

European Standardized Cables



E-mail: info@sabcable.com



Web site: www.sabcable.com

Chapter

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European Standardized Cables		
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NEW

Applications

■ Applications of PVC control and connection cables

PVC control and connection cables are particularly suitable for control devices on machine tools, conveyor or assembly lines, transporting equipment, production lines and construction of industrial plants. The cables can be moved after installation, especially for alignment and adjustment as well as inspection of machines, provided that the cables are not mechanically overloaded. These cables are not to be used for outdoor installation.

Exemplary applications:

H05V-K/MTW/TEW
H07V-K/MTW/TEW
H05Z-K
H07Z-K
H05V2-K/H05V-K
H07V2-K/H07V-K

Construction of control cabinets, appliances and devices for communication technologies, household appliances, generator, transformer and machine construction

H07RN-F

Flexible, rubber insulated, neoprene jacketed, harmonized cord recommended for use in electronic and electrical equipment such as office machines and appliances designed for export to European countries and for MRO replacement of European made equipment cables.

EUROPEAN STANDARDIZED CABLES

Selection index

		Cable type	H05V-K/MTW/TEW	H07V-K/MTW/TEW	H05Z-K H07Z-K	H05V2-K H05V-K	H07V2-K H07V-K	H07RN-F
Basic construction	Single conductor		x	x	x	x	x	
	Color Code acc. to DIN VDE							x
Temperature range static*	+ 105°C							
	+ 90°C							
	+ 60°C							
	- 25°C							
	- 40°C							
Voltage	Nominal voltage 600 V (UL/CSA)		x	x		x	x	
	Nominal voltage Uo/U 300/500 V		x		x	x		
	Nominal voltage Uo/U 450/750 V			x	x		x	x
	Testing voltage 2000 V		x			x		
	Testing voltage 2500 V			x	x		x	x
Standards and approvals	Burning characteristics flame retardant and self-extinguishing acc. to IEC 60332-1-2 and EN 60332-1-2		x	x	x	x	x	
	Burning characteristics flame retardant and self-extinguishing acc. to UL VW-1 and acc. to CSA FT1		x	x		x	x	
	UL recognized		x	x		x	x	
	CSA approved		x	x		x	x	

Temperature range:



*The temperature range for flexing is mentioned on the particular catalog page

EUROPEAN STANDARDIZED CABLES

**H05V-K/MTW/TEW
H07V-K/MTW/TEW**

Harmonized PVC hook-up wire tri-rated
300/500 volts and 450/750 volts



600 V AWM Style 1015/10519 105°C 600V VW1 CSA Type TEW 105°C 600V FT

Marking for H05V-K/MTW/TEW 31660150: SAB BRÖCKSKES · D-VIERSEN ·

< VDE > < HAR > H05V-K (UL) Type MTW 600 V AWM Style 1015/10519 105°C 600V VW1 CSA Type TEW 105°C 600V FT1 CE

One product with all the required standards for the North American and European markets. Recommended for use in electronic and electrical equipment designed for North America and Europe.

Construction:

Conductor:	tinned copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5
Insulation:	PVC T11 acc. to DIN VDE 0281 part 1 + HD 21.1
H05V-K:	HAR/UL/CSA/CE from 20 AWG - 18 AWG 05V-K from 26 AWG - 22 AWG
H07V-K:	HAR/UL/CSA/CE from 16 AWG - 2 AWG 07V-K from 16 AWG - 4/0 AWG
Color:	see color code chart*

Outstanding features:

- flexing single conductor
- harmonized acc. to European standards
- MTW (Machine Tool Wire)
- TEW (Thermoplastic Equipment Wire)
- **H07V-K:**
with reference to BS 6231 type BK

Technical data:

Nominal voltage H05V-K:	DIN VDE Uo/U 300/500 V	UL/CSA 600 V
Nominal voltage H07V-K:	DIN VDE Uo/U 450/750 V	UL/CSA 600 V
Testing voltage H05V-K:	2000 V acc. to DIN VDE 0281 part 2 + HD 21.2	
Testing voltage H07V-K:	2500 V acc. to DIN VDE 0281 part 2 + HD 21.2	
Min. bending radius:	4 x O.D.	
Temperature range	DIN VDE	UL-AWM/CSA (UL) MTW
<i>static:</i>	-40/+70°C	up to +105°C up to +90°C
<i>flexible:</i>	+5/+70°C	up to +105°C up to +90°C
Burning characteristics:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 and EN 60332-1-2, UL VW-1 and CSA FT1	
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/29	

05V-K / MTW / TEW - UL / CSA / CE

item no.	mm ²	AWG	nominal inch	outer-ø mm	cable weight ≈ lbs/mft
▶ 3166 .. 14*	0.14	26 (≈ 18/38)	0.079	2.0	4
▶ 3166 .. 25*	0.25	24 (≈ 14/34)	0.087	2.2	5
▶ 3166 .. 34*	0.34	22 (≈ 7/30)	0.091	2.3	6

Other colors are possible on request.

H07V-K / MTW / TEW - HAR / UL / CSA / CE

item no.	mm ²	AWG	nominal inch	outer-ø mm	cable weight ≈ lbs/mft
▶ 3167 .. 82*	1.50	16 (≈ 27/30)	0.122	3.1	13
▶ 3167 .. 84*	2.50	14 (≈ 46/30)	0.146	3.7	22
▶ 3167 .. 86*	4.00	12 (≈ 52/28)	0.169	4.3	34
▶ 3167 .. 87*	6.00	10 (≈ 78/28)	0.189	4.8	44
▶ 3167 .. 88*	10.00	8 (≈ 77/26)	0.268	6.8	81
▶ 3167 .. 89*	16.00	6 (≈ 122/26)	0.358	9.1	142
▶ 3167 .. 90*	25.00	4 (≈ 190/26)	0.417	10.6	204
▶ 3167 .. 91*	35.00	2 (≈ 272/26)	0.465	11.8	274

Other colors are possible on request.

H05V-K / MTW / TEW - HAR / UL / CSA / CE

item no.	mm ²	AWG	nominal inch	outer-ø mm	cable weight ≈ lbs/mft
▶ 3166 .. 50*	0.50	20 (≈ 16/32)	0.098	2.5	7
▶ 3166 .. 75*	0.75	19 (≈ 23/32)	0.106	2.7	9
▶ 3166 .. 80*	1.00	18 (≈ 30/32)	0.110	2.8	11

Other colors are possible on request.

07V-K / MTW / TEW - UL / CSA / CE

item no.	mm ²	AWG	nominal inch	outer-ø mm	cable weight ≈ lbs/mft
▶ 3167 .. 92*	50.00	1 (≈ 400/26)	0.598	15.2	403
▶ 3167 .. 93*	70.00	2/0 (≈ 543/26)	0.638	16.2	531
▶ 3167 .. 94*	95.00	3/0 (≈ 484/24)	0.760	19.3	717
▶ 3167 .. 95*	120.00	4/0 (≈ 589/24)	0.819	20.8	858

Other colors are possible on request.

* Color code for single conductors:

01 = black	06 = green	16 = dark blue
02 = blue	07 = violet	17 = pink
03 = brown	08 = white	27 = green yellow
04 = gray	09 = orange	32 = blue/white
05 = yellow	11 = red	63 = white/blue

EUROPEAN STANDARDIZED CABLES



H05Z-K Harmonized halogen free hook-up wire
H07Z-K 300/500 volts and 450/750 volts

H07Z-K 1X16 450/750V CE RoHS

HAR CE

Marking for H07Z-K 31870189
 SAB North America H07Z-K 1X16 450/750V CE

H05Z-K & H07Z-K are a halogen-free, <HAR> approved hook-up wires. They also have very good low emission of smoke and corrosive gases. With a class 5 stranding, they are flexible for easier wiring.

Construction:

Conductor:	class 5 annealed bare copper conductor acc. to EN 60228
Insulation:	special thermosetting low smoke zero halogen compound type EI5 acc. to EN 50363-5
H05Z-K:	HAR/CE from 20 AWG - 18 AWG
H07Z-K:	HAR/CE from 16 AWG - 6 AWG
Color:	see color code chart*

Outstanding features:

- flexing single conductor
- harmonized acc. to European standards
- halogen free, low smoke and low corrosive gases

Technical data:

Nominal voltage H05Z-K:	DIN VDE U ₀ /U 300/500 V
Nominal voltage H07Z-K:	DIN VDE U ₀ /U 450/750 V
Testing voltage H05Z-K:	2500 V
Testing voltage H07Z-K:	2500 V
Min. bending radius	4 x O.D.
Temperature range	
<i>static:</i>	-40/+90°C
<i>flexible:</i>	+5/+90°C
Burning characteristics:	flame retardant and self-extinguishing acc. to EN 60332-1-2 and EN 60332-3-24
Corrosivity:	EN 50267-2-2 : pH ≥ 4.3; Conductivity: ≤ 10µS/mm EN 50627-2-1: HCL ≤ 0.5%
Smoke density:	EN 61034-2
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/29

H05Z-K - HAR / CE

item no.	mm ²	AWG	nominal outer- inch	outer- mm	cable weight ≈ lbs/mft
▶ 3186 .. 50*	0.50	20 (≈ 16/32)	0.087	2.2	6
▶ 3186 .. 80*	1.00	18 (≈ 30/32)	0.091	2.3	9

Other colors are possible on request.

H07Z-K - HAR / CE

item no.	mm ²	AWG	nominal outer- inch	outer- mm	cable weight ≈ lbs/mft
▶ 3187 .. 82*	1.50	16 (≈ 27/30)	0.114	2.9	13
▶ 3187 .. 84*	2.50	14 (≈ 46/30)	0.142	3.6	20
▶ 3187 .. 86*	4.00	12 (≈ 52/28)	0.161	4.1	30
▶ 3187 .. 87*	6.00	10 (≈ 78/28)	0.181	4.6	42
▶ 3187 .. 88*	10.00	8 (≈ 77/26)	0.236	6.0	71
▶ 3187 .. 89*	16.00	6 (≈ 122/26)	0.280	7.1	107

Other colors are possible on request.

* Color code for single conductors:

01 = black	08 = white
02 = blue	09 = orange
03 = brown	11 = red
04 = gray	17 = pink
07 = violet	27 = green-yellow

EUROPEAN STANDARDIZED CABLES

H05V2-K H05V-K H07V2-K H07V-K

Harmonized PVC hook-up wire tri-rated
300/500 volts and 450/750 volts



H05V2-K H05V-K 0.5mm² 20 AWG AWM Style 1015 105°C 600V CSA Type TEW 105

Marking for H05V2-K 31470150: SAB BRÖCKSKES · D-VIERSEN ·

< VDE > < HAR > H05V2-K H05V-K 0.5mm² 20 AWG AWM Style 1015 105°C 600V CSA Type TEW 105°C 600V FT1 CE

One product with all the required standards for the North American and European markets. Recommended for use in electronic and electrical equipment designed for North America and Europe.

Construction:

Conductor:	tinned copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5
Insulation:	PVC T13 acc. to DIN VDE 0281 part 1 + HD 21.1
H05V2-K H05V-K:	HAR/UL/CSA/CE from 20 AWG - 18 AWG MEGA 147 from 26 AWG - 18 AWG
H07V2-K H07V-K:	HAR/UL/CSA/CE from 16 AWG - 2 AWG MEGA 157 from 16 AWG - 4/0 AWG
Color:	see color code chart*

Outstanding features:

- flexing single conductor
- harmonized acc. to European standards

Technical data:

Nominal voltage H05V2-K:	DIN VDE U ₀ /U 300/500 V	UL/CSA 600 V
Nominal voltage H07V2-K:	DIN VDE U ₀ /U 450/750 V	UL/CSA 600 V
Testing voltage H05V2-K:	2000 V acc. to DIN VDE 0281 part 2 + HD 21.1	
Testing voltage H07V2-K:	2500 V acc. to DIN VDE 0281 part 2 + HD 21.2	
Min. bending radius fixed installation:	< 12 mm = 3 x O.D. > 12 mm = 4 x O.D.	
free movement:	< 12 mm = 5 x O.D. > 12 mm = 6 x O.D.	
Temperature range static:	DIN VDE -40/+90°C	UL/CSA up to +105°C
flexible:	+5/+90°C	up to +105°C
Burning characteristics:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 and EN 60332-1-2, UL VW-1 and CSA FT1	
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/29	

MEGA 147 - UL / CSA / CE

item no.	mm ²	AWG	nominal inch	outer-ø mm	cable weight ≈ lbs/mft
▶ 3147 .. 14*	0.14	26 (≈ 18/38)	0.079	2.0	4
▶ 3147 .. 25*	0.25	24 (≈ 14/34)	0.087	2.2	5
▶ 3147 .. 34*	0.34	22 (≈ 7/30)	0.091	2.3	6

Other colors are possible on request.

MEGA 157 / H07V2-K / H07V-K - HAR / UL / CSA / CE

item no.	mm ²	AWG	nominal inch	outer-ø mm	cable weight ≈ lbs/mft
▶ 3157 .. 82*	1.50	16 (≈ 27/30)	0.122	3.1	13
▶ 3157 .. 84*	2.50	14 (≈ 46/30)	0.146	3.7	22
▶ 3157 .. 86*	4.00	12 (≈ 52/28)	0.169	4.3	34
▶ 3157 .. 87*	6.00	10 (≈ 78/28)	0.189	4.8	44
▶ 3157 .. 88*	10.00	8 (≈ 77/26)	0.268	6.8	81
▶ 3157 .. 89*	16.00	6 (≈ 122/26)	0.358	9.1	142
▶ 3157 .. 90*	25.00	4 (≈ 190/26)	0.417	10.6	204
▶ 3157 .. 91*	35.00	2 (≈ 272/26)	0.465	11.8	274

Other colors are possible on request.

MEGA 147 / H05V2-K / H05V-K - HAR / UL / CSA / CE

item no.	mm ²	AWG	nominal inch	outer-ø mm	cable weight ≈ lbs/mft
▶ 3147 .. 50*	0.50	20 (≈ 16/32)	0.098	2.5	7
▶ 3147 .. 75*	0.75	19 (≈ 23/32)	0.106	2.7	9
▶ 3147 .. 80*	1.00	18 (≈ 30/32)	0.110	2.8	11

Other colors are possible on request.

MEGA 157 - UL / CSA / CE

item no.	mm ²	AWG	nominal inch	outer-ø mm	cable weight ≈ lbs/mft
▶ 3157 .. 92*	50.00	1 (≈ 400/26)	0.598	15.2	403
▶ 3157 .. 93*	70.00	2/0 (≈ 543/26)	0.638	16.2	531
▶ 3157 .. 94*	95.00	3/0 (≈ 484/24)	0.760	19.3	717
▶ 3157 .. 95*	120.00	4/0 (≈ 589/24)	0.819	20.8	858

Other colors are possible on request.

* Color code for single conductors:

01 = black	08 = white
02 = blue	09 = orange
03 = brown	11 = red
04 = gray	17 = pink
07 = violet	27 = green-yellow

EUROPEAN STANDARDIZED CABLES



H07RN-F Heavy duty neoprene jacketed harmonized cordage 450/750 volts



HAR CE

H07RN-F is recommended for use in dry, humid or moist environments. It is designed for medium mechanical stresses, eg. for industrial and agricultural workshops appliances, large boiling installations, heating plates, inspection lamps, electrical tools such as drills, circular saws, domestic electric tools, and also for transportable motors or machines on building sites or in agricultural workings and is suitable for the wiring of constructional components in lifting appliances, machinery, etc.

Construction:

Conductor:	bare copper strands acc. to IEC 60228, EN 60228, class 5
Insulation:	synthetic rubber, Type E14
Color Code:	acc. to HD 308
Stranding:	from 2 conductors stranded in layers
Jacket material:	synthetic rubber, EM2
Jacket color:	black

Technical data:

Nominal voltage:	Uo/U 450/750 V
Testing voltage U:	2500 V
Min. bending radius:	6 x O.D.
Temperature range:	-25/+60°C
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/29

Outstanding features:

- harmonized to European standards
- high mechanical loading capacity
- UV resistant

item no.	no. of conductors incl. ground	nominal outer-ø inch	nominal outer-ø mm	cable weight ≈ lbs/mft
▶ 18 AWG (≈ 30/32) • 1.00 mm²				
39550210	2	0.327	8.3	67
39550310	3	0.350	8.9	81
39550410	4	0.382	9.7	87
39550510	5	0.433	11.0	114
▶ 16 AWG (≈ 27-29/30) • 1.50 mm²				
39550215	2	0.354	9.0	87
39550315	3	0.382	9.7	101
39550415	4	0.429	10.9	128
39550515	5	0.457	11.6	155
▶ 14 AWG (≈ 46/30) • 2.50 mm²				
39550225	2	0.409	10.4	128
39550325	3	0.449	11.4	148
39550425	4	0.512	13.0	188
39550525	5	0.563	14.3	228
▶ 12 AWG (≈ 52/28) • 4.00 mm²				
39550240	2	0.496	12.6	161
39550340	3	0.531	13.5	205
39550440	4	0.583	14.8	262
39550540	5	0.654	16.6	316

item no.	no. of conductors incl. ground	nominal outer-ø inch	nominal outer-ø mm	cable weight ≈ lbs/mft
▶ 10 AWG (≈ 78/28) • 6.00 mm²				
39550160	1	0.323	8.2	94
39550260	2	0.551	14.0	195
39550360	3	0.575	14.6	333
39550460	4	0.638	16.2	349
39550560	5	0.693	17.6	430
▶ 8 AWG (≈ 77/26) • 10.00 mm²				
39550161	1	0.394	10.0	141
39550261	2	0.748	19.0	356
39550361	3	0.803	20.4	591
39550461	4	0.858	21.8	638
39550561	5	0.965	24.5	773
▶ 6 AWG (≈ 122/26) • 16.00 mm²				
39550162	1	0.441	11.2	195
39550262	2	0.843	21.4	491
39550362	3	0.902	22.9	847
39550462	4	0.965	24.5	941
39550562	5	1.075	27.3	1142
▶ 4 AWG (≈ 190/26) • 25.00 mm²				
39550163	1	0.508	12.9	276
39550263	2	0.992	25.2	665
39550363	3	1.051	26.7	979
39550463	4	1.177	29.9	1310
39550563	5	1.283	32.6	1613

item no.	no. of conductors incl. ground	nominal outer-ø inch	nominal outer-ø mm	cable weight ≈ lbs/mft
▶ 2 AWG (≈ 272/26) • 35.00 mm²				
39550164	1	0.579	14.7	376
39550364	3	1.193	30.3	1282
39550464	4	1.323	33.6	1814
▶ 1 AWG (≈ 400/26) • 50.00 mm²				
39550165	1	0.677	17.2	497
39550365	3	1.386	35.2	1734
39550465	4	1.535	39.0	2419
▶ 2/0 AWG (≈ 543/26) • 70.00 mm²				
39550166	1	0.752	19.1	706
39550366	3	1.555	39.5	2305
39550466	4	1.728	43.9	3293
▶ 3/0 AWG (≈ 484/24) • 95.00 mm²				
39550167	1	0.850	21.6	874
39550367	3	1.772	45.0	2957
39550467	4	1.984	50.4	4166
▶ 4/0 AWG (≈ 589/24) • 120.00 mm²				
39550168	1	0.933	23.7	1048
▶ 250 MCM (≈ 740/24) • 150.00 mm²				
39550169	1	1.028	26.1	1335
▶ 350 MCM (≈ 902/24) • 185.00 mm²				
39550170	1	1.130	28.7	1546
▶ 450 MCM (≈ 1220/24) • 240.00 mm²				
39550171	1	1.256	31.9	2083
▶ 550 MCM (≈ 1525/24) • 300.00 mm²				
39550172	1	1.370	34.8	2345

Other dimensions and colors are possible on request.