

LiYW

Technical Characteristics

- Working voltage: 300/500 V
- Test voltage: 2000 V
- Flexing bending radius: 12.5 x Ø
- Static bending radius: 12.5 x Ø
- Flexing temperature: -5º C to +105º C
- Static temperature: -10º C to +105º C
- Flame retardant: IEC 60332.1
- Insulation resistance: 20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
26(18/38)	1 x 0.14	1.0	1.4	3.2
24(14/34)	1 x 0.25	1.3	2.4	4.3
22(19/34)	1 x 0.34	1.4	3.6	5.3
20(16/32)	1 x 0.50	1.8	4.8	7.2

LiFY

Application and Description

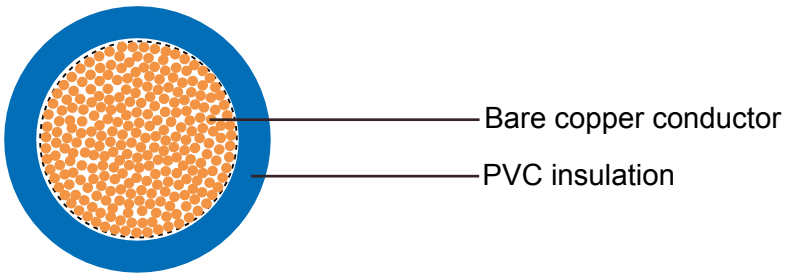
LiFY is highly flexible lead wire, it can be used as super flexible insulated strand wires for switch cabinets, as measuring cable for testing, laboratories, research etc.

Standard and Approval

VDE 0250,VDE 0281,VDE 0295

Cable Construction

- Super fine bare copper strands
- Strands to VDE-0295 Class-6, IEC 60228 Cl-6
- Special PVC core insulation
- Cores identification to VDE-0293



LiFY

LiFY

Technical Characteristics

- Working voltage: 1000 V
- Test voltage: 3000 V
- Flexing bending radius: 10 x Ø
- Static bending radius: 5 x Ø
- Flexing temperature: -15º C to +80º C
- Static temperature: -30º C to +80º C
- Flame retardant: VDE 0472 part 804, test method B, and IEC 60332.1
- Insulation resistance: 10 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
26(72/42)	1 x 0.14	1.1	1.4	2.6
24(65/40)	1 x 0.25	1.4	2.5	4.2
20(132/40)	1 x 0.50	2.2	5.5	8
18(195/40)	1 x 0.75	2.4	8	12
17(260/40)	1 x 1.00	2.6	10.8	18
16(192/38)	1 x 1.50	3.3	15	22
14(320/38)	1 x 2.50	3.9	25	37
12(512/38)	1 x 4.00	5.1	40	50
10(768/38)	1 x 6.00	6.5	60	71
8(1280/38)	1 x 10.0	7.5	100	130
6(2048/38)	1 x 16.0	9.1	160	187
4(3234/38)	1 x 25.0	10.8	240	294
2(4508/38)	1 x 35.0	11.9	336	380
1(6468/38)	1 x 50.0	14.9	480	521
2/0(8967/38)	1 x 70.0	17.0	672	740

NYM-J / NYM-O

Application and Description

NYM is suitable for industrial and home applications. It is designed for dry, moist and wet open areas as well as under plaster, walling and concrete. However, it is not recommended to lay the cable into the compacted concrete. Outer application is permitted only in the case that cable is not exposed to direct sunlights.

Standard and Approval

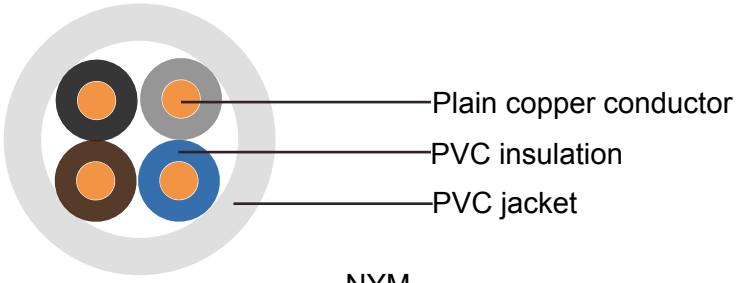
DIN VDE 0250, VDE 0482-332-1-2, DIN EN 60332-1-2 / IEC 60332-1

Cable Construction

- Solid or stranded, plain copper conductor
- to DIN VDE 0295 cl. 1 or cl. 2, BS 6360 cl. 1 or cl. 2 and IEC 60228 cl. 1 or cl. 2
- PVC insulation TI1 to DIN VDE 0281 part 1
- Color coded to DIN VDE 0293-308
- Conductors stranded in layer
- High flexible PVC outer jacket type TM1, according to DIN VDE 0281 part 1

Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 2000 volts
- Minimum bending radius: 4 x Ø
- Flexing temperature: +5º C to +70º C
- Fixed installation temperature: - 40º C to +70º C
- Flame retardant: IEC 60332.1
- Insulation resistance: >20 MΩ x km



Cable Parameter NYM

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
16(solid)	1X1.5	0.6	1.4	5.4	14.4	40
16(solid)	2 X1.5	0.6	1.4	8.7	29	170
16(solid)	3 X1.5	0.6	1.4	9.1	43	135
16(solid)	4 X1.5	0.6	1.4	9.8	58	160
16(solid)	5 X1.5	0.6	1.4	10.3	72	190
16(solid)	7 X1.5	0.6	1.4	11.5	101	235
16(solid)	10 X1.5	0.6	1.4	13.8	144	330
16(solid)	12 X1.5	0.6	1.4	14.4	173	405
14(solid)	1 X2.5	0.7	1.4	6	24	70
14(solid)	3 X2.5	0.7	1.4	10.4	72	190
14(solid)	4 X2.5	0.7	1.4	11.3	96	230
14(solid)	5 X2.5	0.7	1.4	12	120	270
14(solid)	7 X2.5	0.7	1.6	13.2	168	342
12(solid)	1X4	0.8	1.6	6.6	38	80
12(solid)	3 X4	0.8	1.6	12	115	258
12(solid)	4 X4	0.8	1.6	13	154	330
12(solid)	5 X4	0.8	1.6	14.5	192	410
10(solid)	1X6	0.8	1.6	7.2	58	105
10(solid)	3 X6	0.8	1.6	13	173	320
10(solid)	4 X6	0.8	1.6	15.1	230	460
10(solid)	5 X6	0.8	1.6	16.1	288	540
8(solid)	1X10	1.0	1.6	8.4	96	155
8(solid)	4 X10	1.0	1.6	17.6	384	680
8(solid)	5 X10	1.0	1.6	19.2	480	850
6(7/14)	1X16	1.2	1.8	9.9	154	230
6(7/14)	4 X16	1.2	1.8	21.3	614	1048
6(7/14)	5 X16	1.2	1.8	23.4	768	1280
4(7/12)	1x25	1.4	2.0	12	240	325
4(7/12)	4X25	1.4	2.0	25.8	960	1649
4(7/12)	5 X25	1.4	2.0	28.7	1200	1970
2(7/10)	4X35	1.4	2.0	28.5	1344	2000

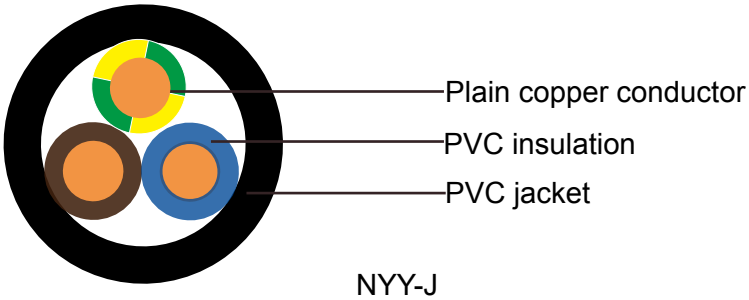
NYY-J / NYY-O

Application and Description

NYY power cable is designed for energy supply in cable ducts, power stations, industry and distribution boards and in subscriber networks. May also be used in brickwork and in concrete with the exception of cabling in shaken, vibrated or compressed concrete. NYY cables can be installed in open air, underground, in water and indoors where mechanical damages are not to be expected. The UV-resistance allows for outdoor use.

Standard and Approval

VDE-0276 Part-603 & Part-627, HD 603.1 & 627 S1, IEC 60502, VDE 0482-332-1-2, DIN EN 60332-1-2 / IEC 60332-1



NYY-J

Cable Construction

- Solid or stranded, plain copper conductor
- to DIN VDE 0295 cl. 1 or cl. 2, BS 6360 cl. 1 or cl. 2 and IEC 60228 cl. 1 or cl. 2
- PVC insulation DIV4 to HD 603.1
- Color coded to DIN VDE 0293-308, 0276 part 603 or HD 186
- Conductor color for 3+1/2 conductor

  J-type: green-yellow (1/2), brown, black, gray

  O-type: blue (1/2), brown, black, gray
- PVC outer jacket DMV5 to HD 603.1

Technical Characteristics

- Working voltage: 600/1000 volts
- Test voltage: 4000 volts
- Flexing bending radius: 15 x Ø
- Static bending radius: 12 x Ø
- Flexing temperature: -5º C to +50º C
- Fixed installation temperature: - 40º C to +70º C
- Flame retardant: IEC 60332.1
- Insulation resistance: >100 MΩ x km

NYY-J

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
12	1x4re	9.0	38.0	130.0
10	1x6re	10.0	58.0	136.0
8	1x10re	11.0	96.0	182.0
6	1x16re	12.0	154.0	252.0
4	1x25rm	13.0	240.0	365.0
2	1x35rm	14.0	336.0	480.0
1	1x50rm	16.0	480.0	620.0
2/0	1x70rm	17.0	672.0	840.0
3/0	1x95rm	19.0	912.0	1100.0
4/0	1x120rm	21.0	1152.0	1320.0
300mcm	1x150rm	23.0	1440.0	1610.0
350mcm	1x185rm	25.0	1776.0	1.980.0
500mcm	1x240rm	28.0	2304.0	2550.0
750mcm	1x300rm	30.0	2880.0	3200.0
-	1x400rm	34.0	3840.0	4000.0
-	1x500rm	38.0	4800.0	5100.0
16	3x1.5re	12.0	43.0	225.0
14	3x2.5re	13.0	72.0	275.0
12	3x4re	14.0	115.0	375.0
10	3x6re	15.0	173.0	480.0
8	3x10re	18.0	288.0	675.0
6	3x16re	19.0	461.0	880.0
4	3x25rm	24.0	720.0	1390.0

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
2	3x35sm	25.0	1008.0	1600.0
1	3x50sm	28.0	1440.0	2000.0
2/0	3x70sm	31.0	2016.0	2700.0
3/0	3x95sm	35.0	2736.0	3600.0
4/0	3x120sm	39.0	3456.0	4400.0
300mcm	3x150sm	44.0	4320.0	4910.0
350mcm	3x185sm	49.0	5328.0	6520.0
500mcm	3x240sm	53.0	6912.0	8290.0
4	3x25rm/16re	25.0	874.0	1575.0
2	3x35sm/16re	26.0	1162.0	1700.0
1	3x50sm/25rm	30.0	1680.0	2325.0
2/0	3x70sm/35sm	35.0	2352.0	2900.0
3/0	3x95sm/50sm	37.0	3216.0	3900.0
4/0	3x120sm/70sm	42.0	4128.0	4900.0
300mcm	3x150sm/70sm	47.0	4992.0	5800.0
350mcm	3x185sm/95sm	51.0	6240.0	7400.0
500mcm	3x240sm/120sm	59.0	8064.0	9700.0
-	3x300sm/150sm	66.0	10080.0	12000.0
16	4x1.5re	13.0	58.0	220.0
14	4x2.5re	14.0	96.0	300.0
12	4x4re	16.0	154.0	410.0
10	4x6re	17.0	230.0	520.0
8	4x10re	19.0	384.0	720.0
6	4x16re	22.0	614.0	1050.0
4	4x25rm	26.0	960.0	1650.0
2	4x35sm	28.0	1344.0	1860.0
1	4x50sm	31.0	1920.0	2500.0
2/0	4x70sm	35.0	2688.0	3300.0
3/0	4x95sm	38.0	3648.0	4500.0
4/0	4x120sm	42.0	4608.0	5500.0
300mcm	4x150sm	47.0	5760.0	6880.0
350mcm	4x185sm	52.0	7104.0	8460.0
500mcm	4x240sm	59.0	9216.0	11000.0
16	5x1.5re	13.0	72.0	280.0
14	5x2.5re	15.0	120.0	360.0
12	5x4re	16.0	192.0	490.0
10	5x6re	18.0	288.0	650.0
8	5x10re	20.0	480.0	870.0
6	5x16re	23.0	768.0	1255.0
4	5x25rm	30.0	1200.0	1980.0
2	5x35rm	34.0	1680.0	2650.0
16	7x1.5re	14.0	101.0	370.0

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
16	10x1.5re	17.0	144.0	530.0
16	12x1.5re	18.0	173.0	580.0
16	14x1.5re	19.0	202.0	620.0
16	16x1.5re	20.0	230.0	690.0
16	19x1.5re	21.0	274.0	770.0
16	21x1.5re	22.0	302.0	850.0
16	24x1.5re	23.0	346.0	900.0
16	30x1.5re	24.0	432.0	1030.0
16	40x1.5re	28.0	576.0	1260.0
16	61x1.5re	32.0	878.0	1760.0
14	7x2.5re	16.0	168.0	460.0
14	10x2.5re	19.0	240.0	650.0
14	12x2.5re	20.0	288.0	730.0
14	14x2.5re	21.0	336.0	820.0
14	16x2.5re	22.0	384.0	930.0
14	19x2.5re	23.0	456.0	1000.0
14	21x2.5re	24.0	504.0	1050.0
14	24x2.5re	26.0	576.0	1120.0
14	30x2.5re	28.0	720.0	1300.0
14	40x2.5re	30.0	960.0	1700.0
14	52x2.5re	36.0	1248.0	2300.0
14	61x2.5re	38.0	1464.0	2600.0
14	7x4re	19.0	269.0	620.0
14	7x6re	21.0	403.0	860.0

NYCY

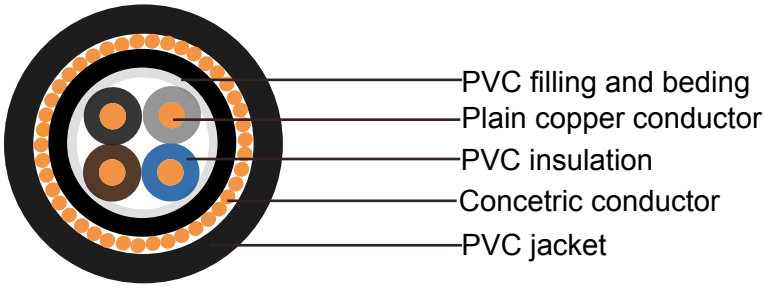
Application and Description

NYCY cables are used in power plants, industrial and switching installations, for street lighting, domestic power supply connections, in secondary distribution networks and other. These cables are preferentially used for underground application as well as for interior installation in room and cable ducts and for outdoor and applications, for indoor installations, in the open air, underground and in water where greater mechanical protection an protection against accidental contact is required if damaged.

Standard and Approval

VDE0276 part 603, CENELEC HD603 S1, IEC 60502

7 cores and above to VDE0276 part 627, CENELEC HD627 S1, IEC 60502



NYCY

NYCY

Cable Construction

- Solid plain copper conductor
- to DIN VDE 0295 cl. 1 and IEC 60228 cl. 1
- PVC insulation DIV4 to HD 603.1
- Color coded to DIN VDE 0293-308, 0276 part 603 or HD 186
- PVC filling and bedding
- Concentric conductor: copper wires and helical copper tape
- PVC outer jacket DMV5 to HD 603.1

Technical Characteristics

- Working voltage: 600/1000 volts
- Test voltage: 4000 volts
- Flexing bending radius: 15 x Ø
- Static bending radius: 12 x Ø
- Flexing temperature: -5º C to +50º C
- Fixed installation temperature: - 40º C to +70º C
- Short circuit temperature: +160º C
- Flame retardant: IEC 60332.1
- Insulation resistance: >100 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
8	1 x 10.0	re/10	11	216	280
6	1 x 16.0	re/16	12	336	440
16	2 x 1.5	re/1.5	13	52	205
14	2 x 2.5	re/2.5	13.5	80	270
12	2 x 4.0	re/4	15.5	123	360
10	2 x 6.0	re/6	17	182	435
8	2 x 10.0	re/10	19.5	312	590
6	2 x 16.0	re/16	20.5	489	820
16	3 x 1.5	re/1.5	13.5	66	225
14	3 x 2.5	re/2.5	14.5	104	290
12	3 x 4.0	re/4	16.5	161	400
10	3 x 6.0	re/6	17.5	240	510
8	3 x 10.0	re/10	20	408	850
6	3 x 16.0	re/16	23	643	1080
16	4 x 1.5	re/1.5	14.5	81	260
14	4 x 2.5	re/2.5	15.5	128	350
12	4 x 4.0	re/4	17	200	470
10	4 x 6.0	re/6	18.5	297	590
8	4 x 10.0	re/10	21	504	900
6	4 x 16.0	re/16	23	796	1250
16	5 x 1.5	re/1.5	15	95	330
14	5 x 2.5	re/2.5	16	152	400

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
12	5 x 4.0	re/4	19	238	560
10	5 x 6.0	re/6	21	355	710
8	5 x 10.0	re/10	23	600	1000
16	7 x 1.5	re/1.5	15	124	320
16	7 x 1.5	re/2.5	16	133	350
14	7 x 2.5	re/2.5	17.5	200	450
12	7 x 4.0	re/4	21	315	670
10	7 x 6.0	re/6	24	470	790
16	8 x 1.5	re/1.5	17	138	380
16	8 x 1.5	re/2.5	17	147	400
14	8 x 2.5	re/2.5	18	224	510
16	10 x 1.5	re/2.5	19	176	440
14	10 x 2.5	re/4	20.5	286	600
16	12 x 1.5	re/2.5	20	205	500
14	12 x 2.5	re/4	21	334	660
16	14 x 1.5	re/2.5	20.5	234	540
14	14 x 2.5	re/4	22	382	760
14	14 x 2.5	re/6	22.5	403	800
16	16 x 1.5	re/4	22	276	600
14	16 x 2.5	re/6	23	451	910
16	19 x 1.5	re/4	23	320	690
14	19 x 2.5	re/6	23.5	523	950
16	21 x 1.5	re/6	24	369	810
14	21 x 2.5	re/6	26	571	1100
16	24 x 1.5	re/6	26	413	860
14	24 x 2.5	re/10	28	696	1300
16	30 x 1.5	re/6	27	499	1230
14	30 x 2.5	re/10	30	840	1610
16	40 x 1.5	re/10	30	696	1590
14	40 x 2.5	re/10	35	1080	2100
16	52 x 1.5	re/10	32	869	1820
14	52 x 2.5	re/10	38	1368	2500
16	61 x 1.5	re/10	33	998	2000
14	61 x 2.5	re/10	40	1584	2850

NYCWY

Application and Description

NYCWY Power cables is for energy supply, preferably used for underground laying, especially in subscriber networks, power station as well as control impulses and test data. Overall, where increased electrical and also mechanical protection are required. These cables are installed in open air, in underground, in water, indoors and in cable ducts. The corrugated concentric conductor (CW) is allowed to use as neutral, protective or earth conductor. Simultaneously, this also is permitted to apply as a screen for example earthed-connected protection against contact. Due to the typical construction of corrugated concentric conductors (Ceander), are possible to obtain many more cable joints, without cutting any conductor. In that way the operating reliability is guaranteed.

Standard and Approval

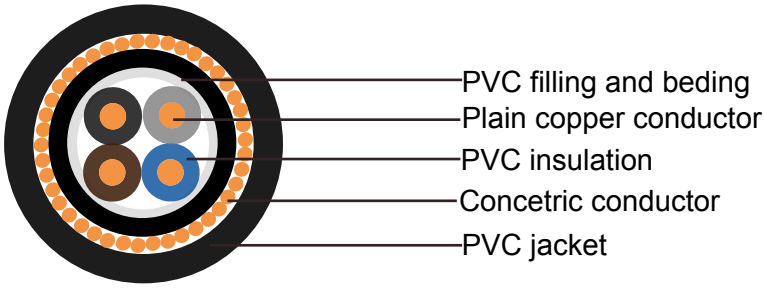
VDE0276 part 603, CENELEC HD603 S1, IEC 60502

Cable Construction

- Plain copper conductors solid or stranded versions, conductor types
  10-16 mm² round, solid conductors (re) alt.
  10-25 mm², stranded conductor (rm),
  35-240 mm², sector shaped conductor, stranded (sm)
- to DIN VDE 0295 cl. 1 or cl. 2, BS 6360 cl. 1, IEC 60228 and HD 383
- PVC insulation DIV4 to HD 603.1
- Color coded to DIN VDE 0293-308, 0276 part 603 or HD 186
- PVC bedding
- Concentric conductor: ceander shaped copper wires and helical copper tape
- PVC outer jacket DMV5 to HD 603.1

Technical Characteristics

- Working voltage: 600/1000 volts
- Test voltage: 4000 volts
- Flexing bending radius: 15 x Ø
- Static bending radius: 12 x Ø
- Flexing temperature: -5º C to +50º C
- Fixed installation temperature: - 40º C to +70º C
- Short circuit temperature: +160º C
- Flame retardant: IEC 60332.1
- Insulation resistance: >100 MΩ x km



NYCWY

NYCWY

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Stranded Conductor Type	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
8	2 x 10.0	re / 10.0	19	312	650
6	2 x 16.0	re / 16.0	21.5	489	850
4	2 x 25.0	rm / 25.0	24.5	763	1210
8	3 x 10.0	re / 10.0	19.5	408	730
6	3 x 16.0	re / 16.0	22	643	1000
4	3 x 25.0	rm / 16.0	26	902	1550
4	3 x 25.0	rm / 25.0	26	1003	1600
2	3 x 35.0	sm / 35.0	27.5	1402	1850
2	3 x 35.0	sm / 16.0	27	1190	1750
1	3 x 50.0	sm / 50.0	29.5	2000	2450

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Stranded Conductor Type	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cables Weight kg/km
1	3 x 50.0	sm / 25.0	29	1723	2250
2/0	3 x 70.0	sm / 70.0	34	2796	3350
2/0	3 x 70.0	sm / 35.0	33	2410	2950
3/0	3 x 95.0	sm / 95.0	38.5	3791	4550
3/0	3 x 95.0	sm / 50.0	38	3296	4100
4/0	3 x 120.0	sm / 70.0	41	4236	5050
4/0	3 x 120.0	sm / 120.0	42	4786	5550
300mcm	3 x 150.0	sm / 70.0	45	5100	6000
300mcm	3 x 150.0	sm / 150.0	46	5970	6900
350mcm	3 x 185.0	sm / 95.0	50	6383	7550
350mcm	3 x 185.0	sm / 185.0	51	7363	8500
500mcm	3 x 240.0	sm / 120.0	57	8242	9950
8	4 x 10.0	re / 10.0	20.5	504	890
6	4 x 16.0	re / 16.0	23.5	796	1250
4	4 x 25.0	rm / 16.0	28	1142	1800
2	4 x 35.0	sm / 16.0	29	1526	2050
1	4 x 50.0	sm / 25.0	33	2203	2700
2/0	4 x 70.0	sm / 35.0	37	3082	3750
3/0	4 x 95.0	sm / 50.0	43.5	4208	5000
4/0	4 x 120.0	sm / 70.0	47	5388	6350
300mcm	4 x 150.0	sm / 70.0	51	6540	7650
350mcm	4 x 185.0	sm / 95.0	56	8159	9350
500mcm	4 x 240.0	sm / 120.0	62.5	10546	11600

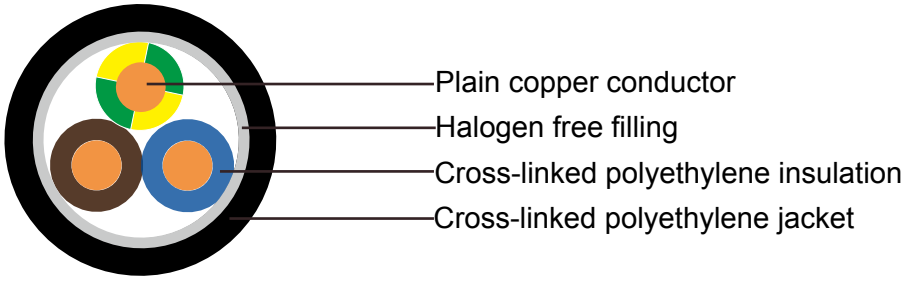
NHXMH

Application and Description

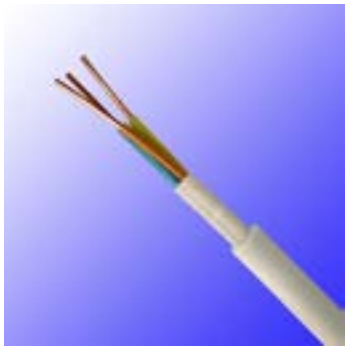
NHXMH cable is halogen free intended for fixed installation in dry and moist rooms as well as in masonry and concrete, in and under plaster; not for underground installation. NHXMH-J/O are especially used in buildings with a high concentration of persons or valuable property, where improved fire characteristics are needed. This product conforms to 73/23/EW G directive (low voltage directive) CE.

Standard and Approval

VDE 0250 (part 214), VDE 0482 (part 266-2-4, test type C), IEC 60228; IEC 60332-3-22; IEC 60754-1; IEC 60754-2, IEC 61034



NHXMH



NHXMH

Cable Construction

- Plain copper conductor, single conductor up to 10 mm² multi-conductor from 16-35 mm²
- To DIN VDE 0295 cl. 1 or 2, BS 6360 cl. 1 or 2 and IEC 60228 cl. 1 or 2
- Cross-linked polyethylene compound insulation 2XI1 to DIN VDE 0207 part 22
- Color coded to DIN VDE 0293-308
- Green-yellow grounding (3 conductors and above)
- Halogen free filling compound (not for single core cables)
- Flame-retardant, halogen free polyethylene compound jacket HM2 according to DIN VDE 0207 part 24

Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 2000 volts
- Minimum bending radius: single conductor 15 x Ø
- Minimum bending radius: multi conductor 12 x Ø
- Flexing temperature: -5º C to +50º C
- Fixed installation temperature: - 30º C to +70º C
- Short circuit temperature: +250º C
- Flame-retardant to DIN VDE 0482 part 266-2/HD 405.3/BS 4066 PT3/EN 50266-2/IEC 60332-3
- Low corrosiveness of combustion gases
  to DIN VDE 0482 part 267/BS 6425 PT2/EN 50267-2-2/IEC 60754-2
- Halogen-free to DIN VDE 0482 part 267/BS 6425 PT1/EN 50267-2-1/IEC 60754-1
- Smoke density to DIN VDE 0482 part 268/HD 606/BS 7622 PT1,PT2/EN 50268-1,-2/IEC 61034-1,-2
- Insulation resistance: >100 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Stranded Conductor Type	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
16	1 x 1.5	re	7	15	49
14	1 x 2.5	re	7.6	24	60
12	1 x 4.0	re	8.6	39	80
10	1 x 6.0	re	9.9	58	111
8	1 x 10.0	re	11.2	96	160
6	1 x 16.0	re	11.9	154	232
16	2 x 1.5	re	8.9	29	110
14	2 x 2.5	re	10	48	136
12	2 x 4.0	re	11.4	77	202
16	3 x 1.5	re	9.4	43	130
14	3 x 2.5	re	10.4	72	163
12	3 x 4.0	re	11.8	115	235
10	3 x 6.0	re	13.4	173	323
8	3 x 10.0	re	16	288	485
6	3 x 16.0	re	19.7	461	850
4	3 x 25.0	rm	24.3	720	1152

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Stranded Conductor Type	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
2	3 x 35.0	sm	27.2	1008	1503
16	4 x 1.5	re	10.2	58	151
14	4 x 2.5	re	11.3	96	200
12	4 x 4.0	re	13.3	154	300
10	4 x 6.0	re	14.8	230	400
8	4 x 10.0	re	17.4	384	603
6	4 x 16.0	re	21.6	615	940
4	4 x 25.0	rm	27	960	1432
2	4 x 35.0	sm	29.9	1344	1930
16	5 x 1.5	re	10.8	72	177
14	5 x 2.5	re	11.9	120	238
12	5 x 4.0	re	14.8	192	345
10	5 x 6.0	re	16	288	475
8	5 x 10.0	re	18.9	480	720
6	5 x 16.0	re	23.8	768	1142
4	5 x 25.0	rm	29	1200	1800
2	5 x 35.0	rm	32.7	1680	2490
16	7 x 1.5	re	11.4	101	209
14	7 x 2.5	re	13.5	168	300

NAYY-J/NAYY-O

Application and Description

NAYY is used in power plants industrial and switching installations, in secondary distribution networks and other. These cables are preferentially used in outdoor applications, for indoor installations, in the open air, underground and in water where mechanical damage is not anticipated.

Standard and Approval

VDE 0276 part 603, IEC 60502

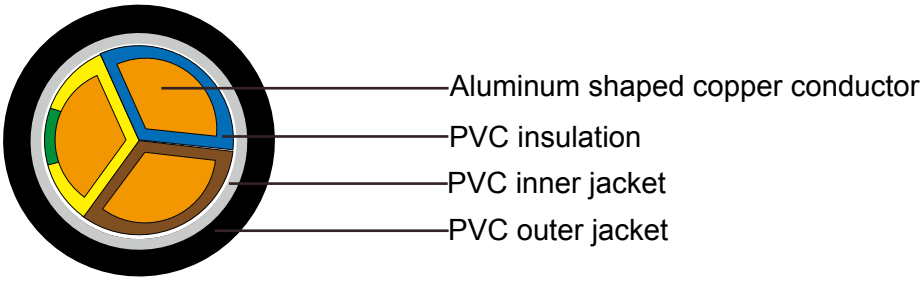
Cable Construction

- Aluminium Conductor
- VDE 0295 cl. 1 or cl. 2 (round and sector shaped), BS 6360/IEC 60228 cl. 1 or cl. 2
- PVC insulation type DIV4 acc. VDE0207
- Color coded to DIN VDE 0293
- PVC compound inner sheath
- PVC outer sheath type DMV5 acc. VDE 0207

Technical Data

- Working voltage: 600/1000 volts
- Test voltage: 4000 volts
- Minimum bending radius: 12 x Ø
- Flexing temperature: -5º C to +50º C
- Fixed installation temperature: - 30º C to +70º C
- Short circuit temperature: +160º C
- Flame-retardant to DIN VDE 0472 part 804 class B/IEC 60332-1

German Standard (VDE)



NAYY-J

NAYY-J

Cable Parameter

AWG	No. of Core and Nominal Cross Sectional # x mm²	Stranded Conductor Type	Nominal Overall Diameter mm	Aluminium weight kg/km	Nominal Cable Weight kg/km
NAYY-O					
4	1 x 25.0	re	12.2	70	190
2	1 x 35.0	re	13.1	97	229
1	1 x 50.0	re	14.5	131	288
1	1 x 50.0	rm	15.4	135	303
2/0	1 x 70.0	rm	17.1	195	385
3/0	1 x 95.0	rm	19.3	270	499
4/0	1 x 120.0	rm	20.8	341	589
300mcm	1 x 150.0	rm	22.6	419	705
350mcm	1 x 185.0	rm	24.9	526	862
500mcm	1 x 240.0	rm	27.7	690	1083
750mcm	1 x 300.0	rm	30.6	863	1325
-	1 x 400.0	rm	34.0	1109	1657
-	1 x 500.0	rm	38.0	1461	2172
4	2 x 25.0	re	22.4	140	685
2	2x 35.0	re	24.3	194	826
2	2 x 35.0	rm	25.4	199	880
1	2 x 50.0	re	27.3	261	1049
1	2 x 50.0	rm	29.1	269	1155
2/0	2 x 70.0	rm	33.1	390	1447
3/0	2 x 95.0	rm	37.9	539	1905
NAYY-J					
4	3 x 25.0	re	23.7	210	768
2	3 x 35.0	re	25.8	291	932
1	3 x 50.0	sm	30.9	404	1294
2/0	3 x 70.0	sm	31.2	584	1250
3/0	3 x 95.0	sm	35.8	809	1675
4/0	3 x 120.0	sm	38.0	1023	1964
300mcm	3 x 150.0	sm	41.8	1257	2365
350mcm	3 x 185.0	sm	45.7	1579	2913
500mcm	3 x 240.0	sm	51.1	2071	3693

AWG	No. of Core and Nominal Cross Sectional # x mm²	Stranded Conductor Type	Nominal Overall Diameter mm	Aluminium weight kg/km	Nominal Cable Weight kg/km
1	3 x 50.0+25	re+re	30.5	462	1310
1	3 x 50.0+25	sm+rm	31.2	474	1158
2/0	3 x 70.0+35	sm+rm	36.0	684	1537
3/0	3 x 95.0+50	sm+rm	40.2	944	1971
4/0	3x120.0+70	sm+rm	43.2	1218	2346
300mcm	3 x 150.0+70	sm+rm	48.0	1452	2839
350mcm	3 x 185.0+95	sm+rm	52.3	1848	3470
500mcm	3x240.0+120	sm+rm	58.7	2412	4399
750mcm	3x300.0+150	sm+rm	64.3	3008	5321
4	4 x 25.0	re	25.8	281	912
2	4 x 35.0	re	28.2	388	1111
1	4 x 50.0	se	31.2	539	1265
2/0	4 x 70.0	se	36.0	779	1658
3/0	4 x 95.0	se	40.2	1079	2139
4/0	4 x120.0	se	43.2	1364	2524
300mcm	4 x 150.0	se	48.0	1676	3123
350mcm	4 x 185.0	se	53.7	2105	4002
500mcm	4 x 240.0	se	58.7	2762	4848
750mcm	4 x 300.0	se	64.3	3452	5882
4	5 x 25.0	re	28.1	351	1072
2	5 x 35.0	re	30.9	485	1326
1	5 x 50.0	re	35.7	653	1771
4	5 x 25.0	rm	30.4	360	1183
2	5 x 35.0	rm	33.0	497	1456
1	5 x 50.0	rm	38.1	673	1919
2/0	5 x 70.0	rm	43.3	974	2452
3/0	5 x 95.0	rm	49.8	1349	3257

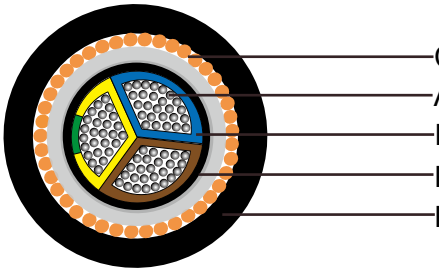
NAYCY

Application and Description

NAYCY is used in power plants, industrial and switching installations, for street lighting, domestic power supply connections, in secondary distribution networks and other. These cables are preferentially used for underground application as well as for interior installation in room and cable ducts and for outdoor and applications, for indoor installations, in the open air, underground and in water where greater mechanical protection against accidental contact is required if damaged

Standard and Approval

VDE 0276 part 603, IEC 60502



NAYCY

NAYCY

Cable Construction

- Aluminium Conductor
- VDE 0295 cl. 1 or cl. 2 (round and sector shaped), BS 6360/IEC 60228 cl. 1 or cl. 2
- PVC insulation type DIV4 acc. VDE0276
- Color coded to DIN VDE 0293
- Tapes and PVC compound inner sheath
- Concentric conductor: Copper wires and copper tapes
- PVC outer sheath type DMV5 acc. VDE 0276

Technical Data

- Working voltage: 600/1000 volts
- Test voltage: 4000 volts
- Minimum bending radius: 12 x Ø
- Flexing temperature: -5º C to +50º C
- Fixed installation temperature: - 30º C to +70º C
- Short circuit temperature: +160º C
- Flame-retardant to DIN VDE 0472 part 804 class B/IEC 60332-1
- Insulation resistance: >20 MΩ x km

Cable Parameter

AWG	No. of Core and Nominal Cross Sectional # x mm²	Stranded Conductor Type	Concentric conductor size mm²	Nominal Overall Diameter mm	Aluminium weight kg/km	Copper weight kg/km	Nominal Cable Weight kg/km
2	3 x 35.0	re	35	27.9	291	230	1143
1	3 x 50.0	re	50	31.5	392	335	1522
2/0	3 x 70.0	se	70	33.1	567	456	1675
3/0	3 x 95.0	se	95	36.9	785	665	2247
4/0	3 x 120.0	se	120	40.0	993	849	2715
2/0	3 x 70.0	sm	35	33.1	584	236	1489
2/0	3 x 70.0	sm	70	34.1	584	413	1648
3/0	3 x 95.0	sm	50	37.7	809	296	1974
3/0	3 x 95.0	sm	95	38.7	809	580	2253
4/0	3 x 120.0	sm	70	40.2	1023	432	2381
4/0	3 x 120.0	sm	120	40.9	1023	694	2654
300mcm	3 x 150.0	sm	70	44.2	1257	432	2798
300mcm	3 x 150.0	sm	150	45.4	1257	804	3164
350mcm	3 x 185.0	sm	95	48.6	1579	580	3498

(N)YM(St)-J

Application and Description

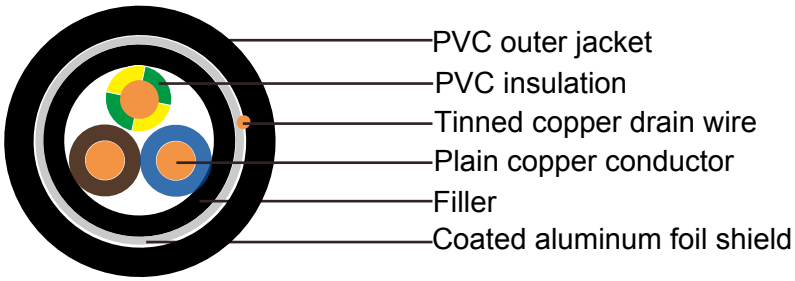
(N)YM(St)-J cables are made for an effective range of electromagnetic interference alternating fields by a static shield. This shielding is used for the installation in the computer sector, hospitals or industry measuring observation points with measuring instruments which are sensitive to interferences. These cables are also ideal for installation in living rooms of those people who are extremely sensitive to radiation. The cable is suitable for laying in, on and under plaster in dry and damp places as well as in concrete and masonry (installation in vibrating or stamped concrete excluded). Outdoor installation is only possible if the cable is not exposed to direct sunlight or if it is installed in cable conduits.

Standard and Approval

DIN VDE 0250, VDE 0482-332-1-2, DIN EN 60332-1-2 / IEC 60332-1

Cable Construction

- Solid plain copper conductor
- to DIN VDE 0295 cl. 1, BS 6360 cl. 1 and IEC 60228 cl
- PVC insulation TI1 to DIN VDE 0281 part 1
- Color coded to DIN VDE 0293-308
- Conductors stranded in layer
- Plastic filled inner jacket
- Coated aluminum foil shielding
- Solid tinned copper drain-wire
- High flexible PVC outer jacket type TM1, according to DIN VDE 0281 part 1



NYM(St)-J

NYM(St)-J

Technical Characteristics

- Working voltage: 300/500 volts
- Test voltage: 2000 volts
- Minimum bending radius: 4 x Ø
- Flexing temperature: +5º C to +70º C
- Fixed installation temperature: - 40º C to +70º C
- Flame retardant: IEC 60332.1
- 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 Thickness of Sheath mm	Drain Wire Size mm²	Nominal Overall Diameter mm	Nominal Copper Weight kg/km	Nominal Cable Weight kg/km
16(solid)	3 X1.5	0.6	1.4	1.5	10.5	58.0	154.0
16(solid)	4 X1.5	0.6	1.4	1.5	11.5	63.0	184.0
16(solid)	5 X1.5	0.6	1.4	1.5	12.0	77.0	208.0
16(solid)	7 X1.5	0.6	1.4	1.5	13.0	106.0	250.0
14(solid)	3 X2.5	0.7	1.4	1.5	12.0	77.0	217.0
14(solid)	4 X2.5	0.7	1.4	1.5	13.0	101.0	256.0
14(solid)	5 X2.5	0.7	1.4	1.5	13.5	125.0	280.0
12(solid)	3 X4	0.8	1.6	1.5	13.5	120.0	228.0
12(solid)	4 X4	0.8	1.6	1.5	14.5	159.0	359.0
12(solid)	5 X4	0.8	1.6	1.5	16.5	197.0	440.0
10(solid)	3 X6	0.8	1.6	1.5	15.0	178.0	378.0
10(solid)	4 X6	0.8	1.6	1.5	16.5	235.0	477.0
10(solid)	5 X6	0.8	1.6	1.5	17.5	293.0	565.0
8(solid)	5 X10	1.0	1.6	1.5	21.5	485.0	870

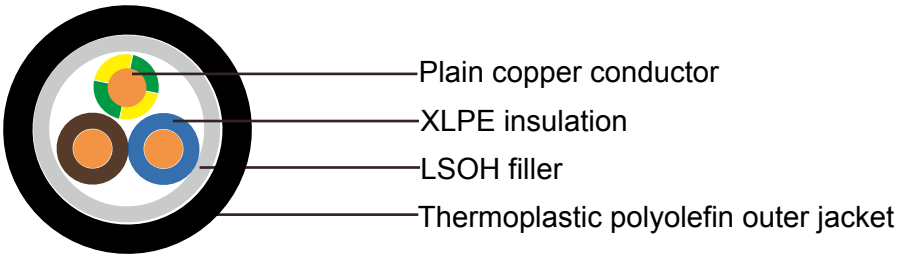
N2XH/ N2XCH

Application and Description

N2XH power cables with enhanced resistance to fire are used mostly in areas where harm to human life or material must be prevented in case of fire such as industrial and public buildings, hotels, subway systems, hospitals etc. These cables are suitable for dry and wet environments as well as for outer application but are not suitable for direct burial into earth or water.

Standard and Approval

VDE 0276 part 604, VDE 0482-266-2, DIN EN 60332-3 / EN50266-2

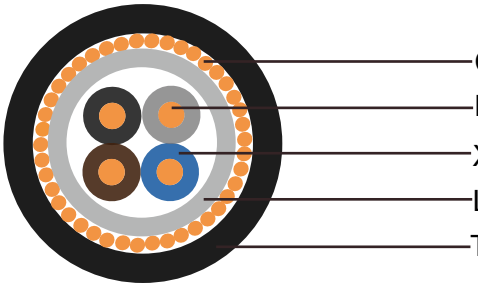


N2XH

N2XH

Cable Construction

- Solid or stranded plain copper conductor
- to DIN VDE 0295 cl. 1, cl. 2, BS 6360 cl. 1, cl. 2 and IEC 60228 cl 1, cl. 2
- XLPE insulation type 2XI1, to HD 604 S1
- Color coded to DIN VDE 0293-308
- Green-yellow ground conductor (3 conductors and above)
- Special LSOH filler
- For N2XCH version with concentric conductor:
  plain round copper wires and one or two transverse counter helix of copper tapes
-Thermoplastic polyolefin compound outer jacket type HM4, to HD 604 S1



N2XCH

N2XCH

Technical Characteristics

- Working voltage: 600/1000 volts
- Test voltage: 4000 volts
- Minimum bending radius: 12 x Ø
- Flexing temperature: +5º C to +50º C
- Fixed installation temperature: - 40º C to +90º C
- Short circuit temperature: +250º C
- Flame retardant: VDE 0482 part 266-2, DIN EN 50266-2 / IEC 60332-3
- Low corrosiveness of combustion gases to DIN VDE 0482 part 267/ EN 50267-2-2/IEC 60754-2
- Halogen-free to DIN VDE 0482 part 267 /EN 50267-2-1/IEC 60754-1
- Smoke density to DIN VDE 0482 part 268/HD 606/BS 7622 PT1,PT2/EN 50268-1,-2/IEC 61034-1,-2
- Insulation resistance: >20 MΩ x km

Cable Parameter

N2XH

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Insulation Thickness mm	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
12	1x4	re	0.7	7.5	38	140
10	1x6	re	0.7	8.0	58	160
8	1x10	re	0.7	8.8	96	210
6	1x16	rm	0.7	9.7	154	270
4	1x25	rm	0.9	10.6	240	380
2	1x35	rm	0.9	12.7	336	490
1	1x50	rm	1.0	14.1	480	620

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Insulation Thickness mm	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
2/0	1x70	rm	1.1	16.0	672	830
3/0	1x95	rm	1.1	17.9	912	1200
4/0	1x120	rm	1.2	19.5	1152	1500
300mcm	1x150	rm	1.4	21.6	1440	1700
350mcm	1x185	rm	1.6	23.8	1776	2200
500mcm	1x240	rm	1.7	25.3	2304	2750
750mcm	1x300	rm	1.8	29.0	2880	3300
-	1x400	rm	2.0	37.0	3840	4420
-	1x500	rm	2.2	40.0	4800	5460
16	2x1.5	re	0.7	11.1	29	180
14	2x2.5	re	0.7	11.9	48	210
12	2x4	re	0.7	12.7	77	270
10	2x6	re	0.7	13.7	115	340
8	2x10	re	0.7	15.3	192	450
6	2x16	rm	0.7	17.3	307	600
4	2x25	rm	0.9	21.1	480	980
16	3x1.5	re	0.7	11.5	43	179
14	3x2.5	re	0.7	12.4	72	225
12	3x4	re	0.7	13.3	115	291
10	3x6	re	0.7	14.4	173	371
8	3x10	re	0.7	16.1	288	523
6	3x16	rm	0.7	18.2	461	773
4	3x25	rm	0.9	22.3	720	1200
2	3x35	rm	0.9	24.9	1008	1600
1	3x50	rm	1.0	26.0	1440	1800
16	4x1.5	re	0.7	12.2	58	208
14	4x2.5	re	0.7	13.2	96	265
12	4x4	re	0.7	14.2	154	352
10	4x6	re	0.7	15.4	230	454
8	4x10	re	0.7	17.5	384	647
6	4x16	rm	0.7	19.7	614	964
4	4x25	rm	0.9	24.5	960	1446
2	4x35	rm	0.9	27.1	1344	1906
1	4x50	sm	1.0	29.6	1920	2530
2/0	4x70	sm	1.1	32.9	2688	3418
3/0	4x95	sm	1.1	37.5	3648	4574
4/0	4x120	sm	1.2	41.5	4608	5300
300mcm	4x150	sm	1.4	46.3	5760	6350
350mcm	4x185	sm	1.6	49.0	7104	7800
500mcm	4x240	sm	1.7	54.0	9216	10300
16	5x1.5	re	0.7	13.1	72	243
14	5x2.5	re	0.7	14.2	120	310
12	5x4	re	0.7	15.3	192	413
10	5x6	re	0.7	16.6	288	536
8	5x10	re	0.7	19.0	480	776
6	5x16	rm	0.7	21.4	768	1165
4	5x25	rm	0.9	28.0	1200	1766
16	7x1.5	re	0.7	12.7	101	206
14	7x2.5	re	0.7	13.5	168	287
12	7x4	re	0.7	17.0	269	530
16	10x1.5	re	0.7	13.8	144	287
14	10x2.5	re	0.7	15.9	240	472
16	12x1.5	re	0.7	15.2	173	328

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Insulation Thickness mm	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
14	12x2.5	re	0.7	17.3	288	472
12	12x4	re	0.7	21.0	461	820
16	14x1.5	re	0.7	15.7	202	383
14	14x2.5	re	0.7	17.6	336	670
16	19x1.5	re	0.7	17.3	274	484
14	19x2.5	re	0.7	21.3	456	840
16	24x1.5	re	0.7	20.2	346	603
14	24x2.5	re	0.7	24.6	576	1050
16	30x1.5	re	0.7	22.6	432	730
14	30x2.5	re	0.7	24.5	720	1230
16	40x1.5	re	0.7	26.2	576	1200

N2XCH

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Concentric conductor cross section mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
16	1x1.5	re	1.5	7.9	27	98
14	1x2.5	re	2.5	8.5	47	122
12	1x4.0	re	4	9.4	74	163
10	1x6.0	re	6	9.9	108	203
8	1x10	re	10	11.3	182	286
6	1x16	re	16	12.8	297	410
4	1x25	rm	25	12.9	465	606
2	1x35	rm	35	16.4	654	807
16	2x1.5	re	1.5	13	45	230
14	2x2.5	re	2.5	13.7	68	273
12	2x4.0	re	4	15.9	110	375
10	2x6.0	re	6	17.1	164	458
8	2x10	re	10	19.1	274	619
6	2x16	re	16	21	435	841
4	2x25	rm	25	25.1	703	1276
2	2x35	rm	35	27.8	980	1642
1	2x50	rm	50	31.5	1343	2193
16	3x1.5	re	1.5	13.5	56	252
14	3x2.5	re	2.5	14.3	90	305
12	3x4.0	re	4	16.6	147	425
10	3x6.0	re	6	17.7	243	528
8	3x10	re	10	20	365	724
6	3x16	re	16	22.1	580	999
4	3x25	rm	16	27.8	855	1440
4	3x25	rm	25	26.6	938	1524
2	3x35	rm	16	29.1	1127	1813
2	3x35	rm	35	29.4	1317	1987
1	3x50	rm	25	32.7	1581	2415
2	3x35	sm	35	27.1	1339	1644
2	3x35	sm	16	26.6	1161	1627
1	3x50	sm	25	29.6	1593	2174
1	3x50	sm	50	30.6	1819	2260

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Concentric conductor Size mm²	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
2/0	3x70	sm	35	33.6	2265	2932
2/0	3x70	sm	70	34.1	2584	3097
3/0	3x95	sm	50	38.2	3151	4004
3/0	3x95	sm	95	39.4	3692	4336
4/0	3x120	sm	70	38.3	4038	4925
4/0	3x120	sm	120	41.6	4443	5124
300	3x150	sm	70	44.7	4827	5890
300	3x150	sm	150	45.8	5543	6352
350	3x185	sm	95	49	6051	7329
400	3x240	sm	120	54.5	7881	9399
16	4x1.5	re	1.5	14.3	70	284
14	4x2.5	re	2.5	16.3	136	382
12	4x4.0	re	4	17.8	183	494
10	4x6.0	re	6	19	297	620
8	4x10	re	10	21.5	457	860
6	4x16	re	16	23.8	725	1196
4	4x25	rm	16	29	1090	1764
2	4x35	rm	16	32	1456	2246
1	4x50	rm	25	36.4	1998	3024
2	4x35	sm	16	29.8	1495	2060
1	4x50	sm	25	33.1	2044	2730
2/0	4x70	sm	35	38.4	2911	3758
3/0	4x95	sm	50	42.6	4041	5054
4/0	4x120	sm	70	43.1	5162	6246
300	4x150	sm	70	50.7	6214	7548
350	4x185	sm	95	55.3	7826	9374
400	4x240	sm	120	62.3	10150	12124
16	7X1.5	re	2.5	14.5	132.0	320.0
14	7X2.5	re	2.5	15.1	200.0	400.0
12	7X4	re	4	18.1	316.0	580.0
16	10X1.5	re	2.5	17.2	177.0	420.0
14	10X2.5	re	4	18.9	287.0	550.0
16	12X1.5	re	2.5	18.4	204.0	460.0
14	12X2.5	re	4	19.2	335.0	610.0
12	12X4	re	6	22.6	528.0	910.0
16	16X1.5	re	4	20.0	275.0	686.0
14	16X2.5	re	6	20.9	450.0	805.0
16	21X1.5	re	6	22.6	370.0	766.0
14	21X2.5	re	6	25.2	572.0	1015.0
16	24X1.5	re	6	23.2	412.0	800.0
14	24X2.5	re	10	26.1	695.0	1100.0
16	30X1.5	re	6	24.3	500.0	930.0
14	30X2.5	re	10	28.0	842.0	1290.0

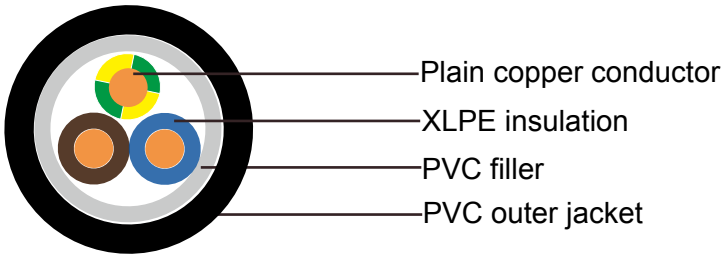
N2XY

Application and Description

N2XY power cables with insulation of cross-linked polyethylene (XLPE) are designed for distribution and supply of consumers with nominal voltage 0.6/1 kV and frequency 50 Hz in industrial installations and urban networks. They are suitable for fixed indoor assembly in cable ducts and conduits, over shelves and grilles, directly underground in ditch and outdoor under shelters providing the conditions determined for the type of cable.

Standard and Approval

VDE-0276 Part-603, HD 603.1, IEC 60502, VDE 0482-332-1-2, DIN EN 60332-1-2 / IEC 60332-1



N2XY

N2XY

Cable Construction

- Solid or stranded, plain copper conductor
- to DIN VDE 0295 cl. 1 or cl. 2, BS 6360 cl. 1 or cl. 2 and IEC 60228 cl. 1 or cl. 2
- XLPE insulation type DIX3 acc. to VDE 0276-603/5G
- Color coded to DIN VDE 0293(HD 308)
- PVC filler
- PVC outer jacket DMV6 to HD 603.1

German Standard (VDE)

Technical Characteristics

- Working voltage: 600/1000 volts
- Test voltage: 4000 volts
- Minimum bending radius: 15 x Ø
- Flexing temperature: -5º C to +70º C
- Fixed installation temperature: - 30º C to +70º C
- Short circuit temperature: +250º C
- Flame retardant: IEC 60332.1
- Insulation resistance: >20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Thickness of insulation mm	Thickness of sheath mm	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
6	1x16	rm	0.7	1.8	11.0	144	230
4	1x25	rm	0.9	1.8	12.5	228	340
2	1x35	rm	0.9	1.8	13.5	317	445
1	1x50	rm	1.0	1,8	15.5	454	605
2/0	1x70	rm	1.1	1.8	17.0	656	800
3/0	1x95	rm	1.1	1.8	19.0	911	1065
4/0	1x120	rm	1.2	1.8	21.0	1147	1320
300mcm	1x150	rm	1.4	1.8	23.0	1415	1610
350mcm	1x185	rm	1.6	1.8	25.5	1770	1925
500mcm	1x240	rm	1.7	1.8	28.5	2327	2483
750mcm	1x300	rm	1.8	1.8	31.0	2887	3058
-	1x400	rm	2.0	1.9	35.0	3692	3887
-	1x500	rm	2.2	2.0	38.5	4725	4937
6	2x16	rm	0.7	1.8	19.5	294	645
4	2x25	rm	0.9	1.8	23.0	466	945
2	2x35	rm	0.9	2.0	25.5	646	1235
1	2x50	rm	1.0	2.0	29.0	924	1680
6	3x16	rm	0.7	1.8	20.5	441	805
4	3x25	rm	0.9	2.0	24.5	699	1220
2	3x35	rm	0.9	2.0	27.0	969	1575
1	3x50	sm	1.0	2.0	24.5	1387	1765
2/0	3x70	sm	1.1	2.0	28.0	1897	2350
3/0	3x95	sm	1.1	2.0	31.0	2631	3145

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Thickness of insulation mm	Thickness of sheath mm	Nominal Overall Diameter mm	Copper Weight kg / km	Cable Weight kg / km
4/0	3x120	sm	1.2	2.0	34.0	3324	3915
300mcm	3x150	sm	1.4	2.2	37.0	4084	4820
350mcm	3x185	sm	1.6	2.2	42.0	5123	6045
500mcm	3x240	sm	1.7	2.6	47.5	6733	7885
12	3x4.0+2.5	re	0.7/0.7	1.8	13.5	135	328
10	3x6.0+4	re	0.7/0.7	1.8	15.0	205	445
8	3x10+6	re	0.7/0.7	1.8	17.0	338	611
6	3x16+10	re	0.7/0.7	1.8	20.	541	868
4	3x25+16	rm	0.9/0.7	2.0	27.0	846	1405
2	3x35+16	rm	0.9/0.7	2.0	29.5	1116	1765
1	3x50+25	sm/rm	1.0/0.9	2.0	28.5	1620	2075
2/0	3x70+35	sm/rm	1.1/0.9	2.0	33.0	2220	2650
3/0	3x95+50	sm/rm	1.1/1.0	2.2	36.5	3093	3615
4/0	3x120+70	sm/rm	1.2/1.1	2.2	39.0	3956	4690
300mcm	3x150+70	sm/rm	1.4/1.1	2.2	44.0	4716	5630
350mcm	3x185+95	sm/rm	1.6/1.1	2.6	48.5	6000	7150
500mcm	3x240+120	sm/rm	1.7/1.2	3.0	57.0	7841	9305
6	4x16	rm	0.7	1.8	22.0	588	985
4	4x25	rm	0.9	2.0	27.0	932	1500
2	4x35	rm	0.9	2.0	29.5	1292	1955
1	4x50	sm	1.0	2.0	28.5	1850	2320
2/0	4x70	sm	1.1	2.0	33.0	2530	3100
3/0	4x95	sm	1.1	2.2	36.5	3508	4180
4/0	4x120	sm	1.2	2.2	39.0	4433	5200
300mcm	4x150	sm	1.4	2.2	44.0	5446	6410
350mcm	4x185	sm	1.6	2.6	48.5	6831	8050

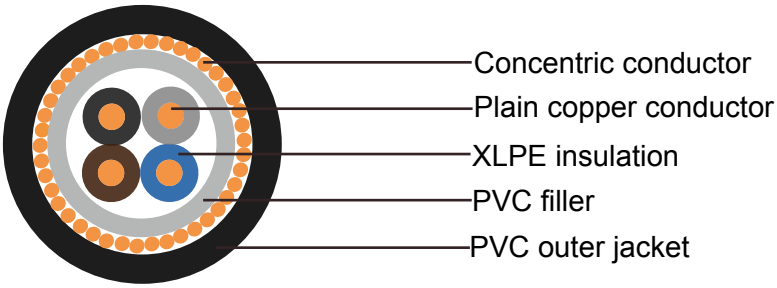
N2XCY

Application and Description

In indoor installation, in cable ducts outdoor and underground for power station, industrial plants and switching as well as local supply systems. Used for indoor installations for wiring of apparatus panels and switch board. Not to be used outdoors or in wet surroundings.

Standard and Approval

IEC 60502 -1, VDE 0276-603



N2XCY

N2XCY

Cable Construction

- Solid or stranded, plain copper conductor
- to DIN VDE 0295 cl. 1 or cl. 2, BS 6360 cl. 1 or cl. 2 and IEC 60228 cl. 1 or cl. 2
- XLPE insulation type DIX3 acc. to VDE 0276-603/5G
- Color coded to DIN VDE 0293(HD 308)
- PVC filler
- Concentric conductor: Copper wires and copper tapes
- PVC outer jacket DMV5 to HD 603.1

Technical Characteristics

- Working voltage: 600/1000 volts
- Test voltage: 4000 volts
- Minimum bending radius: 15 x Ø
- Flexing temperature: -5º C to +70º C
- Fixed installation temperature: - 30º C to +70º C
- Short circuit temperature: +250º C
- Flame retardant: IEC 60332.1
- Insulation resistance: >20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Thickness of insulation mm	Thickness of sheath mm	Concentric conductor size mm²	Nominal Overall Diameter mm	Cable Weight kg / km
16	1x1.5	re/rm	0.7	1.8	1.5	9.7	114
14	1x2.5	re/rm	0.7	1.8	2.5	10.2	135
12	1x4	re/rm	0.7	1.8	4	10.8	170
10	1x6	re/rm	0.7	1.8	6	11.3	214
8	1x10	re/rm	0.7	1.8	10	12.4	304
6	1x16	re/rm	0.7	1.8	16	13.8	431
4	1x25	rm	0.9	1.8	16	15.5	548
2	1x35	rm	0.9	1.8	16	16.6	650
1	1x50	rm	1	1.8	25	18.8	892
2/0	1x70	rm	1.1	1.8	35	21.0	1207
3/0	1x95	rm	1.1	1.8	50	23.5	1600
4/0	1x120	rm	1.2	1.8	70	26.0	2045
300mcm	1x150	rm	1.4	1.8	70	28.0	2320
350mcm	1x185	rm	1.6	1.8	95	30.5	2942
500mcm	1x240	rm	1.7	1.9	120	34.0	3761
750mcm	1x300	rm	1.8	2.1	150	37.0	4591
-	1x400	rm	2	2	185	41.5	5830
-	1x500	rm	2.2	2.3	240	46.0	7450
-	1x630	rm	2.4	2.5	300	52.0	9561
-	1x800	rm	0.7	1.8	400	58.0	12290
16	2x1.5	re/rm	0.7	1.8	1.5	13.0	198
14	2x2.5	re/rm	0.7	1.8	2.5	13.9	239
12	2x4	re/rm	0.7	1.8	4	15.0	304
10	2x6	re/rm	0.7	1.8	6	16.2	384
8	2x10	rm	0.7	1.8	10	18.1	546
6	2x16	rm	0.7	1.8	16	21.0	766
4	2x25	rm	0.9	1.8	16	24.0	1030
2	2x35	rm	0.9	1.8	16	26.0	1283

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Thickness of insulation mm	Thickness of sheath mm	Concentric conductor size mm²	Nominal Overall Diameter mm	Cable Weight kg / km
1	2x50	rm	1	1.9	25	29.5	1631
2/0	2x70	rm	1.1	2	35	33.0	2247
3/0	2x95	rm	1.1	2..2	50	37.5	3028
4/0	2x120	rm	1.2	2.3	70	42.0	3817
300mcm	2x150	rm	1.4	2.5	70	46.0	4526
350mcm	2x185	rm	1.6	2.6	95	51.0	5694
500mcm	2x240	rm	1.7	2.8	120	57.0	7302
750mcm	2x300	rm	1.8	3.1	150	63.0	9049
16	3x1.5	re/rm	0.7	1.8	1.5	13.5	218
14	3x2.5	re/rm	0.7	1.8	2.5	14.5	270
12	3x4	re/rm	0.7	1.8	4	15.7	348
10	3x6	re/rm	0.7	1.8	6	16.9	446
8	3x10	rm	0.7	1.8	10	19.0	645
6	3x16	rm	0.7	1.8	16	22.0	916
4	3x25	rm	0.9	1.8	16	25.0	1260
2	3x35	rm	0.9	1.8	16	27.5	1597
1	3x50	sm	1	1.9	25	30.0	1919
2/0	3x70	sm	1.1	1.9	35	34.0	2697
3/0	3x95	sm	1.1	2	50	37.5	3608
4/0	3x120	sm	1.2	2.2	70	41.5	4531
300mcm	3x150	sm	1.4	2.3	70	46.5	5459
350mcm	3x185	sm	1.6	2.5	95	51.0	6820
500mcm	3x240	sm	1.7	2.6	120	57.5	8834
750mcm	3x300	sm	1.8	2.8	150	62.5	10899
16	4x1.5	re/rm	0.7	1.8	1.5	14.3	250
14	4x2.5	re/rm	0.7	1.8	2.5	15.4	315
12	4x4	re/rm	0.7	1.8	4	16.8	406
10	4x6	re/rm	0.7	1.8	6	18.1	523
8	4x10	rm	0.7	1.8	10	20.5	772
6	4x16	rm	0.7	1.8	16	23.5	1100
4	4x25	rm	0.9	1.8	16	27.5	1541
2	4x35	rm	0.9	1.9	16	30.0	1976
1	4x50	sm	1	2	25	33.5	2428
2/0	4x70	sm	1.1	2.1	35	38.5	3418
3/0	4x95	sm	1.1	2.2	50	42.5	4583
4/0	4x120	sm	1.2	2.4	70	48.0	5807
300mcm	4x150	sm	1.4	2.5	70	54.0	6992
350mcm	4x185	sm	1.6	2.7	95	58.5	8704
500mcm	4x240	sm	1.7	2.8	120	65.5	11283
750mcm	4x300	sm	1.8	3	150	71.5	13920
16	5x1.5	re/rm	0.7	1.8	1.5	15.2	291
14	5x2.5	re/rm	0.7	1.8	2.5	16.4	365
12	5x4	re/rm	0.7	1.8	4	17.9	476
10	5x6	re/rm	0.7	1.8	6	19.5	617
8	5x10	rm	0.7	1.8	10	22.5	909
6	5x16	rm	0.7	1.8	16	25.5	1300
4	5x25	rm	0.9	1.8	16	29.5	1844
2	5x35	rm	0.9	1.9	16	32.5	2390
1	5x50	rm	1.1	2.2	25	37.0	3120

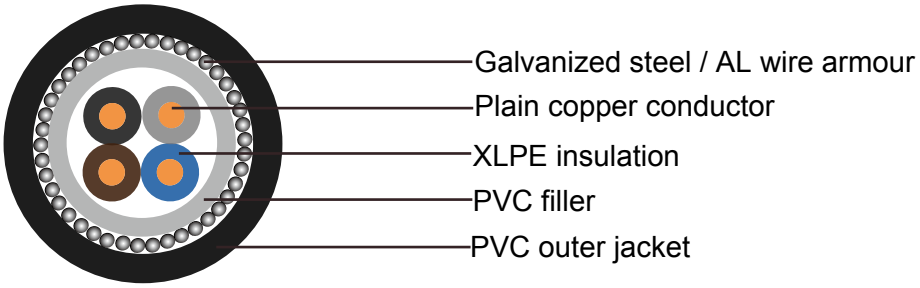
N2XRY

Application and Description

N2XRY is used for indoor, ourdoor and underground installation in ducts and in the open where better mechanical protection is required, or for higher tensile stress during installation and operation. Suitable for comparatively high ambient temperature due to high maximum permissible conductor temperature.

Standard and Approval

IEC 60502-1, VDE 0276-604, BS5467



N2XRY

N2XRY

Cable Construction

- Solid or stranded, plain copper conductor
- to DIN VDE 0295 cl. 1 or cl. 2, BS 6360 cl. 1 or cl. 2 and IEC 60228 cl. 1 or cl. 2
- Cross-linked polyethylene 2XI1 acc. to VDE 0276-604
- Color coded to DIN VDE 0293(HD 308)
- PVC filler
- Galvanized round steel / aluminum wire armour
- PVC outer jacket DMV5 to HD 603.1

German Standard (VDE)

Technical Characteristics

- Working voltage: 600/1000 volts
- Test voltage: 3500 volts
- Minimum bending radius: 15 x Ø
- Flexing temperature: -5º C to +70º C
- Fixed installation temperature: - 30º C to +70º C
- Short circuit temperature: +250º C
- Flame retardant: IEC 60332.1
- Insulation resistance: >20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Thickness of insulation mm	Thickness of sheath mm	Nominal Overall Diameter mm	Cable Weight kg / km
4	1x25	rm	0.9	1.8	16.6	503
2	1x35	rm	0.9	1.8	17.7	612
1	1x50	rm	1	1.8	19.5	783
2/0	1x70	rm	1.1	1.8	21.5	1014
3/0	1x95	rm	1.1	1.8	23.5	1280
4/0	1x120	rm	1.2	1.8	26.0	1575
300mcm	1x150	rm	1.4	1.8	27.5	1872
350mcm	1x185	rm	1.6	1.8	30.0	2294
500mcm	1x240	rm	1.7	1.9	33.0	2923
750mcm	1x300	rm	1.8	2.1	36.0	3509
-	1x400	rm	2	2	40.5	4534
-	1x500	rm	2.2	2.3	45.0	5691
-	1x630	rm	2.4	2.5	49.5	7267
-	1x800	rm	0.7	1.8	56.5	9271
16	2x1.5	re/rm	0.7	1.8	13.6	325
14	2x2.5	re/rm	0.7	1.8	14.5	379
12	2x4	re/rm	0.7	1.8	15.7	448
10	2x6	re/rm	0.7	1.8	16.8	530
8	2x10	rm	0.7	1.8	19.4	783
6	2x16	rm	0.7	1.8	22.0	982
4	2x25	rm	0.9	1.8	25.5	1447
2	2x35	rm	0.9	1.8	28.0	1765
1	2x50	rm	1	1.9	30.5	2106
2/0	2x70	rm	1.1	2	35.0	2765
3/0	2x95	rm	1.1	2..2	39.5	3746

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Thickness of insulation mm	Thickness of sheath mm	Nominal Overall Diameter mm	Cable Weight kg / km
4/0	2x120	rm	1.2	2.3	43.5	4465
300mcm	2x150	rm	1.4	2.5	47.5	5303
350mcm	2x185	rm	1.6	2.6	54.0	6890
500mcm	2x240	rm	1.7	2.8	59.5	8463
750mcm	2x300	rm	1.8	3.1	65.0	10151
16	3x1.5	re/rm	0.7	1.8	14.1	351
14	3x2.5	re/rm	0.7	1.8	15.1	415
12	3x4	re/rm	0.7	1.8	16.3	503
10	3x6	re/rm	0.7	1.8	17.5	603
8	3x10	rm	0.7	1.8	20.5	903
6	3x16	rm	0.7	1.8	23.0	1161
4	3x25	rm	0.9	1.8	27.0	1709
2	3x35	rm	0.9	1.8	29.5	2127
1	3x50	sm	1	1.9	31.5	2424
2/0	3x70	sm	1.1	1.9	36.5	3438
3/0	3x95	sm	1.1	2	40.0	4343
4/0	3x120	sm	1.2	2.2	43.5	5172
300mcm	3x150	sm	1.4	2.3	49.5	6675
350mcm	3x185	sm	1.6	2.5	54.0	7977
500mcm	3x240	sm	1.7	2.6	60.0	9995
750mcm	3x300	sm	1.8	2.8	65.0	11990
16	4x1.5	re/rm	0.7	1.8	14.9	395
14	4x2.5	re/rm	0.7	1.8	16.0	470
12	4x4	re/rm	0.7	1.8	17.4	575
10	4x6	re/rm	0.7	1.8	19.5	798
8	4x10	rm	0.7	1.8	22.0	1058
6	4x16	rm	0.7	1.8	25.5	1518
4	4x25	rm	0.9	1.8	29.0	2055
2	4x35	rm	0.9	1.9	32.0	2585
1	4x50	sm	1	2	35.5	3040
2/0	4x70	sm	1.1	2.1	41.0	4305
3/0	4x95	sm	1.1	2.2	45.0	5476
4/0	4x120	sm	1.2	2.4	51.5	7064
300mcm	4x150	sm	1.4	2.5	57.5	8536
350mcm	4x185	sm	1.6	2.7	61.5	10189
500mcm	4x240	sm	1.7	2.8	68.0	12772
750mcm	4x300	sm	1.8	3	73.5	15380
16	5x1.5	re/rm	0.7	1.8	15.8	441
14	5x2.5	re/rm	0.7	1.8	17.0	535
12	5x4	re/rm	0.7	1.8	19.3	768
10	5x6	re/rm	0.7	1.8	21.0	921
8	5x10	rm	0.7	1.8	23.5	1235
6	5x16	rm	0.7	1.8	27.0	1765
4	5x25	rm	0.9	1.8	31.5	2423
2	5x35	rm	0.9	1.9	34.5	3057
1	5x50	rm	1.1	2.2	40.0	4099

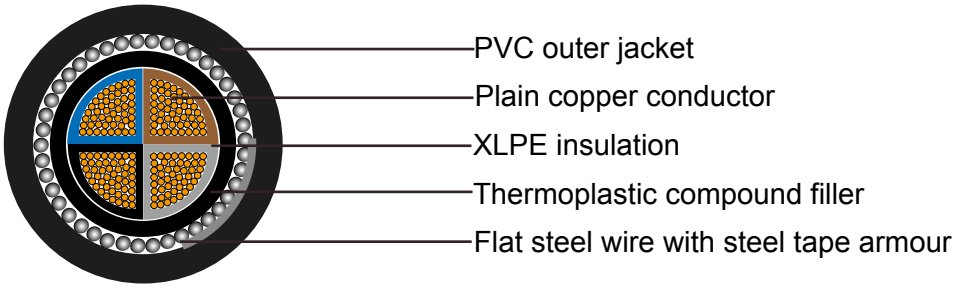
N2XFGY/ NA2XFGY

Application and Description

N2XFGY/ NA2XFGY cables are for lying in earth, indoors, in ducts, in the open air, in the water, when additional mechanical protection is required when cable is exposed to mechanical tensile strain during laying and use. For use in mines ac-cording to Technical standards for electrical plants, equipments and installations in mines, as well as hori-zontal and vertical installation in places where there is a height difference in mines, including methane holes.

Standard and Approval

IEC 60502-1, VDE 0276-603



N2XFGY

N2XFGY

Cable Construction

- Stranded plain copper/aluminum conductor
- to DIN VDE 0295 cl. 2, IEC 60228 cl. 2
- Cross-linked polyethylene 2XI1 acc. to VDE 0276-603
- Color coded to DIN VDE 0293(HD 308)
- Thermoplastic compound filler
- Flat steel wire with steel tape armour
- PVC outer jacket DMV5 to HD 603.1

Technical Characteristics

- Working voltage: 600/1000 volts
- Test voltage: 3500 volts
- Minimum bending radius: 12 x Ø
- Flexing temperature: -5º C to +70º C
- Fixed installation temperature: - 30º C to +70º C
- Short circuit temperature: +250º C
- Flame retardant: IEC 60332.1
- Insulation resistance: >20 MΩ x km

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Nominal Overall Diameter mm	Copper Weight kg / km	Copper Cable Weight kg / km	AL Weight kg / km	AL Cable Weight kg / km
4	3x25	rm	25,5	720	1617	218	1149
2	3x35	rm	28,0	1008	2010	305	1354
1	3x50	sm	28,0	1440	2210	435	1309
2/0	3x70	sm	31,5	2016	2925	609	1628
3/0	3x95	sm	35,0	2736	3835	827	2023
4/0	3x120	sm	38,0	3456	4662	1044	2367
300mcm	3x150	sm	42,0	4320	5586	1305	2787
350mcm	3x185	sm	46,5	5328	6900	1610	3372
500mcm	3x240	sm	51,5	6912	8732	2088	4057
4	3x25+16	rm	26,5	874	1807	263	1230
2	3x35+16	rm	29,0	1162	2193	351	1426
1	3x50+25	sm	31,0	1680	2593	507	1534
2/0	3x70+35	sm	35,5	2352	3476	711	1958
3/0	3x95+50	sm	38,5	3216	4461	972	2350
4/0	3x120+70	sm	42,0	4128	5494	1247	2766
300mcm	3X150+70	sm	47,0	4992	6586	1508	3339
350mcm	3X185+95	sm	51,0	6240	8095	1886	3962
500mcm	3X240+120	sm	58,0	8064	10400	2436	4964
10	4x6	rm	18,0	230	753	70	603

German Standard (VDE)

AWG	No. of Cores x Nominal Cross Sectional Area # x mm²	Conductor Type	Nominal Overall Diameter mm	Copper Weight kg / km	Copper Cable Weight kg / km	AL Weight kg / km	AL Cable Weight kg / km
8	4x10	rm	20,0	384	1006	116	755
6	4x16	rm	23,5	614	1374	186	910
4	4x25	rm	28,0	960	1946	290	1319
2	4x35	rm	30,5	1344	2447	406	1572
1	4x50	sm	31,0	1920	2780	580	1574
2/0	4x70	sm	35,0	2688	3729	812	1992
3/0	4x95	sm	38,5	3648	4870	1102	2440
4/0	4x120	sm	41,5	4608	5949	1392	2873
300mcm	4x150	sm	47,0	5760	7264	1740	3513
350mcm	4x185	sm	51,0	7104	8878	2148	4147
500mcm	4x240	sm	58,0	9216	11436	2784	5170
10	5x6	rm	19,5	288	837	88	686
8	5x10	rm	21,5	480	1170	145	857
6	5x16	rm	25,5	768	1628	233	1057
4	5x25	rm	30,0	1200	2325	363	1570

Technical Reference

Cable Symbols of Different Standards

Cables acc. to VDE 0281/0282

1. Relationship to Standards

H	Harmonized type (HAR)
A	authorised national standards

2. Nominal voltage

01	100 V
03	300/300 V
05	300/500 V
07	450/750 V

3. Insulating materials

V	PVC
V2	PVC (90 oC)
V3	PVC cold-resistant
B	EPR-rubber (90 °C)
G	EVA
E	PE
R	Natural or synthetic rubber
S	Silicon rubber
X	XLPE
Z	LSOH -compound

4. Sheathing materials

V	PVC
V2	PVC (90 oC)
V3	PVC cold-resistant
V4	PVC cross-linked
V5	PVC oil-resistant
R	natural or synthetic rubber
N	chloroprene rubber
N2	chloroprene rubber for welding cables

Cables acc. to VDE 0815/16

1. Relationship to Standards

A	outdoor cable
G	mining cable
J	**installation cable**
L	equipment wire
S	switch cable
Li	equipment wire with fine stranded conductor
RD	rhenomatic-cable
RE	instrumentation cable

2. Additional specifications

B	lightning protection
J	Indukction protection
E	Industry-electronics

3. Insulating materials

Y	PVC
2Y	PE
02Y	cell-PE
02YS	foam-Skin
5Y	PTFE (teflon)
6Y	FEP (teflon)
7Y	ETFE (teflon)
P	paper

4. Special construction

F	petrol jelly filler
L	aluminium sheath
LD	corrugated Al.-sheath
(L)	laminated aluminium sheath
C	copper braided screen

N4	chloroprene rubber heat- resistant
N8	chloroprene rubber(water-resistant)
J	glass fibre braid
T	textil braid
T6	textil over each core
Q	polyurethan (PUR)
Q4	polyamide
Z	LSOH -compound

5. Special constructions

C	concentric copper conductor
C4	copper braided screen
H	flat , divisible cords
H2	flat , non divisible cords
H6	flat , non divisible cords for elevators
H7	two-layer insulating jacket
H8	helical cord

6. Conductor form

U	round, solid
R	round, stranded
K	fine stranded, (fixed installation)
F	fine stranded (flexibel cords)
H	fine stranded (highly fexible)
Y	tensil conductor
D	fine stranded for welding cables
E	fine stranded for welding cables (highly fexible)

7. Protective conductor

X	without green/yellow core
G	with green/yellow core
(St)	screen of plastic coated Al-foil
(K)	copper tape screen
(B)	amouring
(Z)	steel wire amouring
(Zg)	strain-bearing element with glass yarn bundles
(ZN)	strain-bearing element non metalic
W	corrugated steel sheath
M	lead sheath
Mz	special lead sheath
b	amouring
c	jute jacket+ bituminous compund
E	compund with embedded tape

5. Sheathing materials

see 3.insulation materials

6. Stranding elements

1	single core
2	pair
4	quat

7. Typ of stranding

F	star quad (railway)
St	star quad with phantom circiut (long distance)
St I	star quad (long distance)
St III	star quad (subscriber line)
TF	star quad for carrier frequencyy
PiMF	pair in metal foil
DIMF	triple in metal foil
ViMF	quad in metal foil

8. Stranding layout

Lg	stranding in layer
Bd	stranding in unit

German Standard (VDE)

Cables acc. to VDE 0250

1. Relationship to Standards

N	according to VDE
(N)/X	with reference to VDE

2. Insulating materials

Y	PVC
4Y	polyamide
5Y	PTFE (teflon)
6Y	FEP (teflon)
9Y	polypropylen
11Y	polyurethan (PUR)
2X	XLPE
G	elastomer
2G	silicon
3G	EPR-rubber
4G	EVA
5G	polychloroprene
HX	LSOH

3. Cable description

A	single-core
D	solid wire
AF	single-core, fine stranded
F	flexible wire for fittings
L	fluorescent tube cable
LH	connecting cable for light mechanical load
MH	connecting cable for middle mechanical load
SH	connecting cable for heavy mechanical load
SSH	connecting cable for special mechanical load
SL	control/welding cable
S	control cable

Cables acc. to VDE 0276

1. Relationship to Standards

N	according to VDE
(N)	with reference to VDE

2. Conductor

-	copper
A	aluminium

3. Insulating materials

Y	PVC
2Y	PE
2X	XLPE
H	LSOH compound

4. Concentric conductor

C	Concentric copper conductor
CW	Concentric copper conductor reversing lay up

5. Screen

S	common copper shield
SE	individually screened cores

6. Metal sheath

K	lead

7. Inner protection or plastic sheath

see 3.insulation materials

8. Armouring

F	flat steel wire
R	round steel wire
G	steel tape

9. Outer sheath

see 3.insulation materials

10. Protective conductor

-J	with green/yellow core

LS	light control cable
FL	flat cable
Si	silicon cable
Z	twin cable
GL	glass fibre
Li	stranded wires acc to. VDE 812
LiF	fine stranded wires acc. to VDE 812

4. Special constructions

T	strength member
ö	oil-resistant
u	flame resistant
w	heat-/weather resistant
FE	fire resistant
C	screen
S	steel wire armouring

5. Sheathing materials

see 2.insulation materials

P	Polyurethan

6. Protective conductor

-J	with green/yellow core
-O	without green/yellow core

-O	without green/yellow core

11. Conductor form

RE	round, solid
RM	round, stranded
SE	sector shaped, solid
SM	sector shaped, stranded

Conductor Structure

Copper stranded conductor structure according to DIN VDE 0295 and IEC 60228

Stranded conductor structure according to DIN VDE 0295 has been defined in conformity with IEC 60228 for conductor class 2 column 1, conductor class 5 column 3 and conductor Class 6 Column 4 as from 0.5 mm^2. The diameters of the individual wires of each conductor must not exceed the maximum value stated for each nominal cross-section, see table below.

Cross section	Multi-wire round-section conductor VDE 0295 class 2 [2] column 1	Multi-wire flexible strands Standard structure column 2	Fine-wired flexible strands VDE 0295 class 5 [1] column 3	Ultra-fine-wired flexible strands			
				VDE 0295 class 6 [1] column 4	Standard structure		
					column 5	column 6	column 7
0.035		7x0.08					
0.05						14x0.07	26x0.05
0.08							40x0.05
0.09					7x0.124	24x0.07*	
0.14			18x0.10	18x0.10	18x0.10	36x0.07	72x0.05
0.25			14x0.15	32x0.10	32x0.10	65x0.07	128x0.05
0.34		7x0.25	19x0.15	42x0.10	42x0.10	88x0.07	174x0.05
0.38		7x0.27	12x0.20	21x0.15	48x0.10	100x0.07	194x0.05
0.5	7x0.30	7x0.30	16x0.20	28x0.15	64x0.10	131x0.07	256x0.05
0.75	7x0.37	7x0.37	24x0.20	42x0.15	96x0.10	195x0.07	384x0.05
1.0	7x0.43	7x0.43	32x0.20	56x0.15	128x0.10	260x0.07	512x0.05
1.5	7x0.52	7x0.52	30x0.25	84x0.15	192x0.10	392x0.07	768x0.05
2.5	7x0.67	19x0.41	50x0.25	140x0.15	320x0.10	651x0.07	1280x0.05
4	7x0.85	19x0.52	56x0.30	224x0.15	512x0.10	1040x0.07	
6	7x1.05	19x0.64	84x0.30	192x0.20	768x0.10	1560x0.07	
10	7x1.35	49x0.51	80x0.40	320x0.20	1280x0.10	2600x0.07	
16	7x1.70	49x0.65	128x0.40	512x0.20	2048x0.10	4116x0.07	
25	7x2.13	84x0.62	200x0.40	800x0.20	3200x0.10	6370x0.07	
35	7x2.52	133x0.58	280x0.40	1120x0.20	4410x0.10	9100x0.07	
50	19x1.83	133x0.69	400x0.40	705x0.30			
70	19x2.17	189x0.69	356x0.50	990x0.30			
95	19x2.52	259x0.69	485x0.50	1340x0.30			
120	37x2.03	336x0.67	614x0.50	1690x0.30			

Cross section	Multi-wire round-section conductor VDE 0295 class 2 [2] column 1	Multi-wire flexible strands Standard structure column 2	Fine-wired flexible strands VDE 0295 class 5 [1] column 3	Ultra-fine-wired flexible strands			
				VDE 0295 class 6 [1] column 4	Standard structure		
					column 5	column 6	column 7
150	37x2.27	392x0.69	765x0.50	2123x0.30			
185	37x2.52	494x0.69	944x0.50	1470x0.40			
240	61x2.24	627x0.70	1225x0.50	1905x0.40			
300	61x2.50	790x0.70	1530x0.50	2385x0.40			
400	61x2.89		2034x0.50				
500	61x3.23		1768x0.60				
630	91x2.97		2228x0.60				

* Alternative 19x0.08

Note:

[1] DIN VDE 0295, in conformity with IEC 60228, specifies only the maximum individual-wire diameter for Conductor Class 5 and Conductor Class 6.

The number of wires is in no case binding.

[2] For Conductor Class 2, however, the minimum number of individual wires in the round-section conductor and not the individual-wire diameter applies.

The required maximum values for conductor resistance in each conductor at 20° C are definitive. The respective nominal cross-section for the specified maximum values must not be exceeded.

Explanatory notes on ultra-fine-wired stranded conductors, Class 6

Column 4 Standard flexible structure as per DIN VDE

Column 5 High flexibility

Column 6 Ultra-high flexibility

Column 7 Extreme flexibility

AWG wires (stranded conductors)

AWG	AWG-structure n x AWG	Cable structure n x wire-Ø mm	Conductor cross-section mm^2	Outer conductor diameter mm	Conductor resistance Ohm/km	Conductor weight kg/km
36	solid	solid	0.013	0.127	1460.0	0.116
36	7/44	7 x 0.05	0.014	0.152	1271.0	0.125
34	solid	solid	0.020	0.160	918.0	0.178
34	7/42	7 x 0.064	0.022	0.192	777.0	0.196
32	solid	solid	0.032	0.203	571.0	0.284
32	7/40	7 x 0.078	0.034	0.203	538.0	0.302
32	19/44	19 x 0.05	0.037	0.229	448.0	0.329
30	solid	solid	0.051	0.254	365.0	0.45
30	7/38	7 x 0.102	0.057	0.305	339.0	0.507
30	19/42	19 x 0.064	0.061	0.305	286.7	0.543
28	solid	solid	0.080	0.330	232.0	0.71
28	7/36	7 x 0.127	0.087	0.381	213.0	0.774
28	19/40	19 x 0.078	0.091	0.406	186.0	0.81
27	7/35	7 x 0.142	0.111	0.457	179.0	0.988
26	solid	solid	0.128	0.404	143.0	1.14
26	10/36	10 x 0.127	0.127	0.533	137.0	1.13
26	19/38	19 x 0.102	0.155	0.508	113.0	1.38
26	7/34	7 x 0.160	0.141	0.483	122.0	1.25
24	solid	solid	0.205	0.511	89.4	1.82
24	7/32	7 x 0.203	0.227	0.610	76.4	2.02
24	10/34	10 x 0.160	0.201	0.582	85.6	1.79
24	19/36	19 x 0.127	0.241	0.610	69.2	2.14
24	41/40	41 x 0.078	0.196	0.582	84.0	1.74
22	solid	solid	0.324	0.643	55.3	2.88
22	7/30	7 x 0.254	0.355	0.762	48.4	3.16
22	19/34	19 x 0.160	0.382	0.787	45.1	3.40
22	26/36	26 x 0.127	0.330	0.762	52.3	2.94
20	solid	solid	0.519	0.813	34.6	4.61
20	7/28	7 x 0.320	0.562	0.965	33.8	5.00
20	10/30	10 x 0.254	0.507	0.889	33.9	4.51
20	19/32	19 x 0.203	0.615	0.940	28.3	5.47
20	26/34	26 x 0.160	0.523	0.914	33.0	4.65
20	41/36	41 x 0.127	0.520	0.914	32.9	4.63
18	solid	solid	0.823	1.020	21.8	7.32
18	7/26	7 x 0.404	0.897	1.219	19.2	7.98
18	16/30	16 x 0.254	0.811	1.194	21.3	7.22

AWG	AWG-structure n x AWG	Cable structure n x wire-Ø mm	Conductor cross-section mm^2	Outer conductor diameter mm	Conductor resistance Ohm/km	Conductor weight kg/km
18	19/30	19 x 0.254	0.963	1.245	17.9	8.57
18	41/34	41 x 0.160	0.824	1.194	20.9	7.33
18	65/36	65 x 0.127	0.823	1.194	21.0	7.32
16	solid	solid	1.310	1.290	13.7	11.66
16	7/24	7 x 0.511	1.440	1.524	12.0	12.81
16	65/34	65 x 0.160	1.310	1.499	13.2	11.65
16	26/30	26 x 0.254	1.317	1.499	13.1	11.72
16	19/29	19 x 0.287	1.229	1.473	14.0	10.94
16	105/36	105 x 0.127	1.330	1.499	13.1	11.84
14	solid	solid	2.080	1.630	8.6	18.51
14	7/22	7 x 0.643	2.238	1.854	7.6	19.92
14	19/27	19 x 0.361	1.945	1.854	8.9	17.31
14	41/30	41 x 0.254	2.078	1.854	8.3	18.49
14	105/34	105 x 0.160	2.111	1.854	8.2	18.79
12	solid	solid	3.31	2.05	5.4	29.46
12	7/20	7 x 0.813	3.63	2.438	4.8	32.30
12	19/25	19 x 0.455	3.09	2.369	5.6	27.50
12	65/30	65 x 0.254	3.292	2.413	5.7	29.29
12	165/34	165 x 0.60	3.316	2.413	5.2	29.51
10	solid	solid	5.26	2.59	3.4	46.81
10	37/26	37 x 0.404	4.74	2.921	3.6	42.18
10	49/27	49 x 0.363	5.068	2.946	3.6	45.10
10	105/30	105 x 0.254	5.317	2.946	3.2	47.32
8	49/25	49 x 0.455	7.963	3.734	2.2	70.87
8	133/29	133 x 0.287	8.604	3.734	2.0	76.57
8	655/36	655 x 0.127	8.297	3.734	2.0	73.84
4	133/25	133 x 0.455	21.625	5.898	0.80	192.46
4	259/27	259 x 0.363	26.804	5.898	0.66	238.55
4	1666/36	1666 x 0.127	21.104	5.898	0.82	187.82
2	133/23	133 x 0.574	34.416	7.417	0.50	306.30
2	259/26	259 x 0.404	33.201	7.417	0.52	295.49
2	665/30	665 x 0.254	33.696	7.417	0.52	299.89
2	2646/36	2646 x 0.127	33.518	7.417	0.52	298.31
1	133/22	133 x 0.643	43.187	8.331	0.40	384.37
1	259/2	259 x 0.455	42.112	8.331	0.41	374.80
1	817/30	817 x 0.254	41.397	8.331	0.42	368.43
1	2109/34	2109 x 0.160	42.403	8.331	0.41	377.39
1/0	133/21	133 x 0.724	54.75	9.347	0.31	487.28

AWG	AWG-structure n x AWG	Cable structure n x wire-Ø mm	Conductor cross-section mm^2	Outer conductor diameter mm	Conductor resistance Ohm/km	Conductor weight kg/km
1/0	259/24	259 x 0.511	53.116	9.347	0.32	472.73
2/0	133/20	133 x 0.813	69.043	10.516	0.25	614.48
2/0	259/23	259 x 0.574	67.021	10.516	0.25	596.49
3/0	259/22	259 x 0.643	84.102	11.786	0.20	748.51
3/0	427/24	427 x 0.511	87.570	11.786	0.19	779.37
4/0	259/21	259 x 0.724	106.626	13.259	0.16	948.97
4/0	427/23	427 x 0.574	110.494	13.259	0.15	983.39

AWG wires (solid conductors)

AWG	Wire Diameter mm	AWG	Wire Diameter mm	AWG	Wire Diameter mm
44	0.050	26	0.404	10	2.588
41	0.070	25	0.455	9	2.906
40	0.079	24	0.511	8	3.268
39	0.089	23	0.574	7	3.665
38	0.102	22	0.643	6	4.115
37	0.114	21	0.724	5	4.620
36	0.127	20	0.813	4	5.189
35	0.142	19	0.912	3	5.827
34	0.160	18	1.024	2	6.543
33	0.180	17	1.151	1	7.348
32	0.203	16	1.290	1/0	8.252
31	0.226	15	1.450	2/0	9.266
30	0.254	14	1.628	3/0	10.404
29	0.287	13	1.829	4/0	11.684
28	0.320	12	2.052		
27	0.363	11	2.304		

Conductor Resistance

Conductor resistance data according to VDE 0295 and IEC 60228

Conductor dimensions	High-voltage cables						Welding cable Cu conductors	
	Cu conductors				Al conductors consisting of bright wires			
Nominal cross-section mm²	consisting of tin-plated wires		consisting of bright wires				consisting of bright wires	consisting of tin-plated wires
	Class 1 Class 2	Class 5 Class 6	Class 1 Class 2	Class 5 Class 6	Class 1	Class 2		
	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
0.05	-	~380.0	-	~360.0	-	-	-	-
0.08	-	~240.0	-	~230.0	-	-	-	-
0.09	-	~230.0	-	~215.0	-	-	-	-
0.14	-	~140.0	-	~138.0	-	-	-	-
0.22	-	~96.8	-	~95.0	-	-	-	-
0.25	-	~79.3	-	~77.8	-	-	-	-
0.34	-	~57.1	-	~56.0	-	-	-	-
0.5	36.7	40.1	36.0	39.0	-	-	-	-
0.75	24.8	26.7	24.5	26.0	-	.-	-	-
1.0	18.2	20.0	18.1	19.5	-	-	-	-
1.5	12.2	13.7	12.1	13.3	-	-	-	-
2.5	7.56	8.21	7.41	7.98	-	-	-	-
4.0	4.70	5.09	4.61	4.95	-	-	-	-
6.0	3.11	3.39	3.08	3.30	-	-	-	-
10.0	1.84	1.95	1.83	1.91	-	-	-	-
16.0	1.16	1.24	1.15	1.21	-	1.91[2)]	1.16	1.19
25.0	0.734	0.795	0.727[1)]	0.780	1.20	1.20	0.758	0.780
35.0	0.529	0.565	0.524[1)]	0.554	0.868	0.868	0.536	0.552
50.0	0.391	0.393	0.387[1)]	0.386	0.641	0.641	0.379	0.390
70.0	0.270	0.277	0.268[1)]	0.272	0.443	0.443	0.268	0.276
95.0	0.195	0.210	0.193[1)]	0.206	0.320	0.320	0.198	0.204
120.0	0.154	0.164	0.153[1)]	0.161	0.253	0.253	0.155	0.159
150.0	0.126	0.132	0.124[1)]	0.129	0.206	0.206	0.125	0.129
185.0	0.100	0.108	0.0991	0.106	0.164	0.164	0.102	0.105
240.0	0.0762	0.0817	0.0754	0.0801	0.125	0.125	-	-
300.0	0.0607	0.0654	0.0601	0.0641	0.100	0.100	-	-
400.0	0.0475	0.0495	0.0470	0.0486	-	0.0778	-	-
500.0	0.0369	0.0391	0.0366	0.0384	-	0.0605	-	-
630.0	0.0286	0.0292	0.0283	0.0287	-	0.0469	-	-

[1)] applies to mineral insulated Class 1 cables

[2)] applies only to conductors with reduced cross-section for NAYCWY 4 x 25/16

Colour Codes according to Different Standards

Colour code according to DIN 47100

a. With colour repetition from core no. 45 and above

The insulation of the conductor gives the first basic colour. The codes of the multi-coloured identification are combined with a basic colour and colour rings. The second and third colour is printed on the basic colour as a form of ring.

The ring width is 2–3 mm. A less unsharpness on the edge of the identification colour and a minor pledging of both half-rings are permitted.

The cores are to be counted continuously through all layers at the same direction, beginning with the outer layer towards inside

Conductor No.	Base Colour	1st Ring	2nd Ring	Conductor No.	Base Colour	1st Ring	2nd Ring
1	white			32	yellow	blue	
2	brown			33	green	red	
3	green			34	yellow	red	
4	yellow			35	green	black	
5	gray			36	yellow	black	
6	pink			37	gray	blue	
7	blue			38	pink	blue	
8	red			39	gray	red	
9	black			40	pink	red	
10	violet			41	gray	black	
11	gray	pink		42	pink	black	
12	red	blue		43	blue	black	
13	white	green		44	red	black	
14	brown	green		45	white		
15	white	yellow		46	brown		
16	yellow	brown		47	green		
17	white	gray		48	yellow		
18	gray	brown		49	gray		
19	white	pink		50	pink		
20	pink	brown		51	blue		
21	white	blue		52	red		
22	brown	blue		53	black		

23	white	red		54	violet		
24	brown	red		55	gray	pink	
25	white	black		56	red	blue	
26	brown	black		57	white	green	
27	gray	green		58	brown	green	
28	yellow	gray		59	white	yellow	
29	pink	green		60	yellow	brown	
30	yellow	pink		61	white	gray	
31	green	blue					

b. Without colour repetition

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

c. DIN 47100 for twisted pairs

Each pair comprises one a-core and one b-core. From 23 pairs upwards the marking repeats for the first time and from 45 pairs upwards for the second time. The first colour is always the basic colour of the core and the second colour is printed in rings.

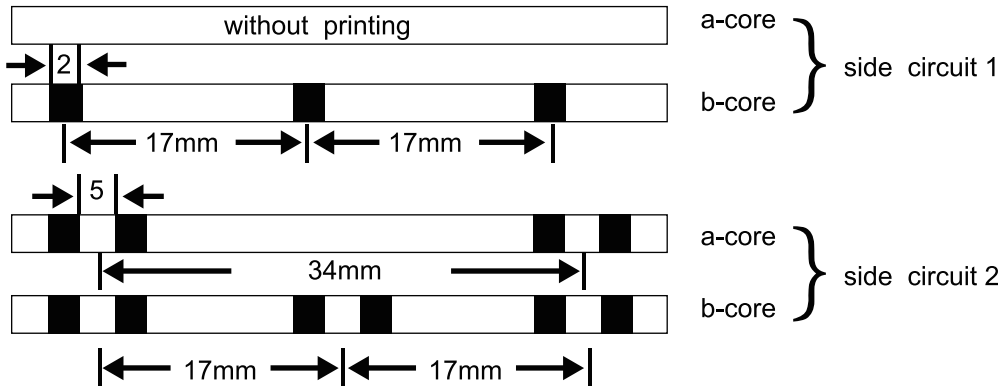
Pair No.	Colour a-core		Colour b-core		Pair No.	Colour a-core		Colour b-core	
	basic color	ring color	basic color	ring color		basic color	ring color	basic color	ring color
1	white		brown		13	white	black	brown	black
2	green		yellow		14	grey	green	yellow	grey
3	grey		pink		15	pink	green	yellow	pink
4	blue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

Colour code according to VDE 0815

a. Colour Code for the following Installation Cable Types:

J-YY . . . Bd, J-HH . . . Bd, J-Y(St)Y . . . Bd, J-H(St)H . . . Bd and J-2Y(St)Y . . . Bd

The Insulating coverings of single cores of a star quad are marked with black rings:



The cores of 5 star quads of a sub unit are counted according to the sequence of basic colours:

Quad 1: basic colour of all cores red

Quad 2: basic colour of all cores green

Quad 3: basic colour of all cores grey

Quad 4: basic colour of all cores yellow

Quad 5: basic colour of all cores white

The marker of units are identified with a red helix, the others with white or uncoloured.

The quads of sub units are counted according to the sequence of basic colours.

The units are counted continuously through all layers beginning in the inner layer.

b. Colour Code for the following Installation Cable Types:

J-Y(St)Y . . . Lg (Pairs in layers)

2-paired installation cables are stranded to a star quad

circuit 1 a-core red, b-core black

circuit 2 a-core white, b-core yellow

4- and multi-paired installation cables

a-core of 1st pair in each layer is red, all other pairs are white.

b-core blue, yellow, green, brown, black in continual repetition.

Counting: from outside to inside.

c. Colour Code for the following Installation Cable Types:

JE-Y(St)Y . . . Bd, JE-LiYCY . . . Bd, JE-H(St) . . . and JE-HCH . . . Bd (Industrial Electronic Cables)

Pair-colour-identification

The insulating cores are identified with different basic colours which are repeated in the same sequence in each unit.

Basic colours of pairs

Pair	1	2	3	4
a-core	blue	grey	green	white
b-core	red	yellow	brown	black

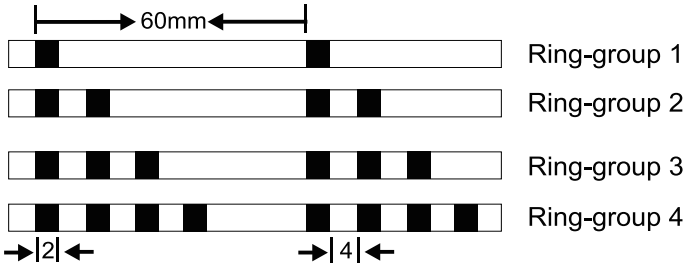
2-paired cables: the cores are stranded to a star quad:

circuit 1: a-core blue circuit 2: a-core grey

b-core red b-core yellow

Each unit is assigned to one group of ring. All cores in each unit are marked with coloured rings and ring-groups.Counting direction in all units is from inside to outside.

Ring-colour and Ring-group



Unit-identification

Cables with more than 12 units contain coloured plastic helix in addition to ring code.

Unit-No	Ring-Colour	Ring-Group	Colour identification tape	Unit-No	Ring-Colour	Ring-Group	Colour identification tape
1	pink	I		11	violent	III	
2	pink	II		12	violent	IV	
3	pink	III		13	pink	I	blue
4	pink	IV		14	pink	II	blue
5	orange	I		15	pink	III	blue
6	orange	II		16	pink	IV	blue
7	orange	III		17	orange	I	red
8	orange	IV		18	orange	II	red
9	violent	I		19	orange	III	red
10	violent	II		20	orange	IV	red

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 Retardancy

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 retardancy (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 Resistance (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.

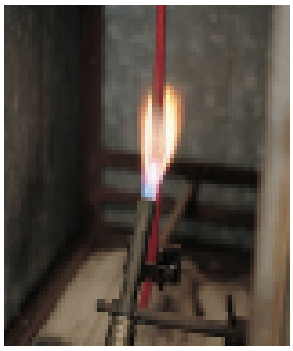
Fire Performance Class

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 IEC 60332-1, IEC 60332-2, IEC 60332-3. IEC 60332-1 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 IEC 60332-1 for single wires.

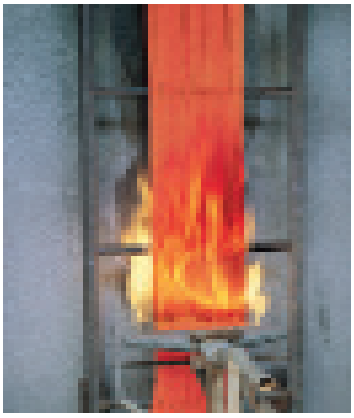
VDE 0482-265-2-1/IEC 60332-1/BS 4066-1/EN 50265/CEI 20-35/1 (Flame Test On Single Vertical Insulated Wires/Cables)

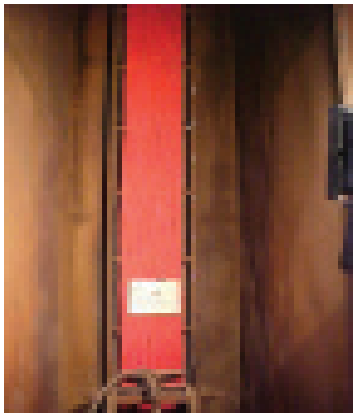


This test details a method of test for the assessment of the flame propagation characteristics of a single wire or cable. In this test, a 60cm cable sample is fixed vertically inside a metallic box and a 175mm long flame is applied at 45mm from a gas burner placed at 450mm from the top at the upper portion. 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.

VDE 0482-266-2-4/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.



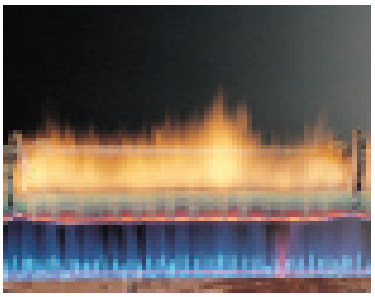


Standard for Fire Resistance

Fire resistant cables are designed for maintaining circuit integrity during a fire. The IEC and the BS adopted two different standards, namely the IEC 60331 and BS 6387.Comparatively speaking, the fire performance requirement for BS 6387 is more demanding.

DIN VDE 0472-814/VDE 0482-1/IEC 60331/CEI 20-36 Fire Resistance Test

A cable sample is placed over a gas burner and connected to an electrical supply at its rated voltage. Fire is applied for a period of 3 hours. The temperature on the cable is between 750°C and 800°C. After 3 hours, the fire and the power is switched off. 12 hours later, the cable sample is reenergized and must maintain its circuit integrity.



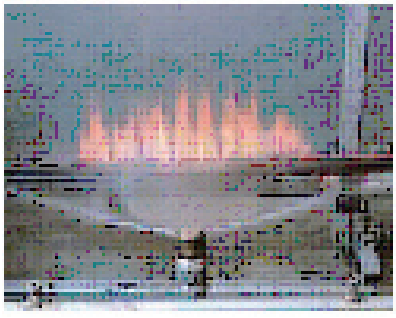
BS6387 Fire Resistance Test

BS6387 specifies the performance requirements for cables required to maintain circuit integrity under fire conditions. It details the following methods to categorize the cables according to cable withstand capacities.

Resistance to fire alone - the cables is tested by gas burner flame while passing a current at its rate voltage. Four survival categories are defined Cat A (3 hours at 650°C) ,Cat B (3 hours at 750°C), Cat C (3 hours at 950°C), and Cat S (20 minutes at 950°C).

Resistance to fire with water spray - a new sample of cable is exposed to flame at 650°C for 15 minutes while passing a current at its rated voltage and then the spray is turned on to give exposure to both fire and water for a further 15 minutes. A single survival category W is defined if the cables surpassed the testing requirement.

Resistance to fire with mechanical shock - the final requirement is mechanical shock damage. A fresh sample is mounted on a backing panel in an S bend and is exposed to flames while the backing panel is stuck with a steel bar with the same diameter as the cables under test every 30 seconds for 15 minutes. The cables will be tested under the following temperatures: X (650°C/15min), Y(750°C/15min) and Z (950°C/15min). The highest standard for BS 6387 is CWZ.



Standard for Halogen & Smoke Emission, Corrosivity & Toxicity

IEC 60754-1/BS6425-1/CEI 20-37/2-1 (Emission Of Halogens)

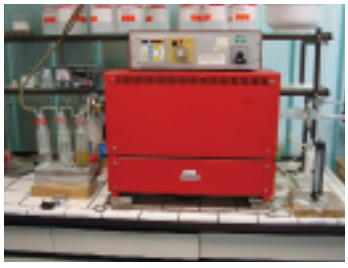
This specifies a test for determination of the amount of halogen acid gas other than the hydrofluoric acid evolved during combustion of compound based on halogenated polymers and compounds containing halogenated additives taken from cable constructions. Halogen includes Florine, Chlorine, Bromine, Iodine and Astatine. All these elements are toxic by their nature. In this test, when the burner is heated to 800℃,1g sample is placed inside and the HCL is absorbed into water inside the chamber fed with air flow. The water is then tested with its acidity. If the hydrochloric acid yield is less than 5 mg/g, the cable specimen is categorized as LSZH. If the hydrochloric acid yield lies between 5mg/g to 15mg/g, the cable specimen is categorized as LSF. IEC60754-1 cannot be used for measuring the exact HCL yield if the yield is less than 5mg/g. This test cannot determine if the cable is 100% halogen free or not. To determine if the cable specimen is 100% halogen free or not, IEC60754-2 has to be employed.

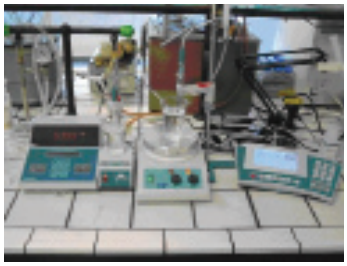
VDE 0482-267/EN 50267-2-2/IEC 60754-2/CEI 20-37/2-2 (Corrosivity)

This test specifies a method for the determination of degree of acidity of gases evolved during combustion of the cable specimen by measuring its pH and conductivity. The specimen is deemed to pass this test if the pH value is not less than 4.3 when related to 1 litre of water and conductivity is less than 10us/min. When the HCL yield lies between 2mg/g and 5mg/g, a cable specimen can pass IEC 60754-1 but its pH value will likely be less than 4.3 and therefore cannot pass the IEC 60754-2 test.

VDE 0482-268(New:VDE 0482-1034)/IEC 61034-1/ASTM E662/CEI 20-37/3 (Emission of Smoke)

This specifies a test for determination of smoke density. The 3 metre cube test measures the generation of smoke from electric cables during fire. A light beam emitted from a window is projected across the enclosure to a photo cell connected to a recorder at the opposite window. The recorder is adjusted to register from 0% for complete obscuration to 100% luminous transmissions. A 1 metre cable sample is placed in the centre of the enclosure and is applied with a fire. The minimum light transmission is recorded. The result is expressed as percentage of light transmitted. The specimen is deemed to pass this test (IEC61034-1 & 2) if the value is greater than 60% .The higher the light transmittance, the less smoke emitted during a fire.





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