

Cables and cable assemblies

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<b>harlink®</b> .....	<b>40.02</b>
<b>harmik®</b> .....	<b>40.03</b>
<b>D-Sub and SEK</b> .....	<b>40.08</b>



Cables for insulation displacement termination

Identification	No. of pairs	Part No.	
		Standard version	Halogen free version with screened pairs
Twisted pair cable with braid shield AWG 28 AWG 30 Length per reel: 100 m	5	60 90 005 6010	60 90 005 6009
	10	60 90 010 6010	
	13	60 90 013 6010	
	18	60 90 018 6010	
	25	60 90 025 6010	
	34	60 90 034 6010	
	50	60 90 050 6010	

**Drawing**

No. of pairs	Outside diameter	
	Nominal	
5	5.4	
10	6.6	
13	6.8	
18	7.5	
25	8.5	
34	8.9	
50	11.1	

No. of pairs	Outside diameter
5	5.5 ± 0.3

Dimensions in mm

	Technical characteristics	
	Standard version	Halogen free version with screened pairs
Number of pairs	5, 10, 13, 18, 25, 34, 50	5
Voltage rating	30 V (style UL 2789)	100 V
Maximum conductor resistance (20 °C)	233 Ω/km	350 Ω/km
Minimum insulation resistance (20 °C)	1 MΩ/km	10 GΩ/km
Nominal differential impedance (TDR)	85 Ω	95 Ω ± 5 Ω
Nominal differential capacitance (1 kHz)	110 pF/m	45 pF/m
Propagation velocity	55 %	
Temperature range	- 20 °C ... + 105 °C	- 25 °C ... + 80 °C
<b>Cable materials</b>		
Conductor	7 x 0.13 mm stranded tinned copper	7 x 0.1 mm stranded tinned copper
Insulation (except 50 pairs) (for 50 pairs)	PVC Ø 0.62 mm PVC Ø 0.67 mm	Polypropylene Ø 0.74 mm
Shield	Tinned copper braid, covering ≥ 80 %	Tinned copper braid, covering ≥ 65 %
Jacket	PVC	FRNC
Flammability rating	Flame tested as per UL style 2789	
Sheath marking	AWM 2789 60°C 30V	AWM 21283 80°C 30V VW1

Thin print: Standard version  
Italic print: Halogen free version



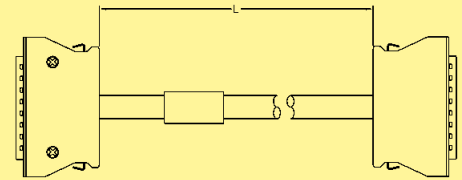
Cable assemblies

Identification	Part No.	Drawing	Dimensions in mm
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Cable assembly *har-mik*®  
pin and socket, 68 pole

Hood: metal hood with top entry  
 Cable: 34 twisted pairs, AWG 28, shielded, PVC  
 Wiring: 1:1

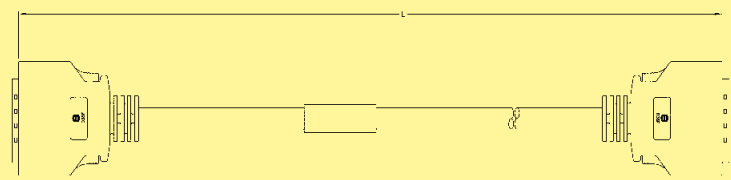
Length: L = 0.5 m	33 60 214 5000 102
L = 1.0 m	33 60 213 1000 103
L = 2.0 m	33 60 213 2000 104
L = 5.0 m	33 60 213 5000 105
L = 10.0 m	33 60 212 1000 106
L = 15.0 m	33 60 212 1500 107
L = 20.0 m	33 60 212 2000 108



Cable assembly *har-mik*®  
bellows, 36 pole

Hood: shielded plastic hood with top entry  
 Cable: 18 twisted pairs, AWG 28, shielded, PVC  
 Wiring: 1:1

Length: L = 0.5 m	33 60 214 5000 088
L = 1.0 m	33 60 211 0010 089
L = 2.0 m	33 60 211 0020 090
L = 5.0 m	33 60 211 0050 091
L = 10.0 m	33 60 211 0100 092
L = 15.0 m	33 60 211 0150 093
L = 20.0 m	33 60 211 0200 094





Cables for insulation displacement termination

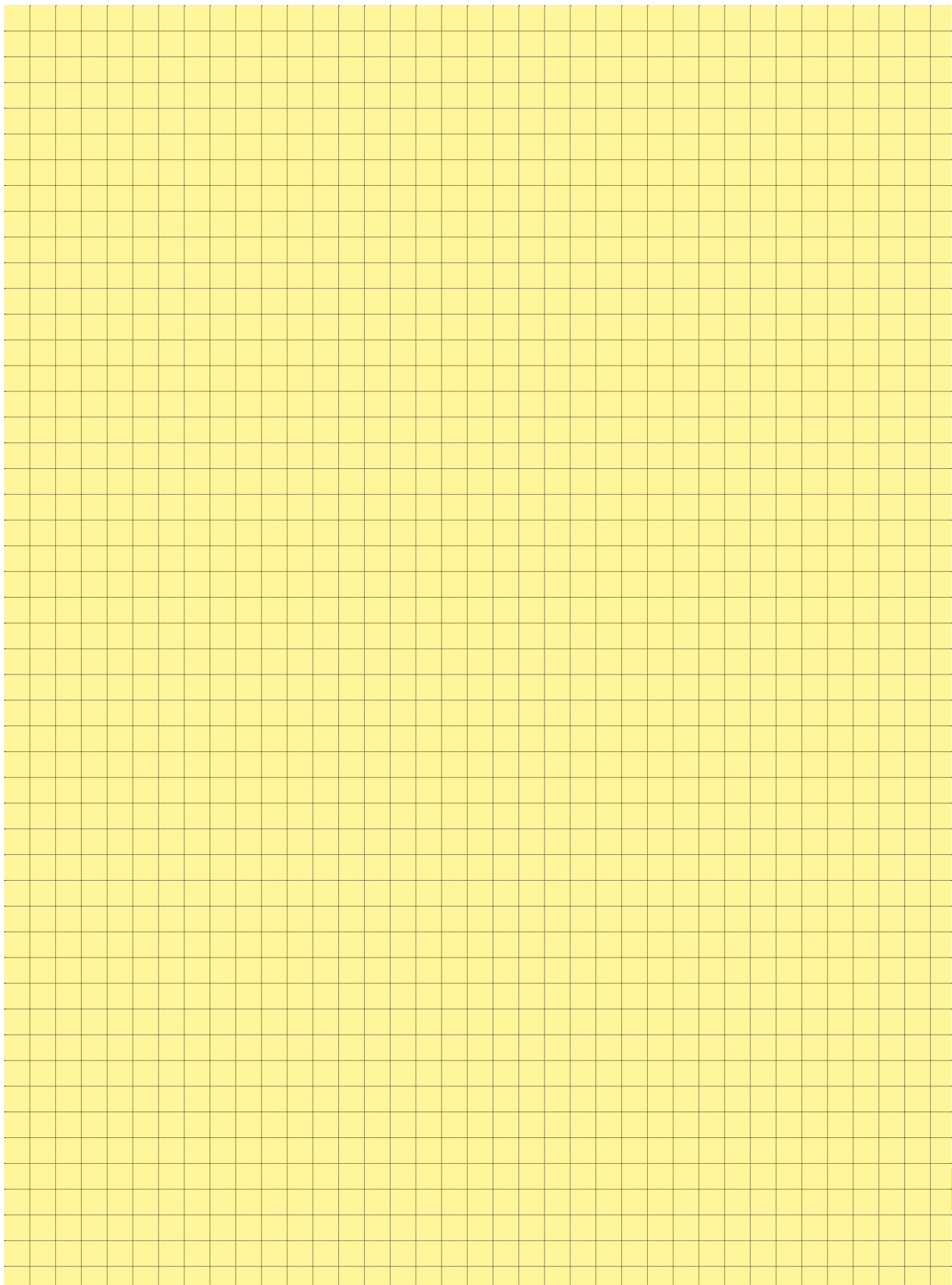
Identification	No. of wires	Part No.
Flat cable for IDC connector Pitch 0.635 mm AWG 30		
Length per reel: 100 ft 30.48 m	50 68	60 90 050 6008 60 90 068 6008

**Drawing** Dimensions in mm

	a	b	c	d
	± 0.25	± 0.05	± 0.2	± 0.05
50	31.75	0.635	31.12	0.68
68	43.20	0.635	42.55	0.68

The tolerance b is not cumulative

Technical characteristics	
Number of wires	50, 68
Voltage rating	150 V
Current rating	1.5 A max. per conductor
Impedance	75 Ω
Nominal differential capacitance (1 kHz)	90 pF/m
Pitch	0.635 mm
UL style	2678
Cables Temperature range	- 30 °C ... + 105 °C
Materials	
Conductor	7 x 0.102 mm regular tinning or Z-bonding AWG 30
Insulation	PVC





Cable assemblies

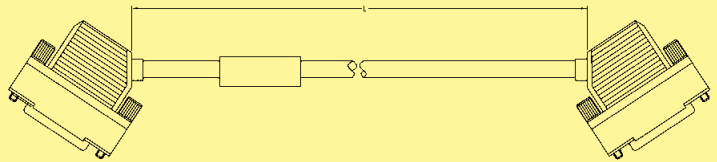
Identification	Part No.	Drawing	Dimensions in mm
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**Cable assembly D-Sub HD 78 pole**

Hood: shielded plastic hood with side entry, screw 4-40 UNC  
 Cable: 39 twisted pairs, AWG 26, double shielded, PVC  
 Wiring: 1:1

Length: L = 0.5 m  
 L = 1.0 m  
 L = 2.0 m  
 L = 5.0 m  
 L = 10.0 m  
 L = 20.0 m

33 56 212 0050 028  
 33 56 213 1000 002  
 33 56 213 2000 016  
 33 56 212 0500 029  
 33 56 212 1000 030  
 33 56 212 2000 031

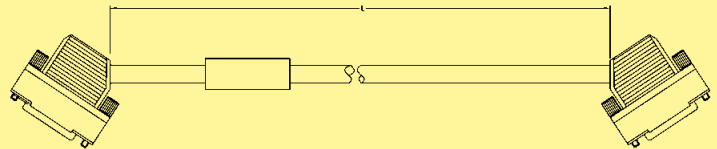


**Cable assembly D-Sub HD 44 pole**

Hood: shielded plastic hood with side entry, screw 4-40 UNC  
 Cable: 22 twisted pairs, AWG 26, double shielded, PVC  
 Wiring: 1:1

Length: L = 0.5 m  
 L = 1.0 m  
 L = 1.5 m  
 L = 2.0 m  
 L = 5.0 m  
 L = 10.0 m

33 56 213 0500 023  
 33 56 213 1000 024  
 33 56 213 1500 022  
 33 56 213 2000 025  
 33 56 213 5000 026  
 33 56 212 1000 027

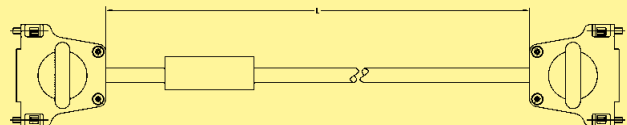


**Cable assembly D-Sub HD 44 pole**

Hood: metal hood with top entry, screw 4-40 UNC  
 Cable: 24 twisted pairs, AWG 26, double shielded, PVC  
 Wiring: 1:1

Length: L = 0.5 m  
 L = 1.0 m  
 L = 5.0 m  
 L = 10.0 m  
 L = 20.0 m

33 56 212 0050 032  
 33 56 212 0100 033  
 33 56 212 0500 034  
 33 56 212 1000 035  
 33 56 212 2000 036









Cables for insulation displacement termination

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
<b>Flat cable</b> grey UL AWM-style 2651 CSA	6	09 18 006 700 □		Conductor material _____ Copper tinned Gauge _____ AWG 28/7 0.089 mm <sup>2</sup> Voltage rating _____ 300 V <sub>r.m.s.</sub> Current rating at 25 °C _____ 2.1 A max. Capacity unbalanced _____ 45.9 pF/m Impedance unbalanced _____ 105 Ω Propagation delay _____ 4.9 ns/m nominal Insulation material _____ PVC Temperature rating (operating) _____ -20 °C ... +105 °C Temperature rating (static) _____ -30 °C ... +105 °C Flammability rating _____ UL: VW-1 Insulation resistance _____ > 100 MΩ/km
	9	09 18 009 700 □		
	10	09 18 010 700 □		
	14	09 18 014 700 □		
	15	09 18 015 700 □		
	16	09 18 016 700 □		
	18	09 18 018 700 □		
	20	09 18 020 700 □		
	24	09 18 024 700 □		
	25	09 18 025 700 □		
	26	09 18 026 700 □		
	28	09 18 028 700 □		
	30	09 18 030 700 □		
	34	09 18 034 700 □		
	37	09 18 037 700 □		
	40	09 18 040 700 □		
	Length per reel	50		
60		09 18 060 700 □		
64	09 18 064 700 □			
30.48 m (100 feet)	1			
100 m (328 feet)	4			
<b>Flat cable</b> grey non-halogenated UL style 21447 for VW-1	6	09 18 006 700 □ 900		Conductor material _____ Copper tinned Gauge _____ AWG 28/7 0.089 mm <sup>2</sup> Voltage rating _____ 300 V <sub>r.m.s.</sub> Current rating _____ 1.3 A Capacity unbalanced _____ 42.6 pF/m at 1 MHz Impedance unbalanced _____ 100 Ω Inductance _____ 0.56 μH/m Propagation delay _____ 4.8 ns/m Insulation material _____ Non-halogenated flame retardent Polyolefin Temperature rating _____ -40 °C ... +80 °C Insulation resistance _____ 10000 MΩ/km
	9	09 18 009 700 □ 900		
	10	09 18 010 700 □ 900		
	14	09 18 014 700 □ 900		
	15	09 18 015 700 □ 900		
	16	09 18 016 700 □ 900		
	18	09 18 018 700 □ 900		
	20	09 18 020 700 □ 900		
	24	09 18 024 700 □ 900		
	25	09 18 025 700 □ 900		
	26	09 18 026 700 □ 900		
	28	09 18 028 700 □ 900		
	34	09 18 034 700 □ 900		
	37	09 18 037 700 □ 900		
	40	09 18 040 700 □ 900		
	50	09 18 050 700 □ 900		
	60	09 18 060 700 □ 900		
64	09 18 064 700 □ 900			
Length per reel	50	09 18 050 700 □ 900		Conductor material _____ Copper tinned Gauge _____ AWG 28/7 0.089 mm <sup>2</sup> Voltage rating _____ 300 V <sub>r.m.s.</sub> Current rating _____ 1.3 A Capacity unbalanced _____ 42.6 pF/m at 1 MHz Impedance unbalanced _____ 100 Ω Inductance _____ 0.56 μH/m Propagation delay _____ 4.8 ns/m Insulation material _____ Non-halogenated flame retardent Polyolefin Temperature rating _____ -40 °C ... +80 °C Insulation resistance _____ 10000 MΩ/km
	60	09 18 060 700 □ 900		
64	09 18 064 700 □ 900			
30.48 m (100 feet)	1			

Important: always store reel vertically

Cables for insulation displacement termination

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
<b>Flat cable</b> colour coded  Length per reel 30.48 m (100 feet)  UL AWM-style 2651	6 9 10 14 15 16 18 20 24 25 26 28 30 34 37 40 50 60 64	09 18 006 7005 09 18 009 7005 09 18 010 7005 09 18 014 7005 09 18 015 7005 09 18 016 7005 09 18 018 7005 09 18 020 7005 09 18 024 7005 09 18 025 7005 09 18 026 7005 09 18 028 7005 09 18 030 7005 09 18 034 7005 09 18 037 7005 09 18 040 7005 09 18 050 7005 09 18 060 7005 09 18 064 7005	<p>Colour code sequence (in 10 steps) brown, red, orange, yellow, green, blue, violet, grey, white, black</p> <p>Conductor material _____ Copper tinned                      Gauge _____ AWG 28/7 0.09 mm<sup>2</sup>                      Voltage rating _____ 300 V<sub>r.m.s.</sub>                      Current rating at 25 °C _____ 2.1 A max.                      Conductor resistance _____ 221 mΩ/m                      Capacity unbalanced _____ 42.7 pF/m                      Impedance unbalanced _____ 105 Ω                      Inductance unbalanced _____ 0.68 μH/m                      Signal delay _____ 4.9 ns/m                      Insulation material _____ PVC                      Temperature rating (operating) _____ -20 °C ... + 105 °C                      Temperature rating (static) _____ -30 °C ... + 105 °C                      Flammability rating _____ UL: VW 1                      Insulation resistance _____ 100 MΩ/km</p>	
<b>Flat cable</b> twisted pair  Length per reel 30.48 m (100 feet)  UL AWM-style 20 130	10 14 16 20 26 34 40 50 60 64	09 18 010 7006 09 18 014 7006 09 18 016 7006 09 18 020 7006 09 18 026 7006 09 18 034 7006 09 18 040 7006 09 18 050 7006 09 18 060 7006 09 18 064 7006	<p>Conductor material _____ Copper tinned                      Gauge _____ AWG 28/7 0.089 mm<sup>2</sup>                      Voltage rating _____ 300 V<sub>r.m.s.</sub>                      Conductor resistance _____ 221 mΩ/m                      Capacity unbalanced _____ 49 pF/m                      Impedance unbalanced _____ 105 Ω                      Signal delay _____ 5.2 ns/m                      Insulation material _____ PVC                      Temperature rating _____ -20 °C ... + 105 °C                      Flammability rating _____ UL: VW 1                      Insulation resistance _____ 10<sup>4</sup> MΩ/km</p>	

## Cables for insulation displacement termination

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
<b>Round flat cable</b>				
with screening (shielding)				
	9	09 18 009 70		ø max. 6.86
	10	09 18 010 70		6.86
	14	09 18 014 70		7.37
	15	09 18 015 70		7.62
UL listed PLCC CL2	16	09 18 016 70		7.87
CSA certified AWM FT-1	20	09 18 020 70		8.38
	25	09 18 025 70		9.14
	26	09 18 026 70		9.14
	34	09 18 034 70		10.16
	37	09 18 037 70		10.41
	40	09 18 040 70		10.92
Length per reel	50	09 18 050 70		12.19
	60	09 18 060 70		13.21
	64	09 18 064 70		13.46
30.48 m (100 feet)	07			
100 m (328 feet)	10*			
without screening (shielding)				
	9	09 18 009 70		6.35
	10	09 18 010 70		6.35
	14	09 18 014 70		6.60
	15	09 18 015 70		6.86
UL listed PLCC CL2	16	09 18 016 70		7.11
CSA certified AWM FT-1	20	09 18 020 70		7.62
	25	09 18 025 70		8.38
	26	09 18 026 70		8.38
	34	09 18 034 70		9.40
	37	09 18 037 70		9.65
	40	09 18 040 70		10.16
Length per reel	50	09 18 050 70		11.43
	60	09 18 060 70		12.45
	64	09 18 064 70		12.70
30.48 m (100 feet)	08			
100 m (328 feet)	11*			

No. of contacts	a	b	c
9 to 26	19.05	19.05	38.10
34 to 64	38.10	19.05	57.15

Conductor material \_\_\_\_\_ Copper tinned  
 Gauge \_\_\_\_\_ AWG 28/7 0.089 mm<sup>2</sup>  
 Voltage rating \_\_\_\_\_ 300 V<sub>r.m.s.</sub>  
 Conductor resistance \_\_\_\_\_ 225 mΩ/m  
 Capacity unbalanced \_\_\_\_\_ 78.7 pF/m  
 Impedance unbalanced \_\_\_\_\_ 75 Ω  
 Signal delay \_\_\_\_\_ 5.25 ns/m nom.  
 Insulation material \_\_\_\_\_ PVC  
 Temperature rating \_\_\_\_\_ -20 °C ... + 105 °C  
 Flammability rating \_\_\_\_\_ UL: VW 1  
 Insulation resistance \_\_\_\_\_ 10<sup>4</sup> MΩ/km

\* Not normally kept in stock  
 Important: always store reels vertically

