



Pushing Performance

HARTING Cable Assemblies



People | Power | Partnership

Transforming customer wishes into concrete solutions



The HARTING Technology Group is skilled in the fields of electrical, electronic and optical connection, transmission and networking, as well as in manufacturing, mechatronics and software creation.

The Group uses these skills to develop customized solutions and products such as connectors for energy and data transmission applications including, for example, mechanical engineering, rail technology, wind energy plants, factory automation and the telecommunications sector. In addition, HARTING also produces electromagnetic components for the automobile industry and offers solutions in the field of Enclosures and Shop Systems.

The HARTING Group currently comprises 32 subsidiary employing approx. 3,000 staff.



HARTING Subsidiary company



HARTING Representatives

ALWAYS AT HAND, WHEREVER OUR CUSTOMERS MAY BE.

Increasing industrialization is creating growing markets characterized by widely diverging demands and requirements. The search for perfection, increasingly efficient processes and reliable technologies is a common factor in all sectors across the globe. HARTING is providing these technologies – in Europe, America and Asia. The HARTING professionals at our international subsidiaries engage in close, partnership based interaction with our customers, right from the very early product development phases, in order to realize customer demands and requirements in the best possible manner.

Our people on location form the interface to the centrally coordinated development and production departments. In this way, our customers can rely on consistently high, superior product quality – worldwide.

OUR CLAIM: PUSHING PERFORMANCE.

HARTING provides more than optimally attuned components. In order to serve our customers with the best possible solutions, HARTING is able to contribute a great deal more and play a closely integrative role in the value creation process.

From ready assembled cables through to control racks or ready-to-go control desks: Our aim is to generate the maximum benefits for our customers – without compromise!

QUALITY CREATES RELIABILITY – AND WARRANTS TRUST.

The HARTING brand stands for superior quality and reliability – worldwide. The standards we set are the result of consistent, stringent quality management that is subject to regular certifications and audits.

EN ISO 9001, the EU Eco-Audit and ISO 14001:2004 are key elements here. We take a proactive stance to new requirements, which is why HARTING ranks among the first companies worldwide to have obtained the new IRIS quality certificate for rail vehicles.

WE ASPIRE TO TOP PERFORMANCE.

Connectors ensure functionality. As core elements of electrical and optical wiring, connection and infrastructure technologies, they are essential in enabling the modular construction of devices, machines and systems across a very wide range of industrial applications. Their reliability is a crucial factor guaranteeing smooth functioning in the manufacturing area, in telecommunications, applications in medical technology – in fact, connectors are at work in virtually every conceivable application area. Thanks to the consistent further development of our technologies, customers enjoy investment security and benefit from durable, long term functionality.

HARTING TECHNOLOGY CREATES ADDED VALUE FOR CUSTOMERS.

Technologies by HARTING are at work worldwide. HARTING's presence stands for smoothly functioning systems, powered by intelligent connectors, smart infrastructure solutions and mature network systems. In the course of many years of close, trust-based cooperation with its customers, the HARTING Technology Group has advanced to one of the worldwide leading specialists for connector technology. Extending beyond the basic functionalities demanded, we offer individual customers specific and innovative solutions. These tailored solutions deliver sustained effects, provide investment security and enable customers to achieve strong added value.

OPTING FOR HARTING OPENS UP AN INNOVATIVE, COMPLEX WORLD OF CONCEPTS AND IDEAS.

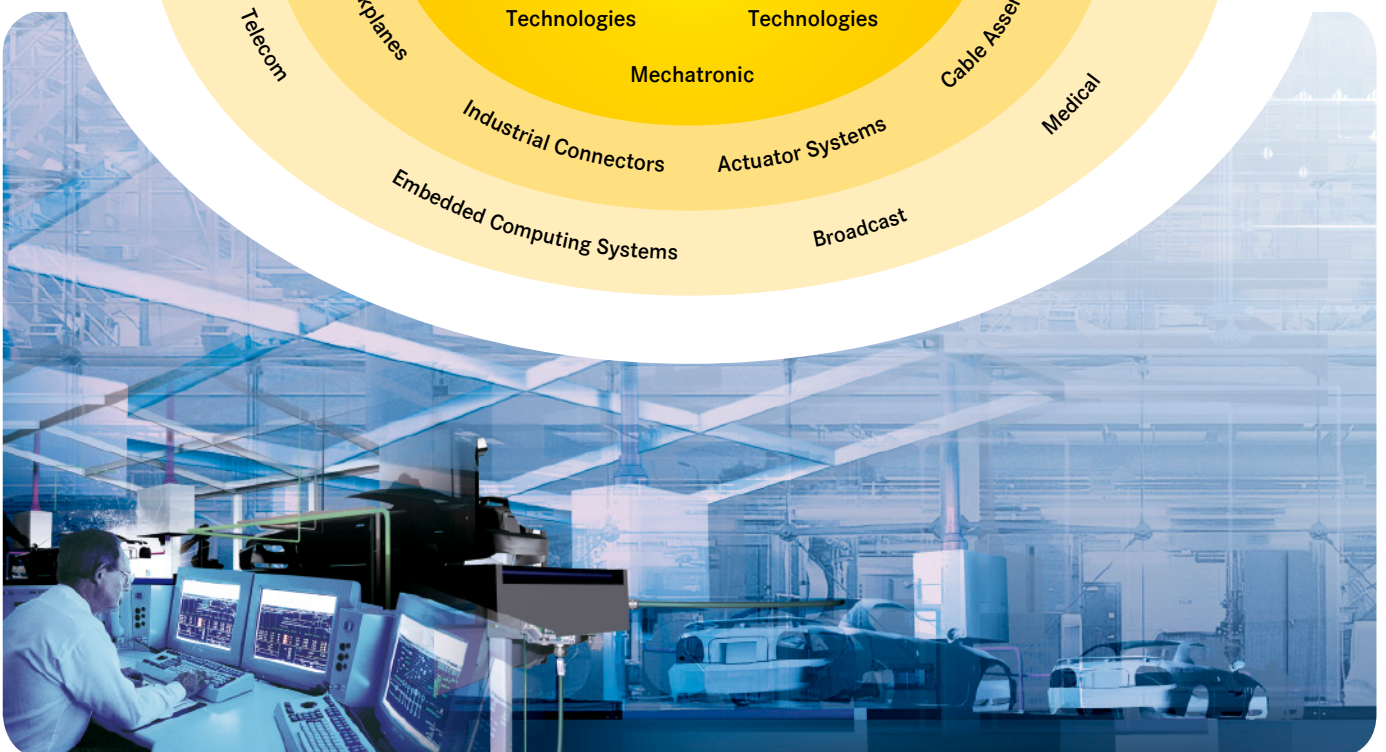
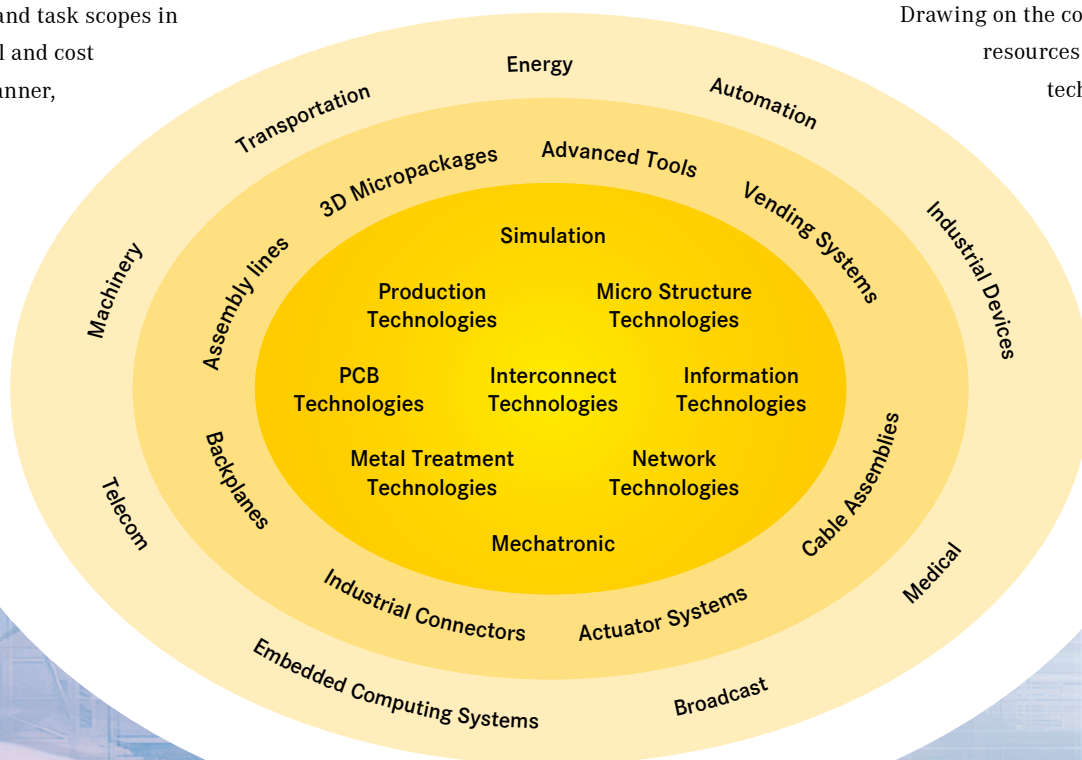
In order to develop connectivity and network solutions serving an exceptionally wide range of connector applications and task scopes in a professional and cost optimized manner, HARTING not only

commands the full array of conventional tools and basic technologies. Over and beyond these capabilities, HARTING is constantly harnessing and refining its broad base of knowledge and experience to create new solutions that ensure continuity at the same time. In securing this know-how lead, HARTING draws on a wealth of sources from both in-house research and the world of applications alike.

Salient examples of these sources of innovative knowledge include microstructure technologies, 3D design and construction technology, as well as high temperature or ultrahigh frequency applications that are finding use in telecommunications or automation networks, in the automotive industry, or in industrial sensor and actuator applications, RFID and wireless technologies, in addition to packaging and housing made of plastics, aluminum or stainless steel.

HARTING SOLUTIONS EXTEND ACROSS TECHNOLOGY BOUNDARIES.

Drawing on the comprehensive resources of the group's technology pool, HARTING devises



practical solutions for its customers. Whether this involves industrial networks for manufacturing automation, or hybrid interface solutions for wireless telecommunication infrastructures, 3D circuit carriers with microstructures, or cable assemblies for high-temperature applications in the automotive industry – HARTING technologies offer far more than components, and represent mature, comprehensive solutions attuned to individual customer requirements and wishes. The range covers ready-to-use cable configurations, completely assembled backplanes and board system carriers, as well as fully wired and tested control panels.

In order to ensure the future proof design of RF- and EMC-compatible interface solutions, the central HARTING laboratory (certified to EN 45001) provides simulation tools, as well as experimental, testing and diagnostics facilities all the way through to scanning electron microscopes. In the selection of materials and processes, lifecycle and environmental aspects play a key role, in addition to product and process capability considerations.

HARTING KNOWLEDGE IS PRACTICAL KNOW-HOW GENERATING SYNERGY EFFECTS.

HARTING commands decades of experience with regard to the applications conditions of connectors in telecommunications, computer and network technologies and medical technologies, as well as industrial automation technologies, such as the mechanical engineering and plant engineering areas, in addition to the power generation industry or the transportation sector. HARTING is highly conversant with the specific application areas in all of these technology fields.

The key focus is on applications in every solution approach. In this context, uncompromising, superior quality is our hallmark. Every new solution found will invariably flow back into the HARTING technology pool, thereby enriching our resources. And every new solution we go on to create will draw on this wealth of resources in order to optimize each and every individual solution. In this way, HARTING is synergy in action.



The cabling represents the backbone of an application. Mistakes during the selection and laying of cables may lead to serious errors in data transfer, data loss and even total network failure. Especially in the demanding environments, reliable



and fully functional cables are an important element in planning and implementing high-performance networks ensuring a high degree of availability.

HARTING offers a wide range of cable assemblies, which are specially designed for use in different environment. Data transfer in the Categories 5, 6 and 7 according to ISO/IEC 11801 is supported.

Additionally options like solid, stranded, or trailing cable are provided. Oil resistance, high mechanical stability and halogen-free are only a few of the features **HARTING** demands from on its cables.

The range of **HARTING** cable assemblies uses these upscale cables combined with high-grade

connectors. All of them use different types of connectors like har-mik®, har-link®, **HARTING** PushPull, fibre optic and many more.

All **HARTING** cable assemblies provide an optimized electrical and mechanical support. Since these products are tested 100 % a stable quality on a high level can be assured. Without having any assembly work the application can “play” by “unpacking and plug”, so that “plug and play” becomes reality.

By covering various lengths and supporting customized solutions, including overmoulding, a wide range of applications can be served. For the overmoulding solutions we offer different materials like PVC, PUR and more. The overmoulding solution can be used with inner shielding or without. **HARTING** offers both standard cable assemblies and customer specific versions for small and high volumes!



<i>Indoor cable assemblies</i>	01
<i>Outdoor cable assemblies</i>	02
<i>Industrial Ethernet cable assemblies</i>	03
<i>Customized solutions</i>	04
<i>Locations</i>	10

HARTING offers cable assemblies by utilising the well-known connectors har-mik®, har-link®, D-Sub and SEK.

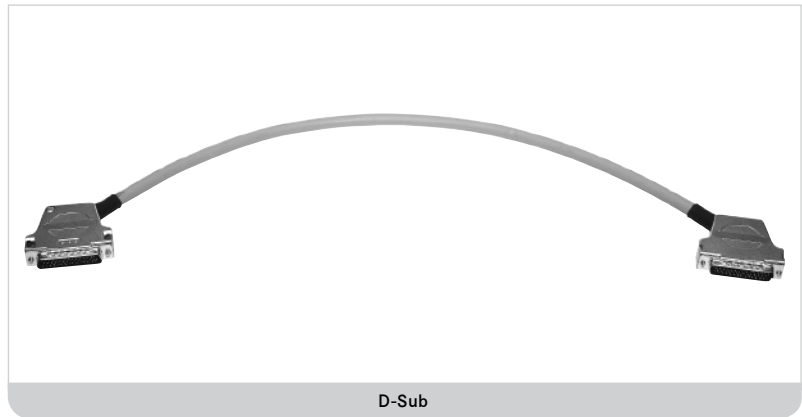
The har-link® cable assemblies have excellent data transmission properties for high speed

The time transmission test (eye pattern) shows opened eye-diagram of har-link® cable assemblies at a transmission data rate up to 100 Mbps.

HARTING offers a wide range of D-Sub contacts with perfect crimp connection.



har-link®



D-Sub

networking and telecommunications. In addition har-link® supports hot plugging as required by modern bus system such as CompactPCI, S-bus and VME.

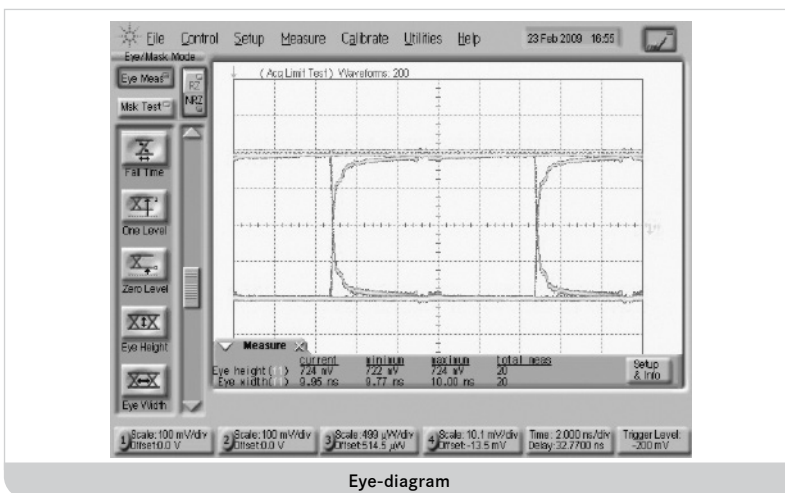
har-link® cable assemblies allow data transmission up to 2 Gbit/s per pair and are therefore perfectly suited for modern transmission protocols such as low voltage differential signals. The design of the har-link® connector allows differential pairs to be placed horizontally, thus reducing the skew at high frequencies and considering high signal integrity.

HARTING uses nickel plated D-Sub contacts. The advantage in this case is that no “Whisker creation” is guaranteed.

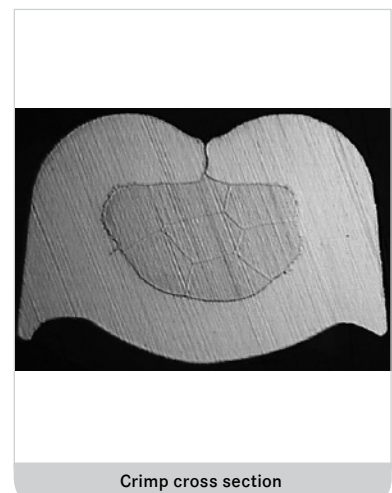
Furthermore **HARTING** fulfils all crimp norms (DIN/IEC 60352-2) which are important for crimp connections. Tensile strength will be tested from **HARTING** as well in accordance to IEC 60512.

HARTING crimp contacts are fit for different cores, AWG 20, 21, 22, 24, 26 and 28.

The **HARTING** portfolio covers high density versions including different polarisation as well.



Eye-diagram



Crimp cross section

Content

Page

harlink®	01.02
harmik®	01.03
D-Sub / SEK	01.06



Identification

Part No.

Drawing

Dimensions [mm]

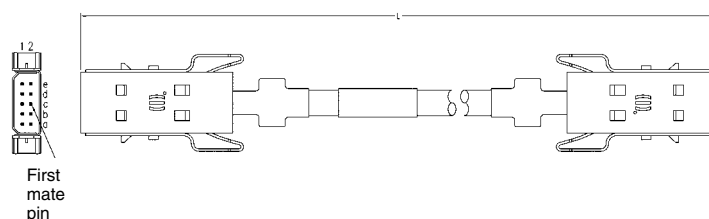
Standard cable assembly
har-link® 10 pole, male

Cable: 5 twisted pairs,
AWG 28, shielded, PVC

Wiring: 1:1

Length: L = 0.5 m
L = 1.0 m
L = 2.0 m

33 27 243 0500 001
33 27 243 1000 002
33 27 243 2000 003



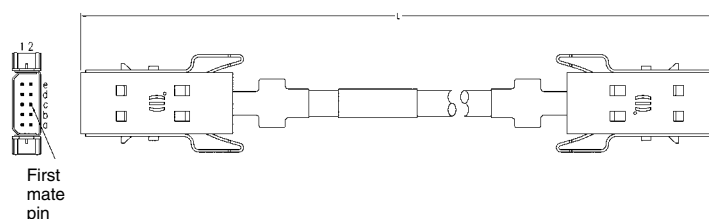
High end cable assembly
har-link® 10 pole, male

Cable: 5 twisted pairs,
AWG 30, double
shielded, PVC

Wiring: 1:1

Length: L = 0.5 m
L = 1.0 m
L = 2.0 m

33 27 243 0500 006
33 27 243 1000 007
33 27 243 2000 008



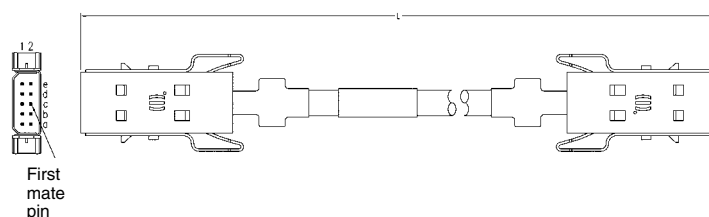
High end cable assembly
har-link® 10 pole, male

Cable: 5 twisted pairs,
AWG 30, double
shielded, PVC

Wiring: acc. to IEEE 1355

Length: L = 0.5 m
L = 1.0 m
L = 2.0 m

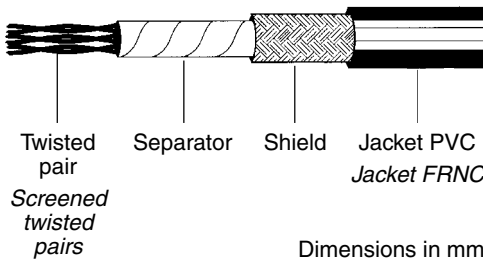
33 27 243 0500 015
33 27 243 1000 016
33 27 243 2000 017



IEEE 1355 wiring

Connector 1	Connector 2
2-e	1-a
1-e	2-a
2-d	1-b
1-d	2-b
2-c	2-c
1-c	1-c
2-b	1-d
1-b	2-d
2-a	1-e
1-a	2-e

Cables for insulation displacement termination

Identification	No. of pairs	Standard version	Part No. <i>Halogen free version with screened pairs</i>																																										
Twisted pair cable with braid shield AWG 28 AWG 30 Length per reel: 100 m*	5 10 13 14 18 20 25 34 40 48 50	60 90 005 6003 60 90 010 6003 60 90 013 6003 60 90 014 6003 60 90 018 6003 60 90 020 6003 60 90 025 6003 60 90 034 6003 60 90 040 6003 60 90 048 6003 60 90 050 6003	60 90 005 6009																																										
Drawing	<table><tr><th rowspan="2">No. of pairs</th><th colspan="2">Outside diameter</th></tr><tr><th>Nominal</th><th>Max</th></tr><tr><td>5</td><td>5.4</td><td>5.6</td></tr><tr><td>10</td><td>6.2</td><td>6.5</td></tr><tr><td>13</td><td>6.5</td><td>6.8</td></tr><tr><td>14</td><td>6.5</td><td>6.8</td></tr><tr><td>18</td><td>7.4</td><td>7.7</td></tr><tr><td>20</td><td>7.7</td><td>8.2</td></tr><tr><td>25</td><td>8.2</td><td>8.5</td></tr><tr><td>34</td><td>8.7</td><td>9.0</td></tr><tr><td>40</td><td>9.9</td><td>10.4</td></tr><tr><td>48</td><td>10.1</td><td>10.6</td></tr><tr><td>50</td><td>13.0</td><td>13.5</td></tr></table> <table><tr><th>No. of pairs</th><th>Outside diameter</th></tr><tr><td>5</td><td>5.5 ± 0.3</td></tr></table>  Twisted pair Separator Shield Jacket PVC Jacket FRNC Dimensions in mm			No. of pairs	Outside diameter		Nominal	Max	5	5.4	5.6	10	6.2	6.5	13	6.5	6.8	14	6.5	6.8	18	7.4	7.7	20	7.7	8.2	25	8.2	8.5	34	8.7	9.0	40	9.9	10.4	48	10.1	10.6	50	13.0	13.5	No. of pairs	Outside diameter	5	5.5 ± 0.3
No. of pairs	Outside diameter																																												
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5	5.4	5.6																																											
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25	8.2	8.5																																											
34	8.7	9.0																																											
40	9.9	10.4																																											
48	10.1	10.6																																											
50	13.0	13.5																																											
No. of pairs	Outside diameter																																												
5	5.5 ± 0.3																																												
Technical characteristics																																													
	Standard version	<i>Halogen free version with screened pairs</i>																																											
Number of pairs	5, 10, 13, 14, 18, 20, 25, 34, 40, 48, 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	60 %																																												
Temperature range	– 20 °C ... + 105 °C	– 25 °C ... + 80 °C																																											
Cable materials																																													
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 0.65 – 0.80 mm	Polypropylene Ø 0.74 mm																																											
Shield	Tinned copper braid, covering ≥ 80 %	Tinned copper braid, covering ≥ 65 %																																											
Jacket	PVC	FRNC																																											
Flammability rating	IEC 332-1																																												
Sheath marking	 AWM 2789 60°C 30V VW1 36963	 AWM 21283 80°C 30V VW1																																											

* Except 60 90 050 6003: 150 m reel
Italic print: Halogen free version



Identification

Part No.

Drawing

Dimensions [mm]

**Cable assembly har-mik®
pin and socket, 68 pole,
male**

Hood: metal hood with top
entry

Cable: 34 twisted pairs,
AWG 28, 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 = 15.0 m

L = 20.0 m

33 60 214 5000 102

33 60 213 1000 103

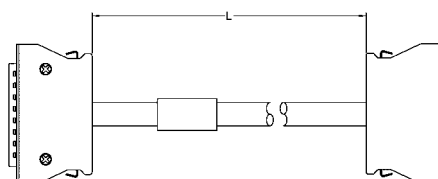
33 60 213 2000 104

33 60 213 5000 105

33 60 212 1000 106

33 60 212 1500 107

33 60 212 2000 108



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

Hood: shielded plastic hood
with top entry

Cable: 18 twisted pairs,
AWG 28, 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 = 15.0 m

L = 20.0 m

33 60 214 5000 088

33 60 211 0010 089

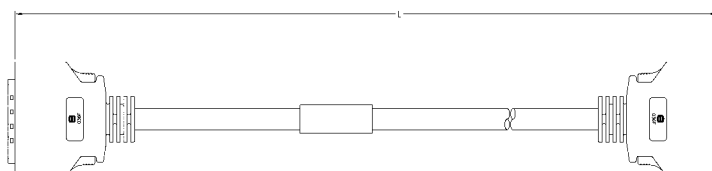
33 60 211 0020 090

33 60 211 0050 091

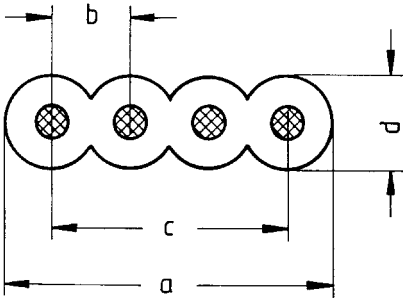
33 60 211 0100 092

33 60 211 0150 093

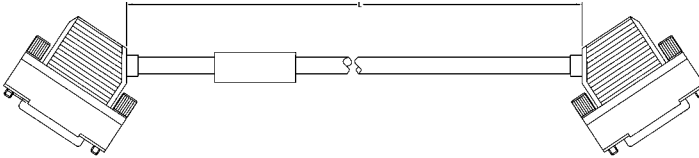
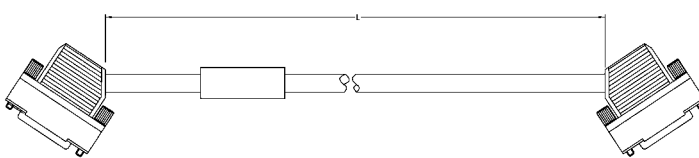
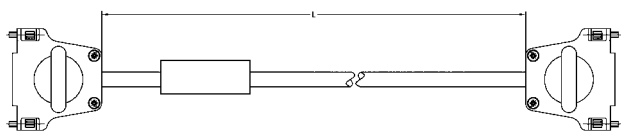
33 60 211 0200 094



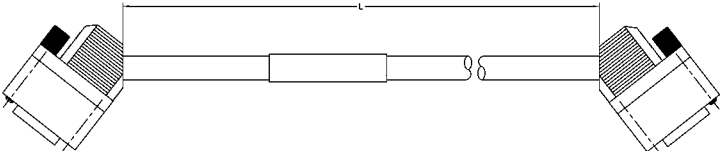
Cables for insulation displacement termination

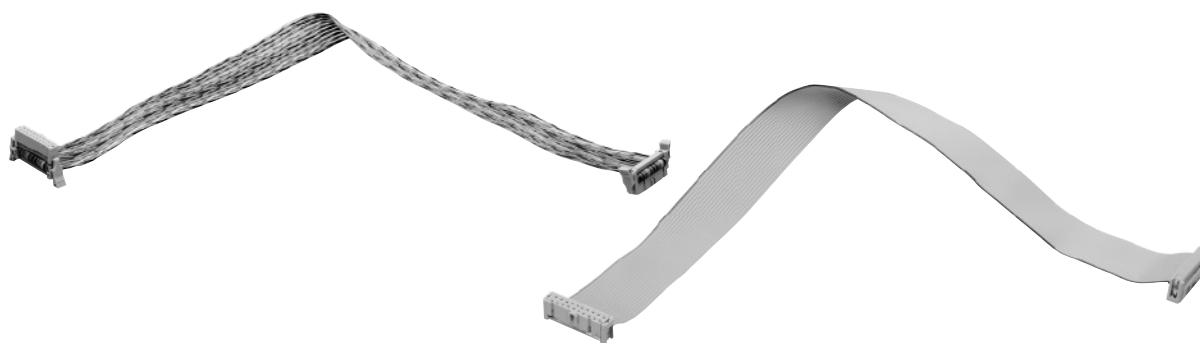
Identification		No. of wires	Part No.																
Flat cable for IDC connector Pitch 0.635 mm AWG 30 Length per reel: 100 ft 30.48 m		50 68	60 90 050 6008 60 90 068 6008																
Drawing		 <table><tr><th></th><th>a ± 0.25</th><th>b ± 0.05</th><th>c ± 0.2</th><th>d ± 0.05</th></tr><tr><td>50</td><td>31.75</td><td>0.635</td><td>31.12</td><td>0.68</td></tr><tr><td>68</td><td>43.20</td><td>0.635</td><td>42.55</td><td>0.68</td></tr></table> The tolerance b is not cumulative Dimensions in mm				a ± 0.25	b ± 0.05	c ± 0.2	d ± 0.05	50	31.75	0.635	31.12	0.68	68	43.20	0.635	42.55	0.68
	a ± 0.25	b ± 0.05	c ± 0.2	d ± 0.05															
50	31.75	0.635	31.12	0.68															
68	43.20	0.635	42.55	0.68															
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		2 678																	
Temperature range		− 30 °C ... + 105 °C																	
Materials		7 x 0.102 mm regular tinning or Z-bonding AWG 30																	
Conductor		PVC																	
Insulation																			



Identification	Part No.	Drawing	Dimensions [mm]
Cable assembly D-Sub HD 78 pole, male 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, male 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, male 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		



Identification	Part No.	Drawing	Dimensions [mm]
Cable assembly D-Sub HD 44 pole, male Hood: overmoulded with side entry Cable: 24 twisted pairs, solid wires, AWG 26, shielded, halogen free Wiring: 1:1 Length: L = 0.5 m L = 1.0 m L = 2.0 m L = 5.0 m	33 56 224 5000 001 33 56 221 0010 001 33 56 221 0020 001 33 56 221 0050 001		
Cable assembly D-Sub 9 pole, male Hood: shielded plastic hood with side entry, screw 4-40 UNC Cable: 5 twisted pairs, stranded, AWG 24, 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	33 66 214 5000 058 33 66 213 1000 059 33 66 213 1500 060 33 66 213 2000 061 33 66 213 5000 062		



01
08

Cables for insulation displacement termination

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
Flat cable grey UL AWM-style 2651 CSA				
	6	09 18 006 700		
	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		
	34	09 18 034 700		
	37	09 18 037 700		
	40	09 18 040 700		
	50	09 18 050 700		
	60	09 18 060 700		
	64	09 18 064 700		
Length per reel 30.48 m (100 feet)	1			
100 m (328 feet)	4			
Flat cable colour coded				
Length per reel 30.48 m (100 feet)				
UL AWM-style 20 130				
	9	09 18 009 7005		
	10	09 18 010 7005		
	14	09 18 014 7005		
	15	09 18 015 7005		
	16	09 18 016 7005		
	20	09 18 020 7005		
	24	09 18 024 7005		
	25	09 18 025 7005		
	26	09 18 026 7005		
	34	09 18 034 7005		
	37	09 18 037 7005		
	40	09 18 040 7005		
	50	09 18 050 7005		
	60	09 18 060 7005		
	64	09 18 064 7005		
			Conductor material _____ Copper tinned Gauge _____ AWG 28/7 0.089 mm ² Voltage rating _____ 300 V _{r.m.s.} 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 _____ -20 °C ... + 105 °C Flammability rating _____ UL: VW 1 Insulation resistance _____ 10 ⁴ MΩ/km	Colour code sequence (in 10 steps) brown, red, orange, yellow, green, blue, violet, grey, white, black

Cables for insulation displacement termination

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm																																				
Flat cable twisted pair Length per reel 30.48 m (100 feet) UL AWM-style 20130	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	<table><tr><td></td><td>Flat cable twisted pair</td><td>Round flat cable with screening without screening</td></tr><tr><td>Insulation material</td><td colspan="2">PVC</td></tr><tr><td>Conductor material</td><td colspan="2">Copper tinned</td></tr><tr><td>Gauge</td><td colspan="2">AWG 28/7 0.089 mm²</td></tr><tr><td>Voltage rating</td><td colspan="2">300 V_{r.m.s.}</td></tr><tr><td>Temperature rating</td><td colspan="2">-20 °C ... + 105 °C</td></tr><tr><td>Flammability rating</td><td colspan="2">UL: VW 1</td></tr><tr><td>Insulation resistance</td><td colspan="2">10⁴ MΩ/km</td></tr><tr><td>Conductor resistance</td><td>221 mΩ/m</td><td>225 mΩ/m</td></tr><tr><td>Capacity unbalanced</td><td>49 pF/m</td><td>78.7 pF/m</td></tr><tr><td>Impedance unbalanced</td><td>105 Ω</td><td>75 Ω</td></tr><tr><td>Signal delay</td><td>5.2 ns/m</td><td>5.25 ns/m nom.</td></tr></table>		Flat cable twisted pair	Round flat cable with screening without screening	Insulation material	PVC		Conductor material	Copper tinned		Gauge	AWG 28/7 0.089 mm²		Voltage rating	300 V _{r.m.s.}		Temperature rating	-20 °C ... + 105 °C		Flammability rating	UL: VW 1		Insulation resistance	10 ⁴ MΩ/km		Conductor resistance	221 mΩ/m	225 mΩ/m	Capacity unbalanced	49 pF/m	78.7 pF/m	Impedance unbalanced	105 Ω	75 Ω	Signal delay	5.2 ns/m	5.25 ns/m nom.	
	Flat cable twisted pair	Round flat cable with screening without screening																																						
Insulation material	PVC																																							
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Impedance unbalanced	105 Ω	75 Ω																																						
Signal delay	5.2 ns/m	5.25 ns/m nom.																																						
Round flat cable with screening (shielding) UL listed PLCC CL2 CSA certified AWM FT-1	9 10 14 15 16 20 25 26 34 37 40 50 60 64	09 18 009 70 09 18 010 70 09 18 014 70 09 18 015 70 09 18 016 70 09 18 020 70 09 18 025 70 09 18 026 70 09 18 034 70 09 18 037 70 09 18 040 70 09 18 050 70 09 18 060 70 09 18 064 70	<table><tr><td>No. of contacts</td><td>a</td><td>b</td><td>c</td></tr><tr><td>6 to 26</td><td>19.05</td><td>19.05</td><td>38.10</td></tr><tr><td>34 to 64</td><td>38.10</td><td>19.05</td><td>57.15</td></tr></table>	No. of contacts	a	b	c	6 to 26	19.05	19.05	38.10	34 to 64	38.10	19.05	57.15																									
No. of contacts	a	b	c																																					
6 to 26	19.05	19.05	38.10																																					
34 to 64	38.10	19.05	57.15																																					
Length per reel 30.48 m (100 feet) 100 m (328 feet)	07 10*																																							
without screening (shielding) UL listed PLCC CL2 CSA certified AWM FT-1	9 10 14 15 16 20 25 26 34 37 40 50 60 64	09 18 009 70 09 18 010 70 09 18 014 70 09 18 015 70 09 18 016 70 09 18 020 70 09 18 025 70 09 18 026 70 09 18 034 70 09 18 037 70 09 18 040 70 09 18 050 70 09 18 060 70 09 18 064 70	<table><tr><td>No. of contacts</td><td>a</td><td>b</td><td>c</td></tr><tr><td>6 to 26</td><td>19.05</td><td>19.05</td><td>38.10</td></tr><tr><td>34 to 64</td><td>38.10</td><td>19.05</td><td>57.15</td></tr></table>	No. of contacts	a	b	c	6 to 26	19.05	19.05	38.10	34 to 64	38.10	19.05	57.15																									
No. of contacts	a	b	c																																					
6 to 26	19.05	19.05	38.10																																					
34 to 64	38.10	19.05	57.15																																					
Length per reel 30.48 m (100 feet) 100 m (328 feet)	08 11*																																							

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

HARTING offers a wide range of cable assemblies in either copper, hybrid (power and data) or fibre optic based around its comprehensive range of I/O connectors.

These cable assemblies are manufactured using the innovative **HARTING** PushPull technology and the classic Han® 3 A housings with different kinds of inserts. These housings are available in either metal or plastic.

The selected materials and the special manufacturing processes allow the use of **HARTING** cable assemblies under such environmental conditions that are also characterized through

extreme fluctuations of temperature, high ozone levels and ultraviolet radiation.

The **HARTING** product portfolio offers fully assembled 100 % tested cable harnesses and removes the need for on-site assembly activity. Customer specific requirements are available on request.

The application range of **HARTING** cable assemblies are amongst others in telecom outdoor and wind energy. Right in the outdoor area on base stations **HARTING** cable assemblies are ideally suited for easier handling, transportation and reduced installation time.



HARTING Outdoor Solutions

Content

Page

***HARTING PushPull, Fibre optic, LC duplex* 02.02**

***Han® 3 A, Fibre optic, 2 x LC duplex* 02.05**

***Han® 3 A, Hybrid fibre optic, LC duplex* 02.07**

***Han® 3 A, Hybrid RJ45* 02.09**

***Han® 3 A, RJ45 · HARTING PushPull, RJ45* 02.10**



Fibre optic
LC duplex single mode

Identification	Part No.	Drawing	Dimensions in mm
Fibre optic cable, double ended, single mode Length: a = 1 m a = 5 m a = 10 m a = 20 m a = 40 m a = 50 m a = 100 m	33 58 211 0010 002 33 58 211 0050 002 33 58 211 0100 002 33 58 211 0200 002 33 58 211 0400 002 33 58 211 0500 002 33 58 211 1000 002	double ended a = length	
Fibre optic cable, single ended, single mode Length: a = 1 m a = 5 m a = 10 m a = 20 m a = 40 m a = 50 m a = 100 m	33 58 111 0010 002 33 58 111 0050 002 33 58 111 0100 002 33 58 111 0200 002 33 58 111 0400 002 33 58 111 0500 002 33 58 111 1000 002	single ended a = length	Protection level: IP 65 / IP 67
Fibre optic breakout cable, single mode Length: 10 m Length: 20 m Length: 100 m	33 58 751 0100 002 33 58 751 0200 002 33 58 751 1000 002	 PUR jacket 2-fibre single mode Outer diameter: 6.5 mm Min. bending radius: 10.4 cm Installation: 5.2 cm Operating: 5.2 cm	



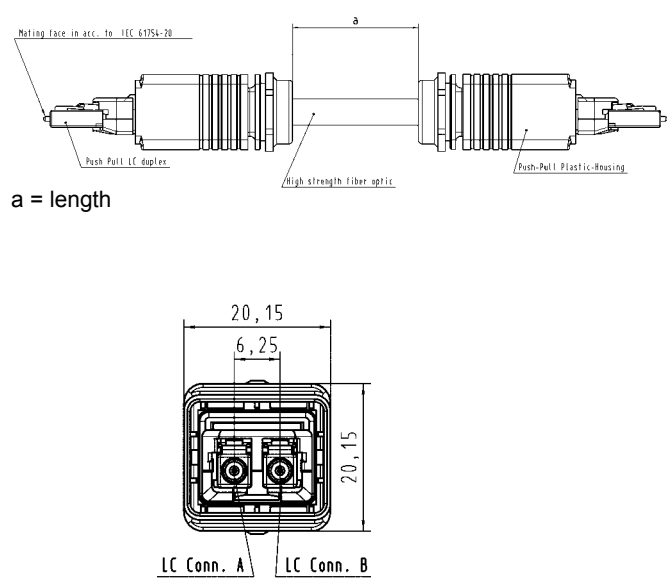
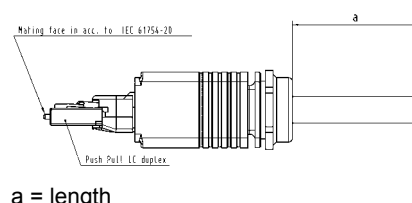
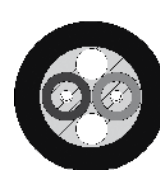
Fibre optic
LC duplex multi mode, 50 μm

Identification	Part No.	Drawing	Dimensions in mm
Fibre optic cable, double ended, multi mode, 50 μm Length: a = 1 m a = 5 m a = 10 m a = 20 m a = 40 m a = 50 m a = 100 m	33 58 211 0010 004 33 58 211 0050 004 33 58 211 0100 004 33 58 211 0200 004 33 58 211 0400 004 33 58 211 0500 004 33 58 211 1000 004	double ended a = length	
Fibre optic cable, single ended, multi mode, 50 μm Length: a = 1 m a = 5 m a = 10 m a = 20 m a = 40 m a = 50 m a = 100 m	33 58 111 0010 004 33 58 111 0050 004 33 58 111 0100 004 33 58 111 0200 004 33 58 111 0400 004 33 58 111 0500 004 33 58 111 1000 004	Protection level: IP 65 / IP 67 single ended a = length	
Fibre optic breakout cable , multi mode, 50 μm Length: 10 m Length: 20 m Length: 100 m	33 58 751 0100 003 33 58 751 0200 003 33 58 751 1000 003	FRNC jacket 2-fibre multi mode 50 μm Outer diameter: 7.9 mm Min. bending radius: Installation: 9.8 cm Operating: 7.9 cm	

Further cable lengths are available on request

Fibre optic
LC duplex multi mode, 62.5 μ m

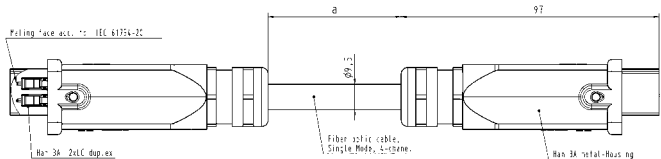
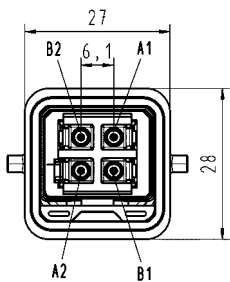
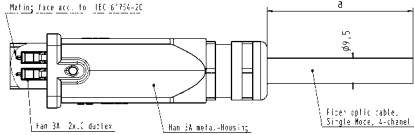


Identification	Part No.	Drawing	Dimensions in mm
Fibre optic cable, double ended, multi mode, 62.5 μm Length: a = 1 m a = 5 m a = 10 m a = 20 m a = 40 m a = 50 m a = 100 m	33 58 211 0010 001 33 58 211 0050 001 33 58 211 0100 001 33 58 211 0200 001 33 58 211 0400 001 33 58 211 0500 001 33 58 211 1000 001	double ended  a = length	
Fibre optic cable, single ended, multi mode, 62.5 μm Length: a = 1 m a = 5 m a = 10 m a = 20 m a = 40 m a = 50 m a = 100 m	33 58 111 0010 001 33 58 111 0050 001 33 58 111 0100 001 33 58 111 0200 001 33 58 111 0400 001 33 58 111 0500 001 33 58 111 1000 001	Protection level: IP 65 / IP 67 single ended  a = length	
Fibre optic breakout cable , multi mode, 62.5 μm Length: 10 m Length: 20 m Length: 100 m	33 58 751 0100 001 33 58 751 0200 001 33 58 751 1000 001	 PUR jacket 2-fibre multi mode 62.5 μm Outer diameter: 7 mm Min. bending radius: Installation: 10.5 cm Operating: 7.0 cm	

available
Q2 / 2010



Fibre optic
2 x LC duplex single mode

Identification	Part No.	Drawing	Dimensions in mm
Fibre optic cable, double ended, single mode, metal 2 x Han® 3 A, 2 x LC duplex Length: a = 1 m a = 5 m a = 10 m a = 20 m a = 40 m a = 50 m a = 100 m	33 54 211 0010 001 33 54 211 0050 001 33 54 211 0100 001 33 54 211 0200 001 33 54 211 0400 001 33 54 211 0500 001 33 54 211 1000 001	double ended  a = length 	
Fibre optic cable, single ended, single mode, metal 1 x Han® 3 A, 2 x LC duplex Length: a = 1 m a = 5 m a = 10 m a = 20 m a = 40 m a = 50 m a = 100 m	33 54 111 0010 001 33 54 111 0050 001 33 54 111 0100 001 33 54 111 0200 001 33 54 111 0400 001 33 54 111 0500 001 33 54 111 1000 001	Protection level: IP 65 / IP 67 single ended  a = length	
Fibre optic breakout cable, single mode Length: 10 m Length: 20 m Length: 100 m	33 54 751 0100 001 33 54 751 0200 001 33 54 751 1000 001	 PVC jacket 4-fibre single mode Outer diameter: 9.5 mm Min. bending radius: 15 x OD Installation: 15 x OD Operating: 10 x OD	

Further cable lengths are available on request

available
Q2 / 2010



Fibre optic
2 x LC duplex multi mode, 50 μ m

Identification	Part No.	Drawing	Dimensions in mm
Fibre optic cable, double ended, multi mode, metal, 50 μm 2 x Han® 3 A, 2 x LC duplex Length: a = 1 m a = 5 m a = 10 m a = 20 m a = 40 m a = 50 m a = 100 m	33 54 211 0010 002 33 54 211 0050 002 33 54 211 0100 002 33 54 211 0200 002 33 54 211 0400 002 33 54 211 0500 002 33 54 211 1000 002	double ended a = length	
Fibre optic cable, single ended, multi mode, metal, 50 μm 1 x Han® 3 A, 2 x LC duplex Length: a = 1 m a = 5 m a = 10 m a = 20 m a = 40 m a = 50 m a = 100 m	33 54 111 0010 002 33 54 111 0050 002 33 54 111 0100 002 33 54 111 0200 002 33 54 111 0400 002 33 54 111 0500 002 33 54 111 1000 002	Protection level: IP 65 / IP 67 single ended a = length	
Fibre optic breakout cable, multi mode, 50 μm Length: 10 m Length: 20 m Length: 100 m	33 54 751 0100 002 33 54 751 0200 002 33 54 751 1000 002	FRNC jacket 4-fibre multi mode 50 μm Outer diameter: 7.9 mm Min. bending radius: Installation: 9.8 cm Operating: 7.9 cm	

Further cable lengths are available on request

available
Q2 / 2010



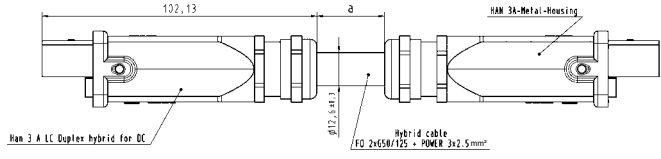
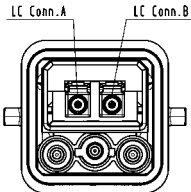
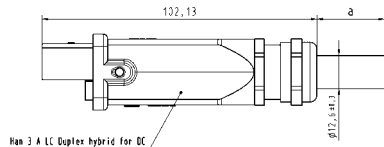
Hybrid fibre optic
LC duplex single mode

Identification	Part No.	Drawing	Dimensions in mm
Hybrid fibre optic cable, single mode, double ended 2 x FO + 3 x 2.5 mm ² , 2 x Han® 3 A Length: a = 1 m AC version DC version a = 5 m AC version DC version a = 10 m AC version DC version a = 20 m AC version DC version a = 40 m AC version DC version a = 50 m AC version DC version a = 100 m AC version DC version	33 57 211 0015 003 33 57 211 0015 004 33 57 211 0055 003 33 57 211 0055 004 33 57 211 0105 003 33 57 211 0105 004 33 57 211 0205 003 33 57 211 0205 004 33 57 211 0405 003 33 57 211 0405 004 33 57 211 0505 003 33 57 211 0505 004 33 57 211 1005 003 33 57 211 1005 004	double ended a = length Protection level: IP 65 / IP 67	
Hybrid fibre optic cable, single mode, single ended 2 x FO + 3 x 2.5 mm ² , 1 x Han® 3 A Length: a = 1 m AC version DC version a = 5 m AC version DC version a = 10 m AC version DC version a = 20 m AC version DC version a = 40 m AC version DC version a = 50 m AC version DC version a = 100 m AC version DC version	33 57 111 0015 003 33 57 111 0015 004 33 57 111 0055 003 33 57 111 0055 004 33 57 111 0105 003 33 57 111 0105 004 33 57 111 0205 003 33 57 111 0205 004 33 57 111 0405 003 33 57 111 0405 004 33 57 111 0505 003 33 57 111 0505 004 33 57 111 1005 003 33 57 111 1005 004	single ended a = length	
Hybrid fibre optic cable, single mode Length: 10 m Length: 20 m Length: 500 m	33 57 851 0100 003 33 57 851 0200 003 33 57 851 5000 003	 PVC jacket 2 x 9/125 + 3 x 2.5 mm ² Outer diameter: 8.8 mm Min. bending radius: Installation: 9 cm Operating: 18 cm	

Further cable lengths are available on request



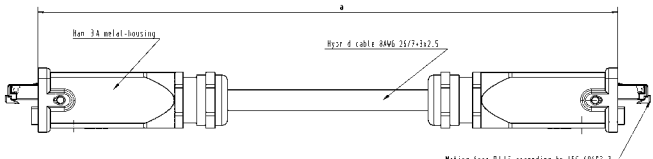
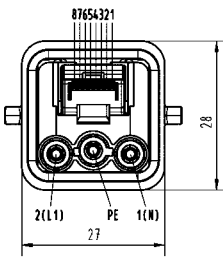
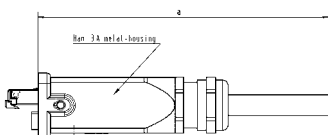
Hybrid fibre optic
LC duplex multi mode, 50 μ m

Identification	Part No.	Drawing	Dimensions in mm
Hybrid fibre optic cable, multi mode, double ended 2 x G50/125 + 3 x 2.5 mm ² Length: a = 1 m AC version DC version a = 5 m AC version DC version a = 10 m AC version DC version a = 20 m AC version DC version a = 40 m AC version DC version a = 50 m AC version DC version a = 100 m AC version DC version	33 57 211 0015 001 33 57 211 0015 002 33 57 211 0055 001 33 57 211 0055 002 33 57 211 0105 001 33 57 211 0105 002 33 57 211 0205 001 33 57 211 0205 002 33 57 211 0405 001 33 57 211 0405 002 33 57 211 0505 001 33 57 211 0505 002 33 57 211 1005 001 33 57 211 1005 002	double ended  a = length  Protection level: IP 65 / IP 67	
Hybrid fibre optic cable, multi mode, single ended 2 x G50/125 + 3 x 2.5 mm ² Length: a = 1 m AC version DC version a = 5 m AC version DC version a = 10 m AC version DC version a = 20 m AC version DC version a = 40 m AC version DC version a = 50 m AC version DC version a = 100 m AC version DC version	33 57 111 0015 001 33 57 111 0015 002 33 57 111 0055 001 33 57 111 0055 002 33 57 111 0105 001 33 57 111 0105 002 33 57 111 0205 001 33 57 111 0205 002 33 57 111 0405 001 33 57 111 0405 002 33 57 111 0505 001 33 57 111 0505 002 33 57 111 1005 001 33 57 111 1005 002	single ended  a = length	
Hybrid fibre optic cable, multi mode, 50 μm Length: 10 m Length: 20 m Length: 500 m	33 57 851 0100 002 33 57 851 0200 002 33 57 851 5000 002	 PVC jacket 2 x G50/125 + 3 x 2.5 mm ² Outer diameter: 12.6 mm Min. bending radius: single: 5 x OD repeated: 10 x OD	

Further cable lengths are available on request



Hybrid RJ45

Identification	Part No.	Drawing	Dimensions in mm
Hybrid cable, double ended, 4 x 2 x AWG 26/7 + 3 x 2.5 mm² Length: a = 1 m AC version DC version a = 5 m AC version DC version a = 10 m AC version DC version a = 20 m AC version DC version	 33 57 211 0010 001 33 57 211 0010 002 33 57 211 0050 001 33 57 211 0050 002 33 57 211 0100 001 33 57 211 0100 002 33 57 211 0200 001 33 57 211 0200 002	double ended  a = length 	
Hybrid cable, single ended, 4 x 2 x AWG 26/7 + 3 x 2.5 mm² Length: a = 1 m AC version DC version a = 5 m AC version DC version a = 10 m AC version DC version a = 20 m AC version DC version	 33 57 111 0010 002 33 57 111 0010 001 33 57 111 0050 002 33 57 111 0050 001 33 57 111 0100 002 33 57 111 0100 001 33 57 111 0200 002 33 57 111 0200 001	Protection level: IP 65 / IP 67 Data part: Transmission properties in accordance with ISO/IEC 11801:2002: Class D single ended  a = length	
Hybrid outdoor cable Length: 10 m Length: 20 m Length: 500 m	 33 57 851 0100 001 33 57 851 0200 001 33 57 851 5000 001	 PVC jacket 4 x 2 x AWG 26/7 + 3 x 2.5 mm ² Outer diameter: 12 mm Min. bending radius: single: 5 x OD repeated: 10 x OD	

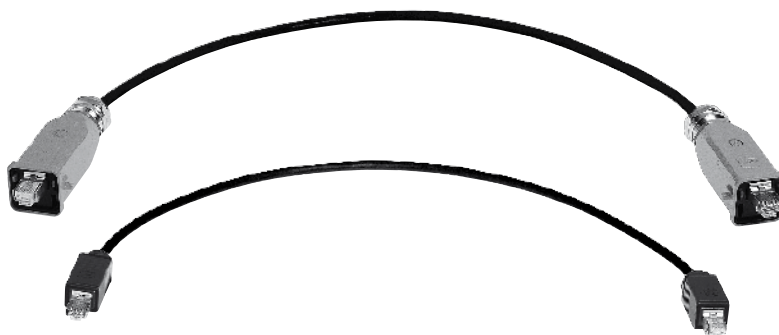
Further cable lengths are available on request



RJ45, 4-wire

Identification	Part No.	Drawing	Dimensions in mm
HARTING PushPull Outdoor cable, RJ45, 4-wire Length: a = 1.5 m a = 3.0 m a = 5.0 m a = 10.0 m a = 20.0 m	09 47 363 6069 09 47 363 6071 09 47 363 6073 09 47 363 6078 09 47 363 6080	double ended a = length	
Han® 3 A Outdoor cable, RJ45, 4-wire Length: a = 1.5 m a = 3.0 m a = 5.0 m a = 10.0 m a = 20.0 m	09 45 715 0064 09 45 715 0066 09 45 715 0068 09 45 715 0073 09 45 715 0075	double ended a = length	
Outdoor cable 4-wire, RJ45, Cat. 5, PVC Length: 20 m ring Length: 50 m ring Length: 100 m ring Length: 500 m reel	09 45 600 0135 09 45 600 0145 09 45 600 0105 09 45 600 0115	 Wire: stranded tinned copper, AWG 22/7 Overall screen: aluminate foil overlapped, tinned copper wire braid, braid coverage about 85 % Overall diameter: 6.3 – 6.7 mm	

Further cable lengths are available on request



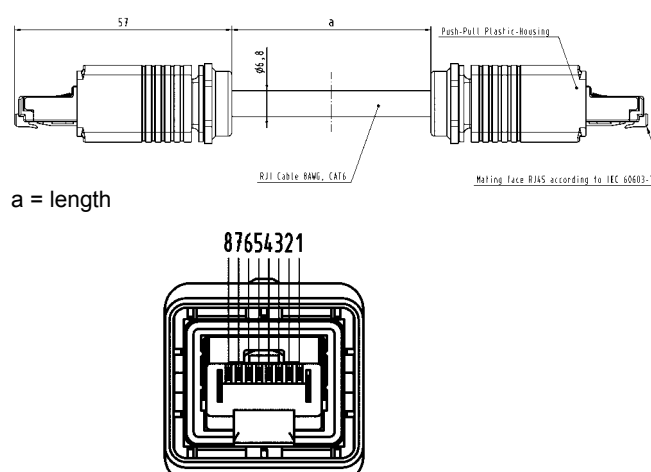
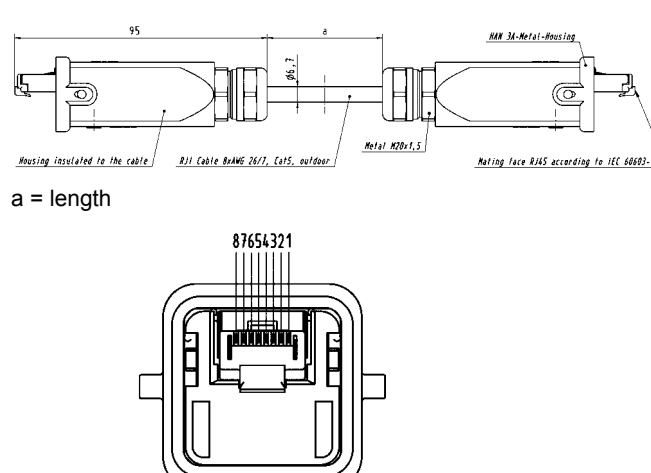
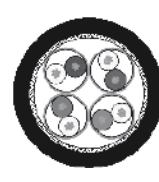
RJ45, 8-wire Cat. 5 / Cat. 5e

Identification	Part No.	Drawing	Dimensions in mm
HARTING PushPull Outdoor cable, RJ45, 8-wire Length: a = 1.5 m a = 3.0 m a = 5.0 m a = 10.0 m a = 20.0 m	09 45 745 1105 09 45 745 1107 09 45 745 1109 09 45 745 1114 09 45 745 1116	double ended a = length 	
Han® 3 A Outdoor cable, RJ45, 8-wire Length: a = 1.5 m a = 3.0 m a = 5.0 m a = 10.0 m a = 20.0 m	09 45 715 1105 09 45 715 1107 09 45 715 1109 09 45 715 1114 09 45 715 1116	double ended a = length 	
Outdoor cable 8-wire, RJ45, Cat. 5 / Cat. 5e, PVC Length: 20 m ring Length: 50 m ring Length: 100 m ring Length: 500 m reel	09 45 600 0230 09 45 600 0240 09 45 600 0200 09 45 600 0220	 Wire: bare stranded copper, AWG 26/7 Overall screen: aluminium bonded polyester tape and tinned copper wire braid, braid coverage about 85 % Overall diameter: 6.5 – 6.9 mm	

Further cable lengths are available on request



RJ45, 8-wire Cat. 6

Identification	Part No.	Drawing	Dimensions in mm
HARTING PushPull Outdoor cable, RJ45, 8-wire Length: a = 1.5 m a = 3.0 m a = 5.0 m a = 10.0 m a = 20.0 m	09 45 745 1578 09 45 745 1580 09 45 745 1582 09 45 745 1587 09 45 745 1589	double ended  a = length	
Han® 3 A Outdoor cable, RJ45, 8-wire Length: a = 1.5 m a = 3.0 m a = 5.0 m a = 10.0 m a = 20.0 m	09 45 715 1583 09 45 715 1585 09 45 715 1587 09 45 715 1592 09 45 715 1594	double ended  a = length	
Outdoor cable 8-wire, RJ45, Cat. 6, PVC Length: 20 m ring Length: 50 m ring Length: 100 m ring Length: 500 m reel	09 45 600 0531 09 45 600 0541 09 45 600 0501 09 45 600 0521	 Wire: bare stranded copper, AWG 27/7 Pairs: aluminate foil overlapped PIMF Overall screen: tinned copper wire braid, braid coverage about 60 % Overall diameter: 6.3 – 6.9 mm	

Further cable lengths are available on request

The chapter on „cable assemblies for Industrial Ethernet” describes a part of the complete **HARTING** product line for installing Ethernet cabling at machines, plants and production facilities in an industrial environment.

The product line includes:

- Four-wire cables for setting up flexible connections and for fixed installations
- Assembled system cables in IP 20 and IP 65 / IP 67 versions

The four-wire cabling is specially designed for Ethernet transmission of data with a max. transmission rate of 100 Mbit/s data can be reliably transmitted at either 10 Mbit/s or 100 Mbit/s, with the clear assignment of the contacts of the RJ45 connector.

This complies with the following specifications:

- 10 Mbit/s Ethernet, corresponding to 10 Base-T
- 100 Mbit/s Ethernet, corresponding to 100 Base-T (Fast Ethernet)

Cabling components based on the M12 D-coding system are also a part of the four-wire cable product line, since both RJ45 and M12 connectors are common in automation engineering.



In addition to IEEE 802.3 Ethernet, the following Ethernet-based Fieldbus applications, with or without real-time functionality, can be transmitted (not a complete listing):

- PROFINET (including PROFINET RT / real-time), according to IEC 61 784-5-3
- EtherNet/IP
- Modbus / TCP
- Ethernet Powerlink
- VARAN Bus

This type of cabling is driven by the progressive implementation of various Fieldbus systems on Ethernet platforms. The special requirements placed on the cabling are often developed by manufacturing companies and user organizations. These requirements sometimes contain specific characteristics for connecting applications and networks. Withal these somewhat proprietary trends in development, there is also a movement towards international standardization, for example within the IEC SC65C committee.

The key points, particularly for the field of cabling, are established in IEC 61918. However the adoption of the ISO/IEC 24702 norm – for generic cabling in industrial buildings – ensures seamless communication between eight-wire building cabling and four-wire machinery-island cabling.

Content

Page

RJ45**03.02****M12****03.06**



HARTING RJ Industrial®

System cable

RJ45, 4-wire, straight

RJ45 connection cable for control or distributor cabinets
or within controllers



Identification

Part No.

Drawing

Dimensions in mm

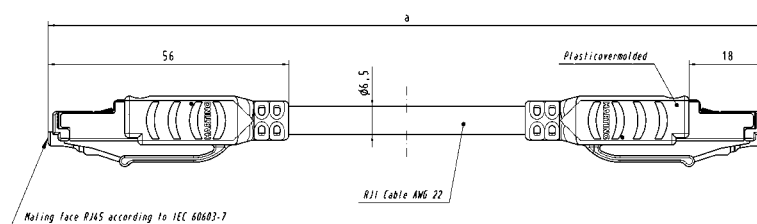
HARTING RJ Industrial® System cable RJ45, 4-wire

AWG 22/1, solid

Length: a = 1.5 m
a = 3.0 m
a = 5.0 m
a = 10.0 m
a = 20.0 m

09 45 771 0023
09 45 771 0025
09 45 771 0027
09 45 771 0051
09 45 771 0053

double ended



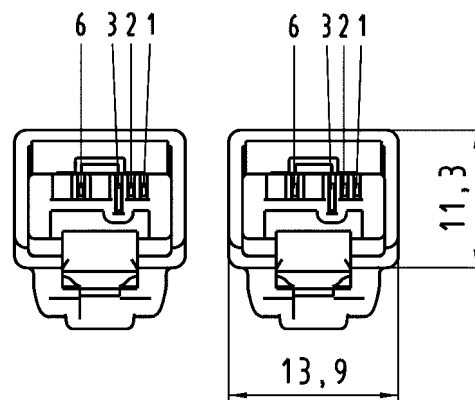
a = length

HARTING RJ Industrial® System cable RJ45, 4-wire

AWG 22/7, stranded

Length: a = 1.5 m
a = 3.0 m
a = 5.0 m
a = 10.0 m
a = 20.0 m

09 45 771 1123
09 45 771 1125
09 45 771 1127
09 45 771 1151
09 45 771 1153



HARTING RJ Industrial® System cable RJ45, 4-wire

AWG 22/7, trailing

Length: a = 1.5 m
a = 3.0 m
a = 5.0 m
a = 10.0 m
a = 20.0 m

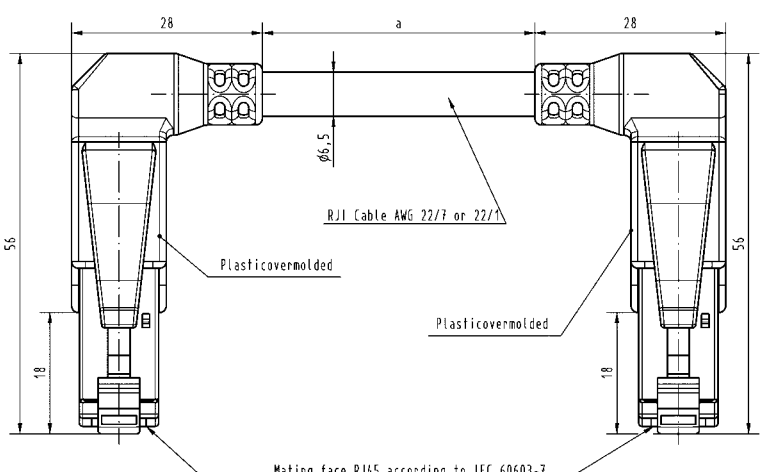
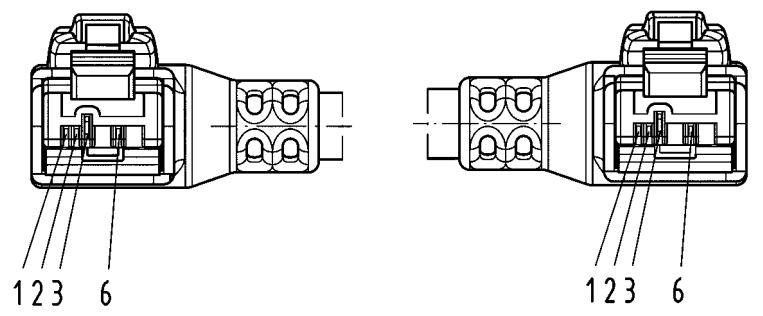
09 45 771 1164
09 45 771 1166
09 45 771 1168
09 45 771 1173
09 45 771 1175



HARTING RJ Industrial® System cable RJ45, 4-wire, angled

RJ45 connection cable, angled left to angled right,
for control or distributor cabinets or within controllers



Identification	Part No.	Drawing	Dimensions in mm
HARTING RJ Industrial® System cable RJ45, angled, 4-wire AWG 22/1, solid Length: a = 1.5 m a = 3.0 m a = 5.0 m a = 10.0 m a = 20.0 m	09 47 050 6003 09 47 050 6005 09 47 050 6007 09 47 050 6012 09 47 050 6014	double ended 	
HARTING RJ Industrial® System cable RJ45, angled, 4-wire AWG 22/7, stranded Length: a = 1.5 m a = 3.0 m a = 5.0 m a = 10.0 m a = 20.0 m	09 47 050 6025 09 47 050 6027 09 47 050 6029 09 47 050 6034 09 47 050 6036	a = length 	
HARTING RJ Industrial® System cable RJ45, angled, 4-wire AWG 22/7, trailing Length: a = 1.5 m a = 3.0 m a = 5.0 m a = 10.0 m a = 20.0 m	09 47 050 6047 09 47 050 6049 09 47 050 6051 09 47 050 6056 09 47 050 6058		

HARTING RJ Industrial®

System cable

RJ45, 4-wire, angled

 RJ45 connection cable, angled top to angled bottom,
for control or distributor cabinets or within controllers

Identification
Part No.
Drawing
Dimensions in mm
HARTING RJ Industrial®
System cable

RJ45, angled, 4-wire

AWG 22/1, solid

Length: a = 1.5 m

a = 3.0 m

a = 5.0 m

a = 10.0 m

a = 20.0 m

09 47 030 4003

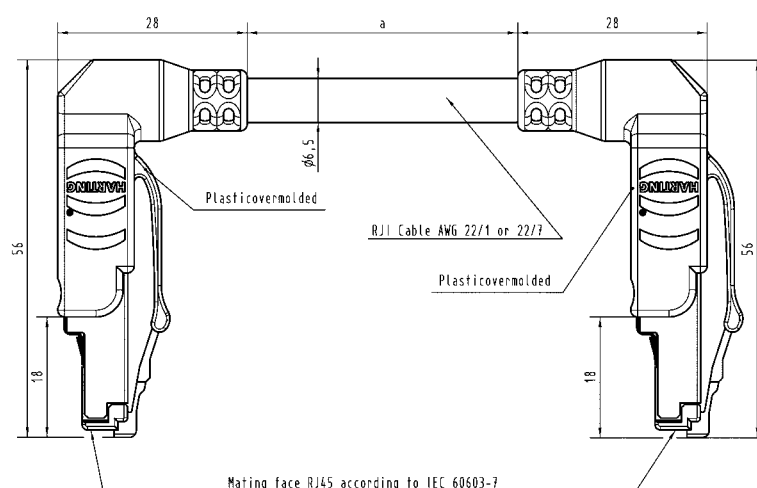
09 47 030 4005

09 47 030 4007

09 47 030 4012

09 47 030 4014

double ended


HARTING RJ Industrial®
System cable

RJ45, angled, 4-wire

AWG 22/7, stranded

Length: a = 1.5 m

a = 3.0 m

a = 5.0 m

a = 10.0 m

a = 20.0 m

09 47 030 4025

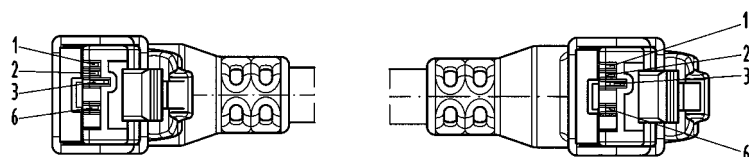
09 47 030 4027

09 47 030 4029

09 47 030 4034

09 47 030 4036

a = length


HARTING RJ Industrial®
System cable

RJ45, angled, 4-wire

AWG 22/7, trailing

Length: a = 1.5 m

a = 3.0 m

a = 5.0 m

a = 10.0 m

a = 20.0 m

09 47 030 4047

09 47 030 4049

09 47 030 4051

09 47 030 4056

09 47 030 4058



Exit left



Exit right



Exit top



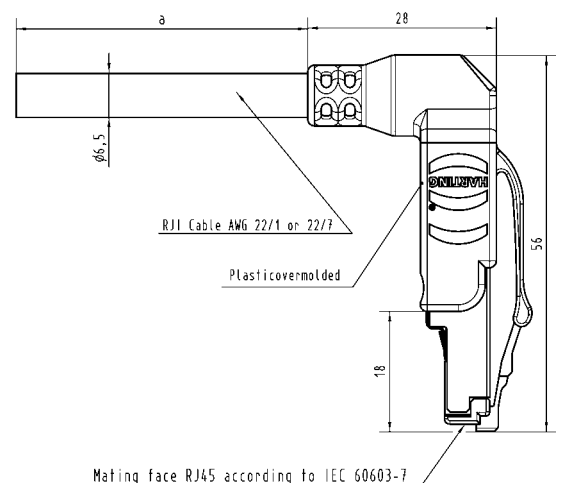
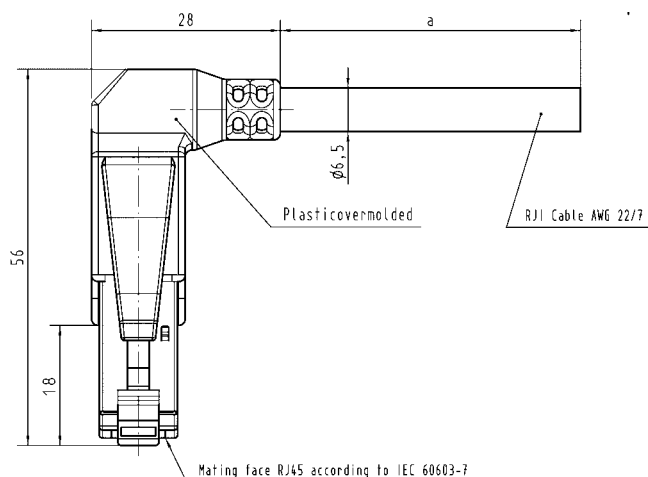
Exit bottom

HARTING RJ Industrial® System cable RJ45, 4-wire, angled

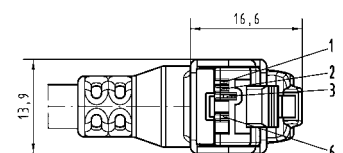
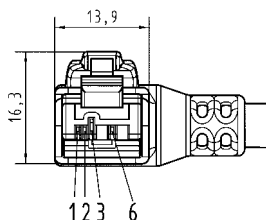
RJ45 connection cable, first end angled, one side pre-assembled, second side open, for control or distributor cabinets or within controllers

Identification		Part No.			
		angled left	angled right	angled top	angled bottom
HARTING RJ Industrial® System cable RJ45, 4-wire, angled one side pre-assembled, second side open Type A	Length: a = 1.5 m	09 47 050 0003	09 47 060 0003	09 47 030 0003	09 47 040 0003
	a = 3.0 m	09 47 050 0005	09 47 060 0005	09 47 030 0005	09 47 040 0005
	a = 5.0 m	09 47 050 0007	09 47 060 0007	09 47 030 0007	09 47 040 0007
	a = 10.0 m	09 47 050 0012	09 47 060 0012	09 47 030 0012	09 47 040 0012
	a = 20.0 m	09 47 050 0014	09 47 060 0014	09 47 030 0014	09 47 040 0014
HARTING RJ Industrial® System cable RJ45, 4-wire, angled one side pre-assembled, second side open Type B	Length: a = 1.5 m	09 47 050 0025	09 47 060 0025	09 47 030 0025	09 47 040 0025
	a = 3.0 m	09 47 050 0027	09 47 060 0027	09 47 030 0027	09 47 040 0027
	a = 5.0 m	09 47 050 0029	09 47 060 0029	09 47 030 0029	09 47 040 0029
	a = 10.0 m	09 47 050 0034	09 47 060 0034	09 47 030 0034	09 47 040 0034
	a = 20.0 m	09 47 050 0036	09 47 060 0036	09 47 030 0036	09 47 040 0036
HARTING RJ Industrial® System cable RJ45, 4-wire, angled one side pre-assembled, second side open Type C	Length: a = 1.5 m	09 47 050 0047	09 47 060 0047	09 47 030 0047	09 47 040 0047
	a = 3.0 m	09 47 050 0049	09 47 060 0049	09 47 030 0049	09 47 040 0049
	a = 5.0 m	09 47 050 0051	09 47 060 0051	09 47 030 0051	09 47 040 0051
	a = 10.0 m	09 47 050 0056	09 47 060 0056	09 47 030 0056	09 47 040 0056
	a = 20.0 m	09 47 050 0058	09 47 060 0058	09 47 030 0058	09 47 040 0058

single ended

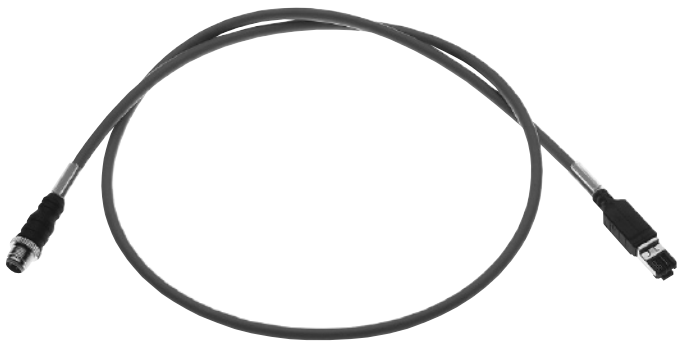


a = length



Han® M12 RJ45
System cable
4-wire

Han® M12 connection cable, D-coding,
to RJ45 (IP 20), overmoulded



Identification

Part No.

Drawing

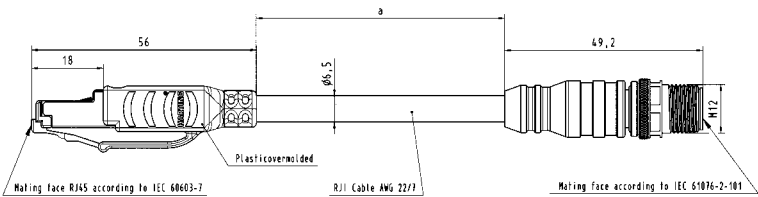
Dimensions in mm

Han® M12
System cable, 4-wire
AWG 22/7
trailing PUR

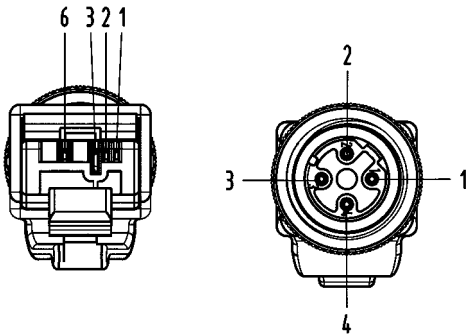
Length: a = 1.5 m
a = 3.0 m
a = 5.0 m
a = 10.0 m
a = 20.0 m

09 45 700 5023
09 45 700 5025
09 45 700 5027
09 45 700 5051
09 45 700 5053

double ended



a = length



Han® M12
System cable, 4-wire
AWG 22/7
stranded PVC outdoor

Length: a = 1.5 m
a = 3.0 m
a = 5.0 m
a = 10.0 m
a = 20.0 m

09 45 700 5064
09 45 700 5066
09 45 700 5068
09 45 700 5073
09 45 700 5075

Contact assignment

Signal	M12 D-coding	RJ45
TD+	1	1
TD-	3	2
RD+	2	3
RD-	4	6

Han® M12 System cable 4-wire

Han® M12 connection cable, D-coding,
for harsh industrial environments
pre-assembled on both sides



Identification

Part No.

Drawing

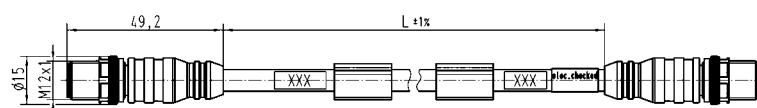
Dimensions in mm

Han® M12
System cable, 4-wire
2 x 2 x AWG 22/7, PUR

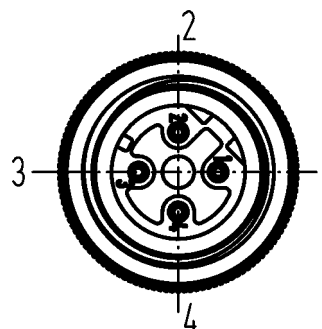
Length: a = 1.5 m
a = 3.0 m
a = 5.0 m
a = 10.0 m
a = 20.0 m

21 03 485 1451
21 03 485 1403
21 03 485 1405
21 03 485 1410
21 03 485 1420

double ended



a = length



HARTING offers a wide range of cable assemblies to cover applications in different market areas. For this, there is a broad portfolio of standard products existing. Nevertheless, **HARTING** also offers the service of customer specific goods. With this, the high level components are integrated into a framework for ascending the value chain and give a best in class service to the customers.

Therefore, our worldwide sales force is always close to our customers in order to work out the specific needs.

For these products **HARTING** uses its complete range, for example **Han®** or **HARTING PushPull**. With the usage of several connectors, there are different types, like copper, fibre optic or hybrid present, which are all served by **HARTING**.

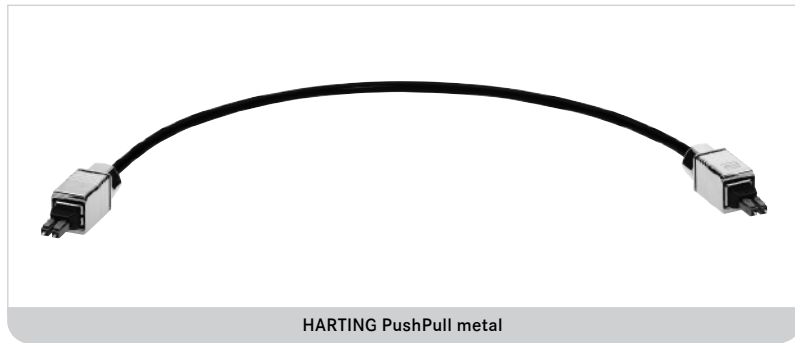
Herewith, efficient processes and reliable technologies are available and will be applied for the individual applications and the referring custom-made products. Influencing factors and environmental conditions are considered here to set up the best solution for the **HARTING** customer.



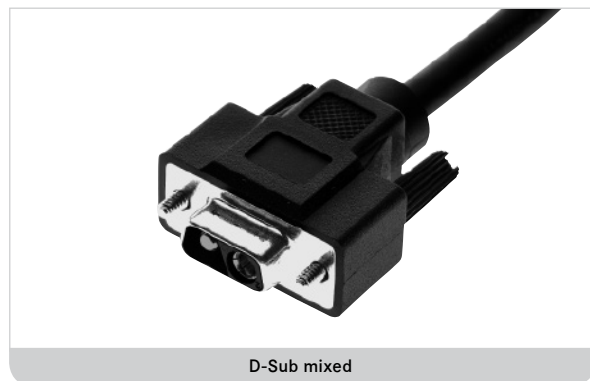
Especially by utilising the whole Han® range, applications like wind energy, transportation or machinery are covered with high level products. Here, the long term **HARTING** experience in these fields is applied.

Power cables, data cables, hybrid and modular assemblies are the result of this combination. By arranging the various hoods and inserts and going further with the Han-Modular®, the diversity to satisfy specific needs is exceptional.

This is combined with raw cables which are designed for special needs and fulfil extraordinary demands. Together with the experience in engineering and production, this brings **HARTING** into the position to play a leading role in offering custom specific cable assemblies.



HARTING PushPull metal



D-Sub mixed

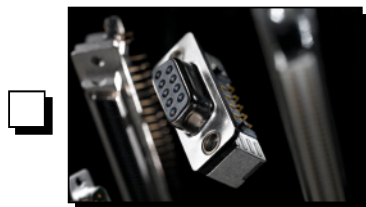


Han® 10 E

Please send me further information:

CD-ROM HARKIS® basic ☐

DVD HARKIS® basic ☐



Interface Connectors



Outdoor Solutions



Industrial Connectors Han®



**Connectors
DIN 41612**



**Ethernet
Network Solutions**



**Coaxial and Metric
Connectors**



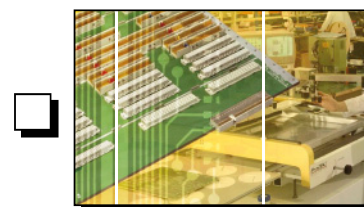
**Application
brochure**



TCA Connectors



Device Connectivity



**Backplanes and
Integrated Systems**

Sender:

Company: _____

Street: _____

Department: _____

Postcode/Town: _____

Name: _____

Country: _____

Prenome: _____

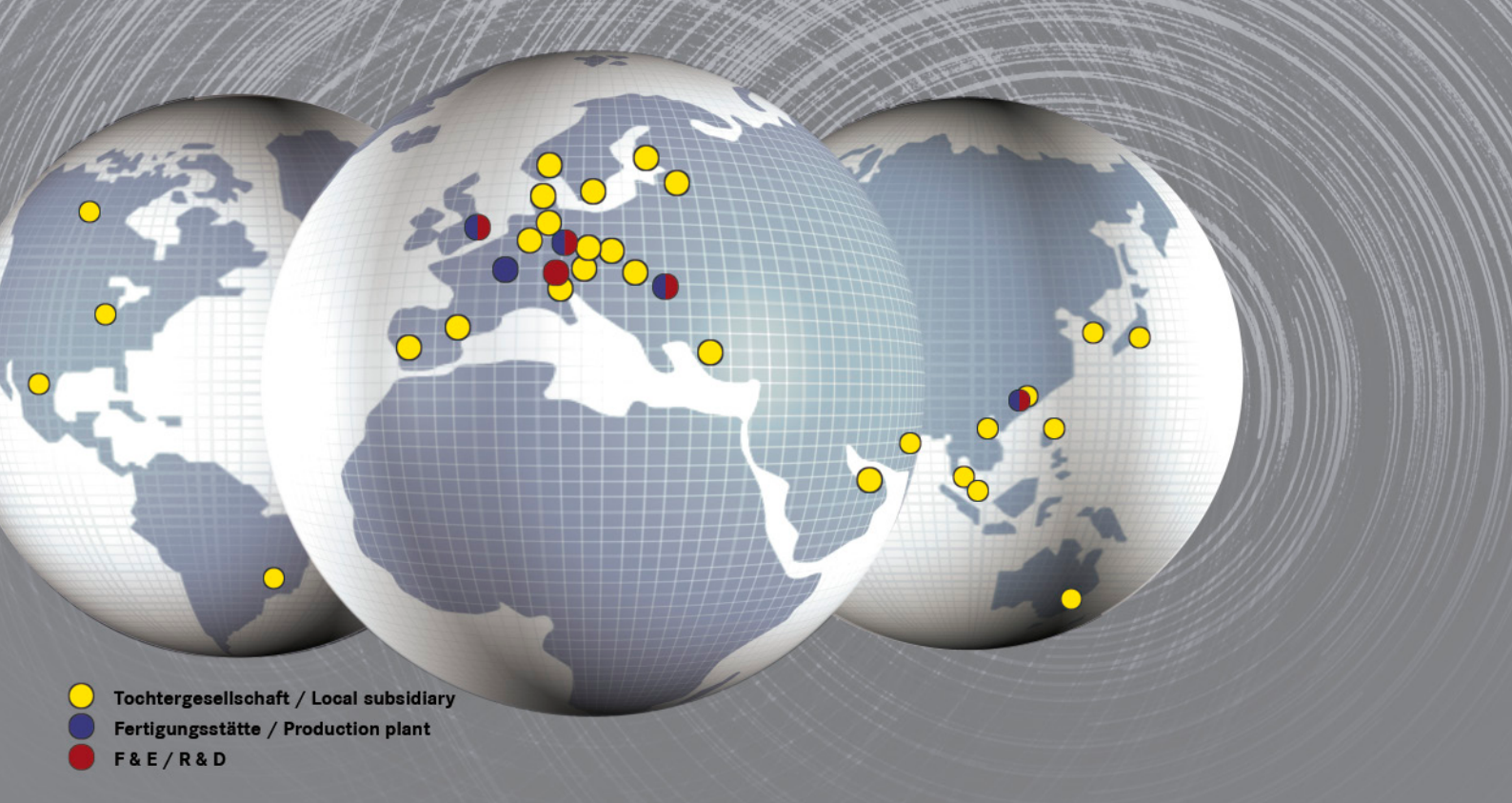
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Function: _____

Fax: _____

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Pushing Performance

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