

Harmonized European Hook-up Wire, Cable & Cordage

LAPP products are available from
MARYLAND METRICS






















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10 **OLFLEX[®]**



Harmonized European Hook-up Wire, Cable & Cordage

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Quick Select Chart

Product	Material Cond/ Jacket	Approval	Description	Page
<HAR> Hook-up wire with UL/CSA	PVC	H05V-K UL 1007 UL 1569	<HAR>, 500V, 70°C, IEC 60332.1 Flame, PVC UL AWM, 300V, 80°C, VW-1, PVC UL AWM, 300V, 105°C, VW-1, PVC	209
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<HAR> Hook-up wire	PVC	H05V-K H07V-K	<HAR>, 500V, 70°C, IEC 60332.1 Flame, PVC <HAR>, 750V, 70°C, IEC 60332.1 Flame, PVC	210
OLFLEX® POWER QUAD II	PVC/PVC	UL SJTO CSA SJTO H05VV-F	Service Cord, Oil Resistant, 300V, 90°C, FT1, PVC Service Cord, Oil Resistant, 300V, 90°C, FT1, PVC <HAR> Cordage, 500V, 70°C, IEC 60332-1 Flame, PVC	211
H05VV-F Cordage	PVC/PVC	H05VV-F	<HAR> Cordage, 500V, 70°C, IEC 60332-1 Flame, PVC	212
OLFLEX® POWER IX	Rubber/Neoprene	UL SOOW CSA SOOW H07RN-F	Service Cord, Oil and Weather Resistant, 600V, 90°C, FT2, Neoprene Service Cord, Oil and Weather Resistant, 600V, 90°C, FT2, Neoprene <HAR> Cord, 750V, 60°C, IEC 60332-1-2 Flame, Neoprene	213
H07RN-F Cordage	Rubber/Neoprene	H07RN-F	<HAR> Cord, 750V, 60°C, IEC 60332-1-2 Flame, Neoprene	214

Harmonized <HAR> Approved Conforms to CE

Lapp's Harmonized and CE conforming cables are utilized on Electronic and Electrical equipment that is intended for use in Europe.

The development and implementation of common standards for the European marketplace facilitates export trade to European countries. An international safety standards agency called CENELEC (European Committee for Electrotechnical Standardization) was formed to develop electrical standards that would be universally acceptable to all CENELEC member nations which are noted in the table below.

The electrical standards are classified as Harmonization Documents. OLFLEX®'s "HAR" cordage and hook-up wire conforms to Harmonization Documents HD-21 and HD-22:

HD-21 Specification for polyvinyl chloride insulated wire and cables.

HD-22 Specification for rubber insulated flexible cords and cables.

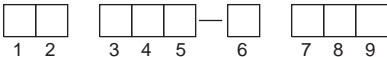
In order to identify a harmonized wire or cable, one of the following identification methods are required: (1) Printed

letters (HAR) on either the overall jacket or insulation or (2) Printed tape or identification threads.

Recommended applications as defined in the Harmonization Documents are as follows:

- PVC Cord (H05VV-F) - for use in offices, domestic premises, household appliances. Permitted for cooking and heating applications, provided cable does not contact hot parts and is not subjected to radiation.
(NOT SUITABLE FOR OUTDOOR USE)
- Rubber Cord (H05RR-F/H07RN-F) - for use when cable is subjected to mechanical stress in dry and damp areas. May be used as power supply cable for portable motors, appliances, domestic electric and electrical tools, agricultural and utility water equipment. May be installed on plaster or directly on structural parts of heavy machinery.

The CE symbol identifies a product that conforms to a European Directive developed by a coalition of European countries that form the European Union (EU). This compliance is necessary for exporting certain cable types to countries within the European community.

HARMONIZED WIRE CODING SYSTEM	LICENSING BODIES OF CENELEC*																														
 <ol style="list-style-type: none"> BASIC TYPE H Harmonized Type A National Type WORKING VOLTAGE 03 300/300 Volt 05 300/500 Volt 07 450/750 Volt INSULATING V PVC R Rubber S Silicone Rubber SHEATH-CLADDING MATERIAL V PVC R Rubber N Chloroprene Rubber J Glass-filament Braiding T Textile Braiding SPECIAL FEATURES H Ribbon Cable, Separable H2 Ribbon Cable, Non-Separable CONDUCTOR TYPES U Single Wire R Multi-Wire K Fine Wire (Permanently Installed) F Fine Wire (Flexible) H Super Fine Wire Y Tinsel Strand NUMBER OF CONDUCTORS PROTECTIVE CONDUCTOR X Without Protective Conductor G With Protective Conductor CONDUCTOR CROSS-SECTIONAL Area specified in mm² 	<table border="0"> <tr> <td data-bbox="550 982 790 1039">AUSTRIA</td> <td data-bbox="805 982 1477 1039">Osterreichischer Verband for Elektrotechnik (OVE)</td> </tr> <tr> <td data-bbox="550 1060 790 1117">BELGIUM</td> <td data-bbox="805 1060 1477 1117">Comite' Electrotechnique Belge (CEBEC)</td> </tr> <tr> <td data-bbox="550 1117 790 1173">DENMARK</td> <td data-bbox="805 1117 1477 1173">Denmarks Elektriske Materiel Kontrol (DEMKO)</td> </tr> <tr> <td data-bbox="550 1194 790 1251">FINLAND</td> <td data-bbox="805 1194 1477 1251">Electrical Inspectorate (SETI)</td> </tr> <tr> <td data-bbox="550 1251 790 1308">FRANCE</td> <td data-bbox="805 1251 1477 1308">Union Technique de l' Electricite' (UTE)</td> </tr> <tr> <td data-bbox="550 1308 790 1365">GERMANY</td> <td data-bbox="805 1308 1477 1365">Verband Deutscher Elektrotechniker (VDE) e.V, Prüfstelle</td> </tr> <tr> <td data-bbox="550 1365 790 1421">GREECE</td> <td data-bbox="805 1365 1477 1421">Hellenic Organization for Standardization (ELOT)</td> </tr> <tr> <td data-bbox="550 1421 790 1478">IRELAND</td> <td data-bbox="805 1421 1477 1478">National Standards Authority of Ireland (NSAI)</td> </tr> <tr> <td data-bbox="550 1478 790 1535">ITALY</td> <td data-bbox="805 1478 1477 1535">Istituto Italiano del Marchio di Quanta (IMQ)</td> </tr> <tr> <td data-bbox="550 1535 790 1591">LUXEMBOURG</td> <td data-bbox="805 1535 1477 1591">ITM</td> </tr> <tr> <td data-bbox="550 1591 790 1648">NETHERLANDS</td> <td data-bbox="805 1591 1477 1648">N.V. tot Keuring van Elektrotechnische Materialen (KEMA)</td> </tr> <tr> <td data-bbox="550 1648 790 1705">PORTUGAL</td> <td data-bbox="805 1648 1477 1705">Institute Petugues Da Qualidede (IPQ)</td> </tr> <tr> <td data-bbox="550 1705 790 1761">SPAIN</td> <td data-bbox="805 1705 1477 1761">Asociacion Electrotcnica Y Electronica Espanola</td> </tr> <tr> <td data-bbox="550 1761 790 1818">SWEDEN</td> <td data-bbox="805 1761 1477 1818">Svenska Elektriska Materiel Kontrollanstalten (SEMKO)</td> </tr> <tr> <td data-bbox="550 1818 790 1948">UNITED KINGDOM</td> <td data-bbox="805 1818 1477 1948">B.A.S.E.C. — British Approvals Service for Electric Cables Ltd.</td> </tr> </table>	AUSTRIA	Osterreichischer Verband for Elektrotechnik (OVE)	BELGIUM	Comite' Electrotechnique Belge (CEBEC)	DENMARK	Denmarks Elektriske Materiel Kontrol (DEMKO)	FINLAND	Electrical Inspectorate (SETI)	FRANCE	Union Technique de l' Electricite' (UTE)	GERMANY	Verband Deutscher Elektrotechniker (VDE) e.V, Prüfstelle	GREECE	Hellenic Organization for Standardization (ELOT)	IRELAND	National Standards Authority of Ireland (NSAI)	ITALY	Istituto Italiano del Marchio di Quanta (IMQ)	LUXEMBOURG	ITM	NETHERLANDS	N.V. tot Keuring van Elektrotechnische Materialen (KEMA)	PORTUGAL	Institute Petugues Da Qualidede (IPQ)	SPAIN	Asociacion Electrotcnica Y Electronica Espanola	SWEDEN	Svenska Elektriska Materiel Kontrollanstalten (SEMKO)	UNITED KINGDOM	B.A.S.E.C. — British Approvals Service for Electric Cables Ltd.
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<HAR> Hook-up Wire

H05V-K, UL Style 1007 + 1569, UL/CSA

H07V-K, UL Style 1015 + 1063, UL (MTW)/ CSA



This hook-up wire has international approvals to satisfy the requirements of both North America and Europe. It passes <HAR> H05V-K, <HAR> H07V-K, UL AWM, UL MTW (16 AWG and larger), CSA TEW and CE.

Recommended Applications:

Panel and machine wiring for domestic and export usage. Electronic equipment, Medical Equipment, and Wire bundling

Application Advantage:

- One inventory vs. two for domestic and export consumption
- 13 color code options
- UL MTW for 16 AWG and larger
- Available in large cardboard barrels for easy pull (16 AWG MTW and larger only) Call your sales representative for P/N and availability

<HAR> Hook-up Wire Construction:

Finely stranded tinned copper conductors; PVC insulation

Color Code:

- | | |
|------------------|---------------|
| 00= Green/Yellow | 07= Violet |
| 01= Black | 08= Pink |
| 02= Blue | 09= Orange |
| 03= Brown | 10= Yellow ** |
| 04= Red | 11= Green ** |
| 05= White | 14= Dark Blue |
| 06= Gray | |



Cable Attributes, See Page 653

Oil Resistance: OR-02	Flame Resistance: FR-02
Motion Type: FL-02	Mechanical Properties: MP-01

Complete the installation with:

SKINTOP® Strain Relief: Page 486	EPIC® Connectors: Page 251
SKINTOP® DIX Page 524	FLEXIMARK® Marking: Page 596

Technical Data:

- | | |
|---|--|
| Temperature Range:
HAR/IEC: -40°C to +70°C
UL/CSA: -40°C to +105°C | Stranding: Fine wire per VDE 0295, Class 5 |
| Test Voltage: 2500V | Approvals: UL: H05V-K: AWM Style 1007 + 1569
H07V-K: 1063 MTW Listed, 1015 AWM
CSA: TEW
Additional: <HAR> H05V-K & H07V-K |
| Nominal Voltage:
HAR/IEC: H05V-K: 300/500V
UL/CSA: H05V-K: 300V
H07V-K: 450/750V
H07V-K: 600V | |

Part Number	Nominal Outer Diameter inches	Nominal Outer Diameter mm	Copper Weight lbs/mft	Approx. Weight lbs/mft	Approx. Weight kg/km	Part Number	Nominal Outer Diameter inches	Nominal Outer Diameter mm	Copper Weight lbs/mft	Approx. Weight lbs/mft	Approx. Weight kg/km
H05V-K						8 AWG (10 mm ²)					
22 AWG (0.50 mm ²)						41608..	.268	6.8	65	80.7	120
41804..	.087	2.2	3	5.8	9	6 AWG (16 mm ²)					
41805..	.094	2.4	5	7.5	11	*41609..	.350	8.9	103	124.3	185
18 AWG (1.00 mm ²)						4 AWG (25 mm ²)					
41806..	.098	2.5	6	9.1	14	41610..	.398	10.1	161	174.8	260
H07V-K						2 AWG (35 mm ²)					
16 AWG (1.50 mm ²)						41611..	.449	11.4	226	242.0	360
41604..	.122	3.1	10	13.4	20	1 AWG (50 mm ²)					
41605..	.146	3.7	16	20.8	31	*41612..	.551	14.0	323	359.6	535
14 AWG (2.50 mm ²)						2/0 AWG (70 mm ²)					
41606..	.173	4.4	26	30.2	45	*41613..	.622	15.8	452	494.0	735
12 AWG (4 mm ²)						3/0 AWG (95 mm ²)					
41607..	.193	4.9	39	42.3	63	41614..	.713	18.1	613	625.1	930
10 AWG (6 mm ²)						4/0 AWG (120 mm ²)					
						41615..	.764	19.4	774	779.7	1160

NOTE: To develop the Lapp part number - add the double digit color code to the above part number prefix. For example: 16AWG H07V-K Green/ Yellow: 4160400

* In accordance to the HAR standards X07V-K without "HAR"- printing. ** For these colors no HAR-approval for 1.5 mm² or larger

<HAR> Hook-up Wire



Harmonized Hook-up Wire

Types H05V-K, H07V-K

This hook-up wire is <HAR> approved, conforming to European standards. It can be used to wire electronic and electrical equipment for export to Europe.

Recommended Applications:

Panel and machine wiring for export usage. Electronic equipment, Medical equipment, Wire bundling, MRO replacement of European equipment and Machinery

Application Advantage:

- 14 color code options
- <HAR> & CE approved
- Large AWG range: 22AWG to 480 KCMIL
- Flexible stranding vs. solid core and 7 strand

<HAR> European Hook-up Wire Construction:

Finely stranded bare copper conductors; PVC insulation.



Color Code:

- | | |
|------------------|-------------------|
| 00= Green/Yellow | 07= Violet |
| 01= Black | 08= Pink |
| 02= Blue | 09= Orange |
| 03= Brown | 10= Transparent** |
| 04= Red | 11= Yellow ** |
| 05= White | 12= Green ** |
| 06= Gray | 14= Dark Blue |

Cable Attributes, See Page 653



Oil Resistance:
OR-01



Flame Resistance:
FR-02



Motion Type:
FL-02



Mechanical Properties:
MP-01

Availability:



Standard put-ups are
22-16 AWG: 1000ft
14-10 AWG: 502ft
≤ 8 AWG: 253ft
Optional put-ups:
328ft, ≤ 2 AWG: 164ft

Complete the installation with:



SKINTOP®
Strain Relief:
Page 486



EPIC®
Connectors:
Page 251



OLFLEX®
Tubing:
Page 546



FLEXIMARK®
Marking:
Page 596

Technical Data:

Temperature Range:	-30°C to +80°C	Conductor Stranding:	Fine Wire per VDE 0295, Class 5 IEC 60228
Nominal Voltage:	H05V-K: 300/500V	H07V-K: 450/750V	Approvals:
Test Voltage:	2000V	2500V	<HAR> H05V-K + H07V-K

Part Number	Nominal Outer Diameter inches mm	Copper Weight lbs/mft	Approx. Weight lbs/mft kg/km	Part Number	Nominal Outer Diameter inches mm	Copper Weight lbs/mft	Approx. Weight lbs/mft kg/km
H05V-K				4 AWG (200/26) 25 mm ²			
22 AWG (16/32) 0.50 mm ²				4521..1	.386 9.8	161	199 296
4510..1	.083 2.1	3	5.8 9	2 AWG (280/26) 35 mm ²			
20 AWG (24/32) 0.75 mm ²				4521..2	.433 11.0	226	265 394
4510..2	.094 2.4	5	7.5 11	1 AWG (400/26) 50 mm ²			
18 AWG (32/32) 1.00 mm ²				4521..3	.512 13.0	323	346 515
4510..3	.102 2.6	7	9.1 14	2/0 AWG (560/26) 70 mm ²			
H07V-K				4521..4	.610 15.5	452	466 693
16 AWG (30/30) 1.50 mm ²				3/0 AWG (485/24) 95 mm ²			
4520..1	.118 3.0	10	14.5 22	4521..5	.669 17.0	613	615 915
14 AWG (50/30) 2.50 mm ²				4/0 AWG (514/24) 120 mm ²			
4520..2	.146 3.7	16	21 31	4521..6	.776 19.7	774	772 1149
12 AWG (56/28) 4 mm ²				300 KCMIL (765/24) 150 mm ²			
4520..3	.169 4.3	26	31 46	4521..7	.839 21.3	968	975 1451
10 AWG (84/28) 6 mm ²				370 KCMIL (944/24) 185 mm ²			
4520..4	.193 4.9	39	45 67	4521..8	.925 23.5	1193	1196 1780
8 AWG (80/26) 10 mm ²				480 KCMIL (1255/25) 240 mm ²			
4520..5	.256 6.5	65	77 115	4521..9	1.079 27.4	1548	1575 2344
6 AWG (128/26) 16 mm ²							
4520..6	.315 8.0	103	117 174				

NOTE: To develop the Lapp Part number - Insert the double digit color code in the above part number. For example 22 AWG H05V-K Green/Yellow: 4510001

** For these colors no <HAR> approval

OLFLEX® POWER QUAD II

PVC Cordage with <HAR> & SJTO Approval



OLFLEX® POWER QUAD II is a PVC cordage with UL/CSA SJTO and <HAR> H05VV-F approval. It has a very oil resistant jacket and an international color code. OLFLEX® POWER QUAD II can be used in European, American, Asian and Canadian cordage applications so one cable does the work of 4.

Recommended Applications:

Power cordage for domestic and exported machinery; Portable tools, Data processing, Control systems, and Commercial appliances

Application Advantage:

- Contains International approvals so one cable does the job of 4 reducing inventory
- One product so one specification for easy and safe installation
- Oil resistant PVC jacket meeting Oil Res I & II
- UV resistant

OLFLEX® POWER QUAD II Construction:

Finely stranded bare copper conductors; specially blended PVC insulation; specially formulated oil resistant black PVC jacket.



Cable Attributes, See Page 653

	Oil Resistance: OR-04		Flame Resistance: FR-02
	Motion Type: FL-02		Mechanical Properties: MP-02

Availability:

Standard put-ups are 100ft, 250ft, 500ft, and 1,000ft. Bulk reels can be cut to length.

Complete the installation with:

	SKINTOP® Strain Relief: Page 486		EPIC® Connectors: Page 251
	OLFLEX® Tubing: Page 546		<HAR> Cordsets: Page 640

Technical Data:

- | | | | | | |
|--|---------------------------------------|--|--|-------------|--|
| | Minimum Bend Radius for flexible use: | 4 x cable diameter | | Color Code: | 2c- Blue, Brown
3c- Blue, Brown, Green/Yellow
4c- Brown, Black, Gray, Green/Yellow
5c- Blue, Brown, Black, Gray, Green/Yellow |
| | Temperature Range: | -40°C to +90°C
-30°C to +70°C <HAR> | | Approvals: | UL: - Listed SJTO
- AWM 21098
- Passes Oil Res I, II
- 62 Flexible Cord Thermoset Requirement
- UL 1277- Crush and Impact Tests
CSA: - Certified SJTO, AWM FT1
Additional: - <HAR> H05VV-F |
| | Nominal Voltage: | 300V- SJTO
500V- <HAR>
600V- AWM | | | |
| | Test Voltage: | 3000V | | | |
| | Conductor Stranding: | Fine wire per VDE 0295, Class 5 | | | |

Part Number	Number of Conductors includes ground	Nominal Outer Diameter inches	mm	Copper Weight lbs/mft	Approx. Weight lbs/mft	kg/km	Part Number	Number of Conductors includes ground	Nominal Outer Diameter inches	mm	Copper Weight lbs/mft	Approx. Weight lbs/mft	kg/km
18 AWG (32/32) 1.00 mm ²							14 AWG (50/30) 2.50 mm ²						
311802	2	.285	7.2	13	45	67	311402	2	.376	9.6	32	88	131
311803	3	.300	7.6	19	53	79	311403	3	.407	10.3	48	102	152
311804	4	.330	8.3	26	73	100	311404	4	.447	11.4	65	130	194
311805	5	.375	9.5	32	93	120	311405	5	.496	12.6	81	150	223
16 AWG (30/30) 1.50 mm ²													
311602	2	.320	8.1	19	62	92							
311603	3	.332	8.4	29	73	109							
311604	4	.364	9.2	39	84	125							
311605	5	.405	10.3	48	100	149							

H05VV-F Cordage

Harmonized European Flexible Cordage - PVC



H05VV-F is a PVC cordage that meets <HAR> H05VV-F approval. It is designed for use on European equipment as the power supply cable.

Recommended Applications:

Power cordage for European machinery, Portable tools, Data processing, Control systems, Commercial appliances, and MRO repair for European machinery

Application Advantage:

- Meets <HAR> directives for power cordage
- MRO replacement cable for European machinery
- UV resistant

H05VV-F Cordage Construction:

Finely stranded bare copper conductors; PVC insulation; dry lubricant; PVC jacket.



This product is being replaced by OLFLEX® QUAD II, minimums may apply.

Cable Attributes, See Page 653

Oil Resistance: OR-01	Flame Resistance: FR-01
Motion Type: FL-01	Mechanical Properties: MP-01

For conductor sizes larger than 12 AWG (4 mm²) HAR requires H07RN-F. See Page 214

Complete the installation with:

SKINTOP® Strain Relief: Page 486	EPIC® Connectors: Page 251
OLFLEX® Tubing: Page 546	<HAR> Cordsets: Page 640

Technical Data:

- | | | | |
|---------------------------------------|--------------------|----------------------|--|
| Minimum Bend Radius for flexible use: | 5 x cable diameter | Conductor Stranding: | Fine Wire in acc. with VDE 0295 Cl.5 IIEC 60228 Cl.5 |
| Temperature Range: | -30°C to +70°C | Color Code: | VDE 0293-308, Chart 6, Page 673 |
| Nominal Voltage: | 300/500V | Approvals: | <HAR> H05VV-F |
| Test Voltage: | 3000V | | |

Black Jacket Part Number	Gray Jacket Part Number	Number of Conductors includes ground	Nominal Outer Diameter		Copper Weight	Approx. Weight	
			inches	mm	lbs/mft	lbs/mft	kg/km
19 AWG (24/32) 0.75 mm²							
1601103	810965	2	.252	6.4	10	35	52
1601102	810618	3	.268	6.8	15	42	62
16011263	8109663	4	.291	7.4	19	50	75
81097633	8109673	5	.327	8.5	24	65	96
18 AWG (32/32) 1.00 mm²							
1601106	810968	2	.268	6.8	13	42	61
1601109	810616	3	.283	7.2	19	50	74
16011193	8109693	4	.307	7.8	25	62	92
16011293	8109703	5	.346	8.8	32	76	113
16 AWG (30/30) 1.50 mm²							
1601114	810971	2	.303	7.7	18	57	84
1601111	810617	3	.335	8.5	27	71	106
16011163	8106753	4	.374	9.5	39	90	133
16011233	8109723	5	.417	10.6	48	112	167
14 AWG (50/30) 2.50 mm²							
1601121	810973	2	.366	9.3	32	85	126
1601125	810974	3	.394	10.0	48	106	158
16011353	8106763	4	.433	11.0	65	132	196
16011123	8109753	5	.484	12.3	81	163	242

OLFLEX® POWER IX

Heavy Duty, Neoprene Cordage with <HAR> & SOOW Approval for Import & Export



OLFLEX® POWER IX is a neoprene cordage with UL/CSA SOOW and <HAR> H07RN-F approval. It has an oil, chemical and abrasion resistant jacket and an international color code. OLFLEX® POWER IX can be used in European, American, Asian and Canadian cordage applications so one cable does the work of 4.

Recommended Applications:

Power cordage for domestic and exported machinery, Portable tools, Data processing, Control systems, and Commercial appliances

Application Advantage:

- International approvals so one cable does the job of 4 reducing inventory
- One product so one specification for easy and safe installation
- Oil, chemical and abrasion resistant neoprene jacket
- Ideal for high stress applications in dry and damp environments
- UV resistant, outdoor use

OLFLEX® POWER IX Construction:

Finely stranded bare copper conductors; rubber insulation; dry lubricant; neoprene jacket.



Larger sizes available upon request. Minimums may apply.

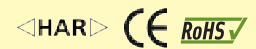
Cable Attributes, See Page 653			Availability:		Complete the installation with:			
	Oil Resistance: OR-02		Flame Resistance: FR-02				SKINTOP® Strain Relief: Page 486	EPIC® Connectors: Page 251
	Motion Type: FL-02		Mechanical Properties: MP-02					
Standard put-ups are 100ft, 250ft, 500ft, and 1,000ft. Bulk reels can be cut to length.								

Technical Data:

- | | | | |
|---------------------------------------|--|----------------------|---|
| Minimum Bend Radius for flexible use: | 10 x cable diameter | Color Code: | 3c- Blue, Brown, Green/Yellow
4c- Brown, Black, Gray, Green/Yellow
5c- Blue, Brown, Black, Gray, Green/Yellow |
| Temperature Range: | -40°C to +90°C
-25°C to +60°C <HAR> | Conductor Stranding: | Fine Wire |
| Nominal Voltage: | 450/750V- <HAR>
600V- UL | Approvals: | UL: Listed SOOW,
CSA: Certified SOOW
Additional: <HAR> H07RN-F |
| Test Voltage: | 2500V | | |

Part Number	Number of Conductors includes ground	Nominal Outer Diameter inches	mm	Copper Weight lbs/mft	Approx. Weight lbs/mft	kg/km	Part Number	Number of Conductors includes ground	Nominal Outer Diameter inches	mm	Copper Weight lbs/mft	Approx. Weight lbs/mft	kg/km
18 AWG (32/32) 1.00 mm²						12 AWG (56/28) 4 mm²							
321803	3	.380	9.6	19	88	130	321203	3	.620	15.7	77	216	320
16 AWG (30/30) 1.50 mm²						8 AWG (80/26) 10 mm²							
321603	3	.400	10.2	29	111	165	321204	4	.670	17.0	103	267	395
321604	4	.450	11.4	39	135	200	321205	5	.740	18.7	129	328	485
321605	5	.520	13.1	48	162	240	10 AWG (84/28) 6 mm²						
14 AWG (50/30) 2.50 mm²						8 AWG (80/26) 10 mm²							
321403	3	.550	14.0	48	159	235	321003	3	.670	17.0	116	335	495
321404	4	.590	15.1	65	196	290	321004	4	.720	18.2	155	412	610
321405	5	.670	16.9	81	230	347	321005	5	.790	20.1	194	514	760
						320803							
						320804							
						320803							
						320804							

H07RN-F Cordage



Heavy Duty, Neoprene Jacketed, Harmonized European Flexible Cordage

H07RN-F is a neoprene cordage that meets <HAR> H07RN-F approval. It has an oil, chemical and abrasion resistant jacket and has an international color code.

Recommended Applications:

Power cordage for European machinery, Portable tools, Data processing, control systems, Commercial appliances, and MRO replacement for European machinery

Application Advantage:



- Oil, chemical and abrasion resistant neoprene jacket
- Ideal for high stress applications in dry and damp environments
- MRO replacement for European machinery
- UV resistant, outdoor use



H07RN-F Cordage Construction:

Finely stranded bare copper conductors; rubber insulation; dry lubricant; neoprene jacket.



Cable Attributes, See Page 653



Oil Resistance: OR-01  Flame Resistance: FR-01 



Motion Type: FL-01  Mechanical Properties: MP-01 

Availability:








 Standard put-ups are 164ft, 328ft, 1640ft, and 3280ft. Bulk reels can be cut to length.

Complete the installation with:

 SKINTOP® Strain Relief: Page 486  EPIC® Connectors: Page 251

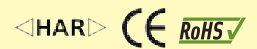
 OLFLEX® Tubing: Page 546  <HAR> Cordsets: Page 640

Technical Data:

 Minimum Bend Radius for flexible use:	10 x cable diameter	 Color Code:	VDE 0293-308, Chart 6, Page 673
 Temperature Range:	-25°C to +60°C	 Conductor Stranding:	Fine Wire in acc. with VDE 0295 Cl.5 IEC 60228 Cl.5
 Nominal Voltage:	450/750V	 Approvals:	<HAR> H07RN-F
 Test Voltage:	2500V		

Part Number	Number of Conductors includes ground	Nominal Outer Diameter inches	Copper Weight lbs/mft	Approx. Weight lbs/mft	Approx. Weight kg/km	Part Number	Number of Conductors includes ground	Nominal Outer Diameter inches	Copper Weight lbs/mft	Approx. Weight lbs/mft	Approx. Weight kg/km
18 AWG (32/32) 1.00 mm ²						8 AWG (80/26) 10 mm ²					
1600117	3	.327 - .421	19	88	130	1600121	3	.752 - .953	194	595	880
16001233	4	.402 - .516	39	135	200	16001083	4	.823 - 1.043	258	712	1060
16001043	5	.441 - .567	48	162	240	16001093	5	.902 - 1.146	323	880	1300
14 AWG (50/30) 2.50 mm ²						6 AWG (126/26) 16 mm ²					
1600118	3	.429 - .551	48	159	235	1600122	3	.858 - 1.087	310	737	1090
16001053	4	.476 - .610	65	196	290	16001103	4	.937 - 1.185	413	910	1345
16001293	5	.524 - .669	81	232	345	16001113	5	1.185 - 1.311	516	1137	1680
12 AWG (56/28) 4 mm ²						4 AWG (196/26) 25 mm ²					
1600119	3	.500 - .638	77	216	320	16001123	4	1.138 - 1.441	645	1350	1995
16001063	4	.551 - .705	103	267	395	16001133	5	1.260 - 1.591	806	1672	2470
16001303	5	.614 - .783	129	328	485	2 AWG (296/26) 35 mm ²					
10 AWG (84/28) 6 mm ²						16001143	4	1.280 - 1.618	903	1790	2645
1600120	3	.555 - .709	116	335	495	1 AWG (396/26) 50 mm ²					
16001073	4	.618 - .787	155	412	610	16001153	4	1.484 - 1.870	1290	2460	3635
16001313	5	.689 - .874	194	514	760	2/0 AWG (360/24) 70 mm ²					
						16001163	4	1.681 - 2.126	1806	3269	4830
						3/0 AWG (475/24) 95 mm ²					
						16001283	4	1.906 - 2.402	2451	4278	6320

H07RN-F Single Cordage



Heavy Duty, Neoprene Jacketed, Harmonized European Flexible Single Conductor Cordage

H07RN-F is a neoprene single conductor cordage that meets <HAR> H07RN-F approval. It has an oil, chemical and abrasion resistant jacket.

Recommended Applications:

Power cordage for European machinery, Portable tools, Data processing, control systems, Commercial appliances, and MRO replacement for European machinery

Application Advantage:





- Oil, chemical and abrasion resistant neoprene jacket
- Ideal for grounding per VDE 0100 Part 520
- Suitable for high stress applications in dry and damp environments
- MRO replacement for European machinery
- UV resistant, outdoor use

H07RN-F Single Construction:


Finely stranded bare copper conductors; neoprene jacket.







Cable Attributes, See Page 653

	Oil Resistance: OR-01		Flame Resistance: FR-01
	Motion Type: FL-01		Mechanical Properties: MP-01








Availability:

 Standard put-ups are 164ft, 328ft, 1640ft, and 3280ft. Bulk reels can be cut to length.

Complete the installation with:

	SKINTOP® Strain Relief: Page 486		EPIC® Connectors: Page 251
	OLFLEX® Tubing: Page 546		FLEXIMARK® Marking: Page 596

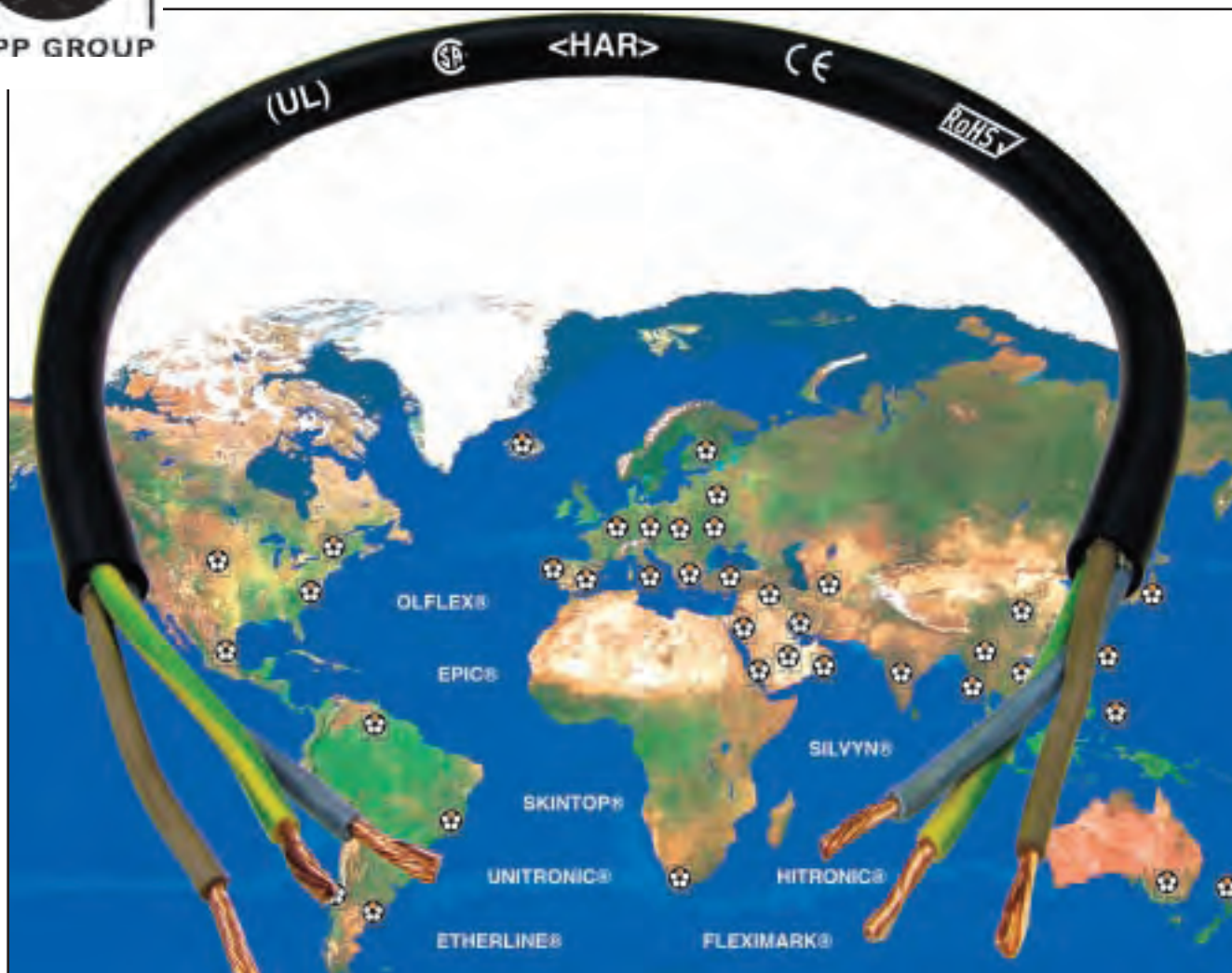
Technical Data:

- | | | | |
|---|---------------------|--|--|
|  Minimum Bend Radius for flexible use: | 15 x cable diameter |  Color Code: | VDE 0293-308, Chart 6, Page 673 |
|  Temperature Range: | -25°C to +60°C |  Conductor Stranding: | Fine Wire in acc. with VDE 0295 Cl.5 IIEC 60228 Cl.5 |
|  Nominal Voltage: | 450/750V |  Approvals: | <HAR> H07RN-F |
|  Test Voltage: | 2500V | | |

Part Number	Number of Conductors includes ground	Nominal Outer Diameter inches	Copper Weight lbs/mft	Approx. Weight lbs/mft	kg/m	Part Number	Number of Conductors includes ground	Nominal Outer Diameter inches	Copper Weight lbs/mft	Approx. Weight lbs/mft	kg/m
16 AWG (1.5 mm ²)						2/0 AWG (70 mm ²)					
1600096	1	.224 - .280	10	40	59	1600189	1	.732 - .917	452	732	1090
14 AWG (2.5 mm ²)						3/0 AWG (95 mm ²)					
1600099	1	.248 - .311	16	48	72	1600190	1	.819 - 1.024	613	944	1405
12 AWG (4 mm ²)						4/0 AWG (120 mm ²)					
1600097	1	.283 - .354	26	67	99	1600198	1	.898 - 1.126	774	1173	1745
10 AWG (6 mm ²)						300 KCMIL (150 mm ²)					
1600098	1	.311- .386	39	87	130	1600191	1	.992 - 1.236	968	1268	1887
8 AWG (10 mm ²)						350 KCMIL (185 mm ²)					
1600194	1	.374 - .469	65	155	230	1600175	1	1.087 - 1.354	1193	1528	2274
6 AWG (16 mm ²)						480 KCMIL (240 mm ²)					
1600195	1	.425 - .528	103	215	320	1600177	1	1.205 - 1.508	1548	1986	2955
4 AWG (25 mm ²)						600 KCMIL (300 mm ²)					
1600196	1	.500 - .622	161	302	450	30015435	1	1.319 - 1.650	1935	2338	3479
2 AWG (35 mm ²)											
1600193	1	.563 - .705	226	407	605						
1 AWG (50 mm ²)											
1600197	1	.650 - .811	323	554	825						



Global Approved Portable Cordage: 1+1+1=1



**OLFLEX® POWER IX (Rubber) &
OLFLEX® POWER QUAD II (PVC)**

Simply in a Class by Themselves

- 1 inventory vs. 3
- Reduce inventory costs
- Multiple approvals in one rubber cordage:
UL Listed SOOW + CSA Certified SOOW+ <HAR> = 1 Globally Approved Cable
- One spec for all your domestic & export needs

Call for a sample and find out how Lapp cordage can save you money.