

# European Standardized Cables



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# Chapter

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## Applications

### ■ Applications of PVC control and connection cables

PVC control and connection cables are particularly suitable for control devices, e.g. 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. Wherever a certain protection against electromagnetic interferences is requested cables with a copper screen can be used. These cables are not to be used for outdoor installation.

#### Exemplary applications:

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

## Selection index

		Cable type	H05V-K/MTW/TEW	H07V-K/MTW/TEW	H05V2-K H05V-K	H07V2-K H07V-K	H07RN-F
Basic construction	Single conductor		x	x	x	x	
	Color Code acc. to DIN VDE						x
Temperature range static*	+ 105 °C		■	■	■	■	
	+ 70 °C		■	■	■	■	
	+ 60 °C		■	■	■	■	
	- 25 °C		■	■	■	■	■
	- 40 °C		■	■	■	■	■
Voltage	Nominal voltage 600 V (UL/CSA)		x	x	x	x	
	Nominal voltage U <sub>0</sub> /U 300/500 V		x		x		
	Nominal voltage U <sub>0</sub> /U 450/750 V			x		x	x
	Testing voltage 2000 V		x		x		
	Testing voltage 2500 V			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	
	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 FT1

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:

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

## Outstanding features:

- flexing single conductor
- harmonized acc. to European standards
- MTW (Machine Tool Wire)
- TEW (Thermoplastic Equipment Wire)

## Technical data:

<b>Nominal voltage H05V-K:</b>	<b>DIN VDE</b> Uo/U 300/500 V	<b>UL/CSA</b> 600 V
<b>Nominal voltage H07V-K:</b>	<b>DIN VDE</b> Uo/U 450/750 V	<b>UL/CSA</b> 600 V
<b>Testing voltage H05V-K:</b>	2000 V acc. to DIN VDE 0281 part 2 + HD 21.2	
<b>Testing voltage H07V-K:</b>	2500 V acc. to DIN VDE 0281 part 2 + HD 21.2	
<b>Min. bending radius:</b>	4 x O.D.	
<b>Temperature range</b>	<b>DIN VDE</b>	<b>UL-AWM/CSA</b> <b>(UL) MTW</b>
<i>static:</i>	-40/+70 °C	up to +105°C    up to +90°C
<i>flexing:</i>	+5/+70 °C	up to +105°C    up to +90°C
<b>Burning characteristics:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 and EN 60332-1-2, UL VW-1 and CSA FT1	
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union see page N/28	

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

item no.	mm <sup>2</sup>	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 <sup>2</sup>	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 <sup>2</sup>	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.

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

item no.	mm <sup>2</sup>	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	08 = white
02 = blue	09 = orange
03 = brown	11 = red
04 = gray	17 = pink
07 = violet	27 = green-yellow

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# 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

AWM Style 1015 105°C 600V E172204 CSA Type TEW 105°C 600V FT1 LL104758 CE



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

< VDE > < HAR > H05V2-K H05V-K 0,5mm<sup>2</sup> 20 AWG AWM Style 1015 105°C 600V E172204 CSA Type TEW 105°C 600V FT1 LL104758 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:

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

### Outstanding features:

- flexing single conductor
- harmonized acc. to European standards

### Technical data:

<b>Nominal voltage H05V2-K: H05V-K:</b>	<b>DIN VDE</b> U <sub>0</sub> /U 300/500 V	<b>UL/CSA</b> 600 V
<b>Nominal voltage H07V2-K: H07V-K:</b>	<b>DIN VDE</b> U <sub>0</sub> /U 450/750 V	<b>UL/CSA</b> 600 V
<b>Testing voltage H05V2-K: H05V-K:</b>	2000 V acc. to DIN VDE 0281 part 2 + HD 21.1	
<b>Testing voltage H07V2-K: H07V-K:</b>	2500 V acc. to DIN VDE 0281 part 2 + HD 21.2	
<b>Min. bending radius fixed installation:</b>	< 12 mm = 3 x O.D. > 12 mm = 4 x O.D.	
<b>free movement:</b>	< 12 mm = 5 x O.D. > 12 mm = 6 x O.D.	
<b>Temperature range static:</b>	<b>DIN VDE</b> -40/+90 °C	<b>UL/CSA</b> up to +105°C
<b>flexing:</b>	+5/+90 °C	up to +105°C
<b>Burning characteristics:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 and EN 60332-1-2, UL VW-1 and CSA FT1	
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union see page N/28	

### MEGA 147 - UL / CSA / CE

item no.	mm <sup>2</sup>	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 <sup>2</sup>	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 <sup>2</sup>	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 <sup>2</sup>	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
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# EUROPEAN STANDARDIZED CABLES

## H07RN-F Heavy Duty Neoprene jacketed harmonized cordage 450/750 volts



### HAR VDE CE



H07RN-F recommended use in dry, humid or moist rooms, in open air, in workshops having an explosive atmosphere; 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, etc: also for fixed installations, eg. on rough-cast in temporary buildings and huts for accommodation purposes; suitable for the wiring of constructional components in lifting appliances, machinery, etc.

### Construction:

<b>Conductor:</b>	bare copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5
<b>Insulation:</b>	synthetic rubber, EI4 acc. to DIN VDE 0282 part 1 + HD 22.1
<b>Color Code:</b>	acc. to HD 308 (VDE 0293-308)
<b>Stranding:</b>	from 2 conductors stranded in layers
<b>Jacket material:</b>	synthetic rubber, EM2 acc. to DIN VDE 0282 part 1 + HD 22.1
<b>Jacket color:</b>	black

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 450/750 V
<b>Testing voltage U:</b>	2500 V acc. to DIN VDE 0282 part 2 + HD 22.2
<b>Min. bending radius:</b>	15 x O.D.
<b>Temperature range flexing:</b>	-25/+60 °C
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union see page N/28

### Outstanding features:

- ▶ Harmonized to European standards
- ▶ High mechanical loading capacity

item no.	no. of conductors incl. ground	nominal outer- $\phi$ inch	nominal outer- $\phi$ mm	cable weight $\approx$ lbs/mft
<b>▶ 18 AWG (<math>\approx</math> 30/32) • 1.00 mm<sup>2</sup></b>				
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
<b>▶ 16 AWG (<math>\approx</math> 27-29/30) • 1.50 mm<sup>2</sup></b>				
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
<b>▶ 14 AWG (<math>\approx</math> 46/30) • 2.50 mm<sup>2</sup></b>				
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
<b>▶ 12 AWG (<math>\approx</math> 52/28) • 4.00 mm<sup>2</sup></b>				
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- $\phi$ inch	nominal outer- $\phi$ mm	cable weight $\approx$ lbs/mft
<b>▶ 10 AWG (<math>\approx</math> 78/28) • 6.00 mm<sup>2</sup></b>				
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
<b>▶ 8 AWG (<math>\approx</math> 77/26) • 10.00 mm<sup>2</sup></b>				
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
<b>▶ 6 AWG (<math>\approx</math> 122/26) • 16.00 mm<sup>2</sup></b>				
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
<b>▶ 4 AWG (<math>\approx</math> 190/26) • 25.00 mm<sup>2</sup></b>				
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- $\phi$ inch	nominal outer- $\phi$ mm	cable weight $\approx$ lbs/mft
<b>▶ 2 AWG (<math>\approx</math> 272/26) • 35.00 mm<sup>2</sup></b>				
39550164	1	0.579	14.7	376
39550364	3	1.193	30.3	1282
39550464	4	1.323	33.6	1814
<b>▶ 1 AWG (<math>\approx</math> 400/26) • 50.00 mm<sup>2</sup></b>				
39550165	1	0.677	17.2	497
39550365	3	1.386	35.2	1734
39550465	4	1.535	39.0	2419
<b>▶ 2/0 AWG (<math>\approx</math> 543/26) • 70.00 mm<sup>2</sup></b>				
39550166	1	0.752	19.1	706
39550366	3	1.555	39.5	2305
39550466	4	1.728	43.9	3293
<b>▶ 3/0 AWG (<math>\approx</math> 484/24) • 95.00 mm<sup>2</sup></b>				
39550167	1	0.850	21.6	874
39550367	3	1.772	45.0	2957
39550467	4	1.984	50.4	4166
<b>▶ 4/0 AWG (<math>\approx</math> 589/24) • 120.00 mm<sup>2</sup></b>				
39550168	1	0.933	23.7	1048
<b>▶ 250 MCM (<math>\approx</math> 740/24) • 150.00 mm<sup>2</sup></b>				
39550169	1	1.028	26.1	1335
<b>▶ 350 MCM (<math>\approx</math> 902/24) • 185.00 mm<sup>2</sup></b>				
39550170	1	1.130	28.7	1546
<b>▶ 450 MCM (<math>\approx</math> 1220/24) • 240.00 mm<sup>2</sup></b>				
39550171	1	1.256	31.9	2083
<b>▶ 550 MCM (<math>\approx</math> 1525/24) • 300.00 mm<sup>2</sup></b>				
39550172	1	1.370	34.8	2345

Other dimensions and colors are possible on request.