



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.



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.

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.

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.

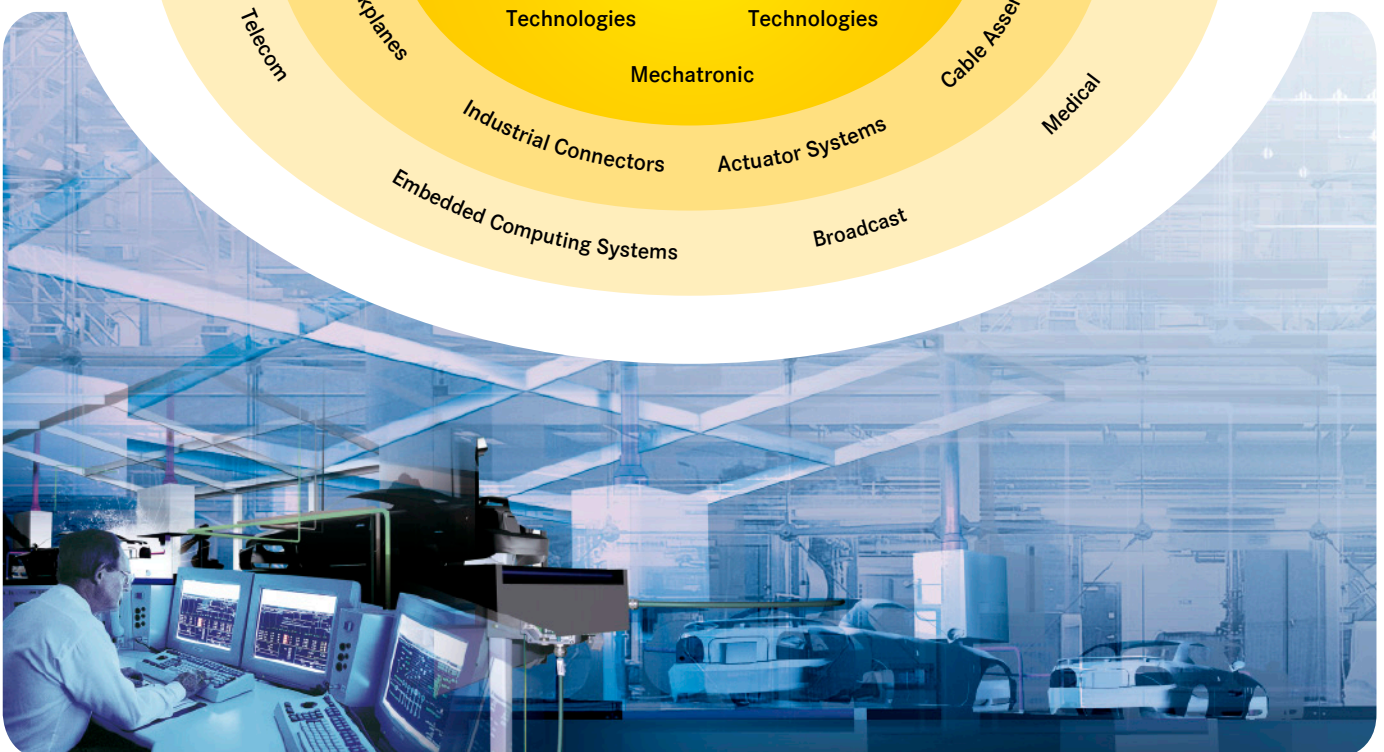
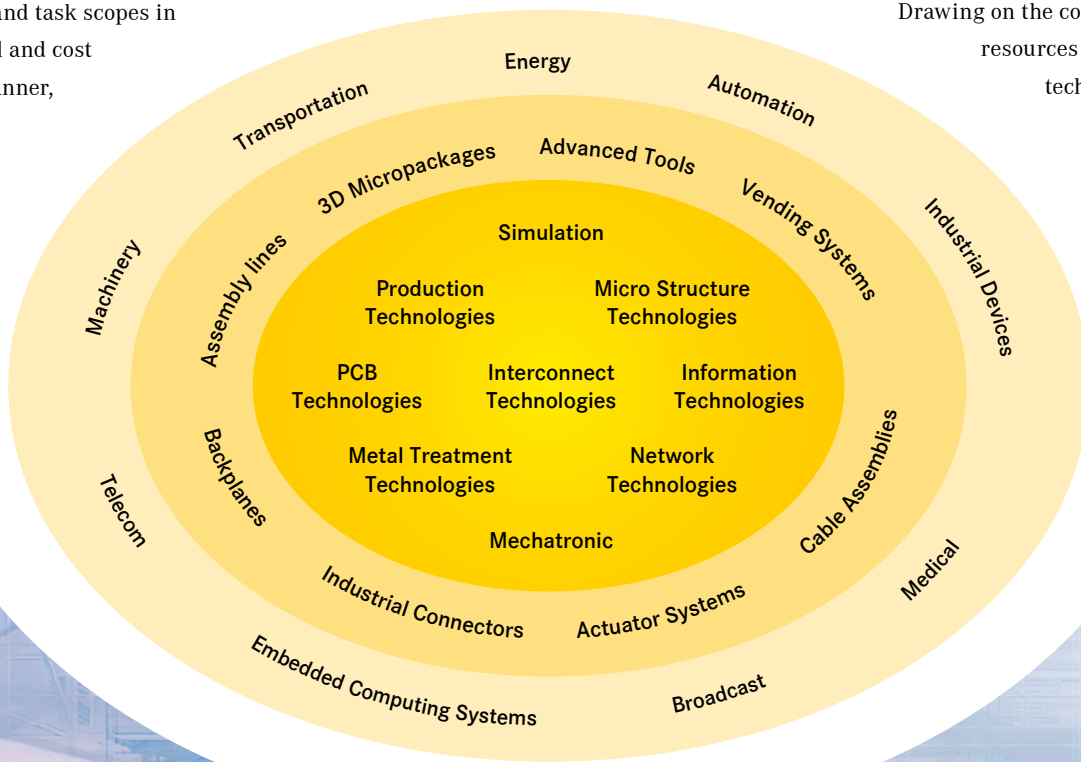
In order to develop connectivity and network solutions serving an exceptionally wide range of connector applications and task scopes in a professional and cost optimized manner, HARTING not only

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!





Chapter

<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.

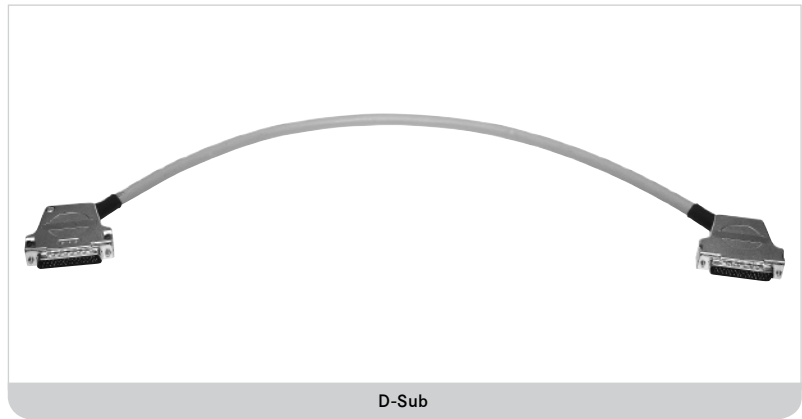
The har-link® cable assemblies have excellent data transmission properties for high speed

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.

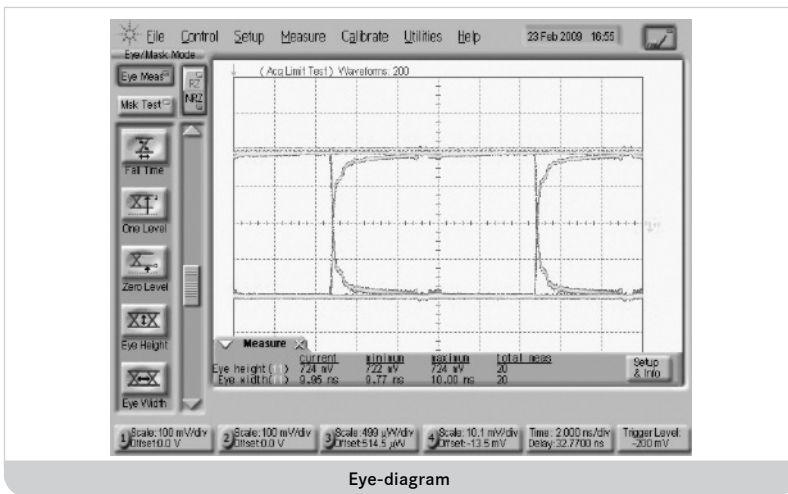
har-link® cable assemblies allow data transmission up to 2 Gbit/s per pair and are therefore perfectly suited for modern transmission protocols such as low voltage differential signals. The design of the har-link® connector allows differential pairs to be placed horizontally, thus reducing the skew at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

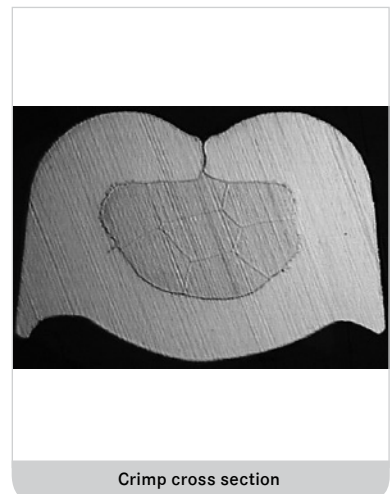
Furthermore HARTING fulfils all crimp norms (DIN/IEC 60352-2) which are important for crimp connections. Tensile strength will be tested from HARTING as well in accordance to IEC 60512.

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

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	60 90 005 6003	60 90 005 6009	
	10	60 90 010 6003		
	13	60 90 013 6003		
	14	60 90 014 6003		
	18	60 90 018 6003		
	20	60 90 020 6003		
	25	60 90 025 6003		
	34	60 90 034 6003		
	40	60 90 040 6003		
	48	60 90 048 6003		
	50	60 90 050 6003		

Drawing	No. of pairs	Outside diameter		<table border="1"> <thead> <tr> <th>No. of pairs</th> <th>Outside diameter</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>5.5 ± 0.3</td> </tr> </tbody> </table>	No. of pairs	Outside diameter	5	5.5 ± 0.3
		No. of pairs	Outside diameter					
		5	5.5 ± 0.3					
Nominal	Max							
Dimensions in mm								
	5	5.4	5.6	<p>Twisted pair Separator Shield Jacket PVC Jacket FRNC</p> <p>Dimensions in mm</p>				
	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					

	Standard version	<i>Halogen free version with screened pairs</i>
	Number of pairs	5, 10, 13, 14, 18, 20, 25, 34, 40, 48, 50
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]
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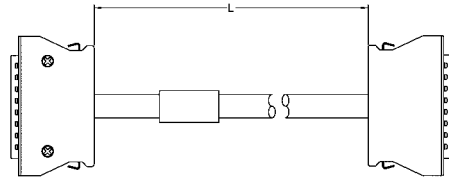
**Cable assembly har-mik®
pin and socket, 68 pole,
male**

Hood: metal hood with top entry

Cable: 34 twisted pairs, AWG 28, shielded, PVC

Wiring: 1:1

Length: L = 0.5 m	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



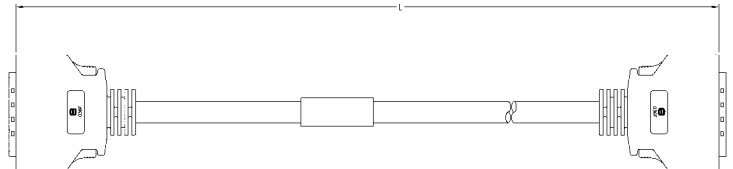
**Cable assembly har-mik®
bellows, 36 pole, male**

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.
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Flat cable for IDC connector Pitch 0.635 mm AWG 30 Length per reel: 100 ft 30.48 m	50	60 90 050 6008
	68	60 90 068 6008

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

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	2 678
Temperature range	- 30 °C ... + 105 °C

Materials	
Conductor	7 x 0.102 mm regular tinning or Z-bonding AWG 30
Insulation	PVC



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

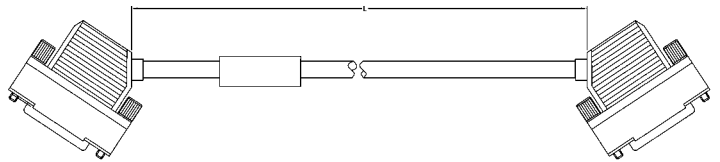
Hood: shielded plastic hood
with side entry,
screw 4-40 UNC

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**

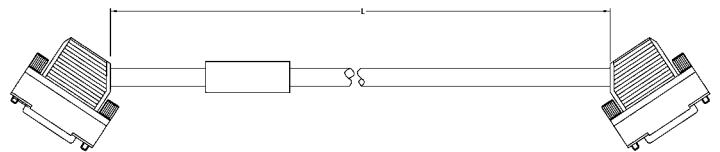
Hood: shielded plastic hood
with side entry,
screw 4-40 UNC

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**

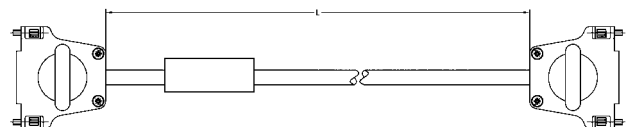
Hood: metal hood with top
entry, screw 4-40 UNC

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]
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**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**

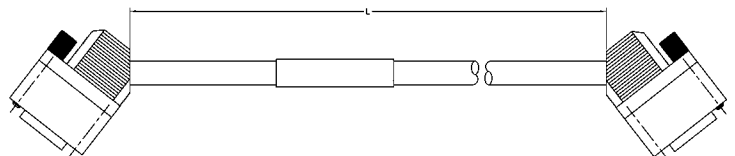
Hood: shielded plastic hood
with side entry,
screw 4-40 UNC

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





Identification	Part No.	Drawing	Dimensions [mm]
<p>Cable assembly SEK 20 pole, female</p> <p>Cable: Flat cable, 10 twisted pairs, AWG 28/7, 1.27 mm pitch</p> <p>Wiring: 1:1</p> <p>Length: L = 0.5 m L = 1.0 m L = 1.5 m</p>	<p>33 18 243 0500 060 33 18 243 1000 062 33 18 243 1500 068</p>		
<p>Cable assembly SEK 40 pole, female</p> <p>Cable: Flat cable, 20 twisted pairs, AWG 28/7, 1.27 mm pitch</p> <p>Wiring: 1:1</p> <p>Length: L = 0.5 m L = 1.0 m L = 1.5 m</p>	<p>33 18 243 0500 055 33 18 243 1000 057 33 18 243 1500 069</p>		
<p>Cable assembly SEK 10 pole, female</p> <p>Cable: Flat cable, grey, 10 wires, AWG 28/7, 1.27 mm pitch</p> <p>Wiring: 1:1</p> <p>Length: L = 0.1 m L = 0.2 m L = 0.5 m L = 0.8 m L = 1.0 m</p>	<p>33 18 243 0100 063 33 18 243 0200 064 33 18 243 0500 065 33 18 243 0800 066 33 18 243 1000 067</p>		

Cables for insulation displacement termination

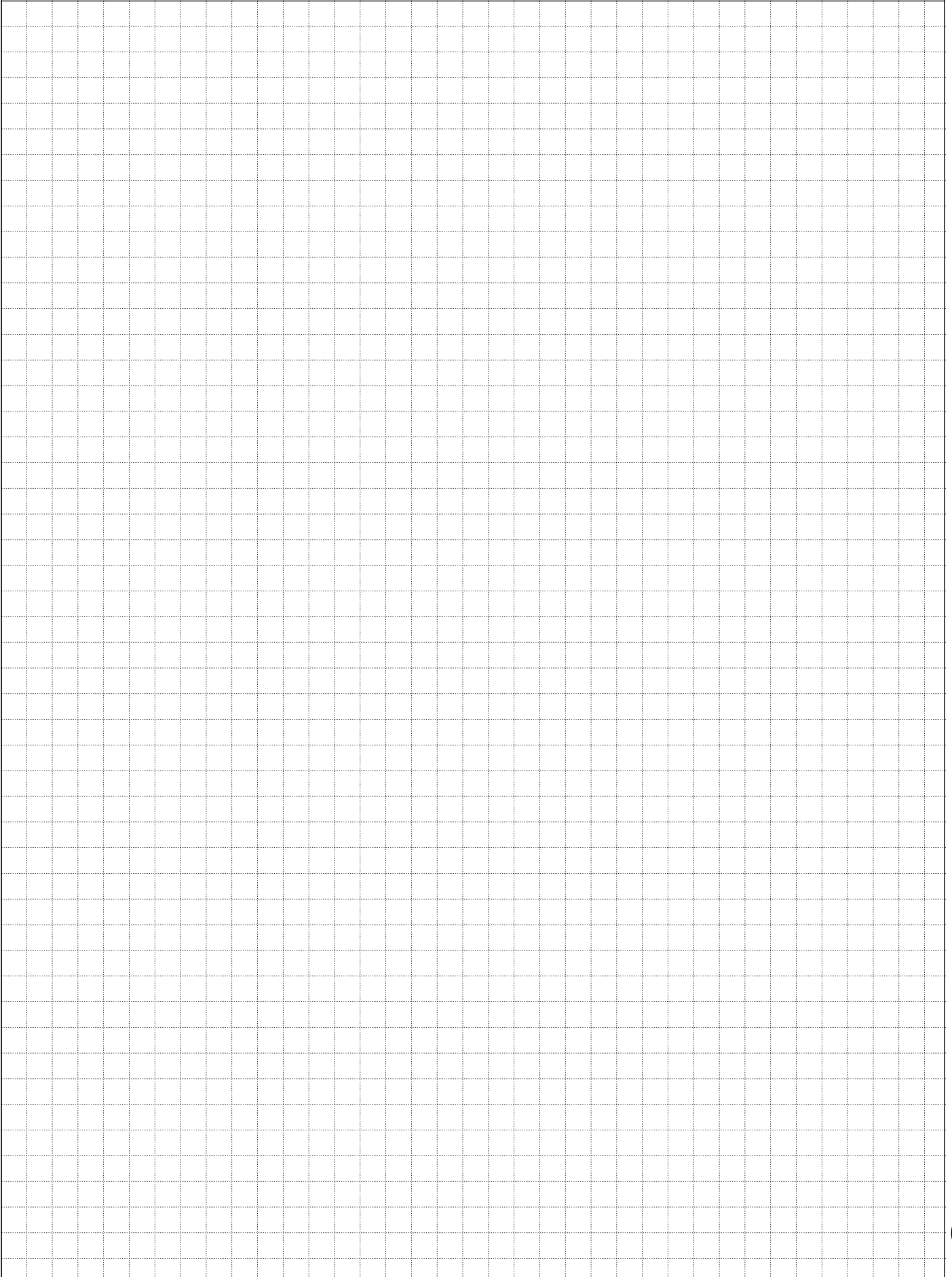
Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
<p>Flat cable</p> <p>grey</p> <p>UL AWM-style 2651</p> <p>CSA</p>				
	6	09 18 006 700		
	9	09 18 009 700		
	10	09 18 010 700		
	14	09 18 014 700		
	15	09 18 015 700		
	16	09 18 016 700		
	18	09 18 018 700		
	20	09 18 020 700		
	24	09 18 024 700		
	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		
Length per reel	50	09 18 050 700		
30.48 m (100 feet)	60	09 18 060 700		
	64	09 18 064 700		
	1		<p>Conductor material _____ Copper tinned</p> <p>Gauge _____ AWG 28/7 0.089 mm²</p> <p>Voltage rating _____ 300 V_{r.m.s.}</p> <p>Current rating _____ 1.3 A at 10 °C rise above ambient</p> <p>Capacity unbalanced _____ 45.9 pF/m</p> <p>Impedance unbalanced _____ 105 Ω</p> <p>Propagation delay _____ 4.9 ns/m nominal</p> <p>Insulation material _____ PVC</p> <p>Temperature rating (operating) _____ -20 °C ... + 105 °C</p> <p>Temperature rating (static) _____ -30 °C ... + 105 °C</p> <p>Flammability rating _____ Flame retardant VW-1</p> <p>Insulation resistance _____ > 10⁴ MΩ/km</p>	
	4			
<p>Flat cable</p> <p>colour coded</p> <p>Length per reel</p> <p>30.48 m (100 feet)</p> <p>UL AWM-style 20 130</p>				
	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		
			<p>Conductor material _____ Copper tinned</p> <p>Gauge _____ AWG 28/7 0.089 mm²</p> <p>Voltage rating _____ 300 V_{r.m.s.}</p> <p>Conductor resistance _____ 221 mΩ/m</p> <p>Capacity unbalanced _____ 42.7 pF/m</p> <p>Impedance unbalanced _____ 105 Ω</p> <p>Inductance unbalanced _____ 0.68 μH/m</p> <p>Signal delay _____ 4.9 ns/m</p> <p>Insulation material _____ PVC</p> <p>Temperature rating _____ -20 °C ... + 105 °C</p> <p>Flammability rating _____ UL: VW 1</p> <p>Insulation resistance _____ 10⁴ MΩ/km</p>	<p>Colour code sequence (in 10 steps)</p> <p>brown, red, orange, yellow, green, blue, violet, grey, white, black</p>

Important: always store reels vertically

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 20 130	10	09 18 010 7006																																									
	14	09 18 014 7006																																									
	16	09 18 016 7006																																									
	20	09 18 020 7006																																									
	26	09 18 026 7006																																									
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	40	09 18 040 7006																																									
	50	09 18 050 7006																																									
	60	09 18 060 7006																																									
	64	09 18 064 7006																																									
	Round flat cable with screening (shielding) UL listed PLCC CL2 CSA certified AWM FT-1 Length per reel 30.48 m (100 feet) 07 100 m (328 feet) 10*	9			09 18 009 70	ø max. 6.86	<table border="1"> <thead> <tr> <th></th> <th>Flat cable twisted pair</th> <th>Round flat cable with screening without screening</th> </tr> </thead> <tbody> <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">10⁺ 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> </tbody> </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 mm ²		Voltage rating	300 V _{r.m.s.}		Temperature rating	-20 °C ... + 105 °C		Flammability rating	UL: VW 1		Insulation resistance	10 ⁺ 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.
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10		09 18 010 70	6.86																																								
14		09 18 014 70	7.37																																								
15		09 18 015 70	7.62																																								
16		09 18 016 70	7.87																																								
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																																								
50		09 18 050 70	12.19																																								
60		09 18 060 70	13.21																																								
64		09 18 064 70	13.46																																								
without screening (shielding) UL listed PLCC CL2 CSA certified AWM FT-1 Length per reel 30.48 m (100 feet) 08 100 m (328 feet) 11*		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																																								
	16	09 18 016 70	7.11																																								
	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																																								
	50	09 18 050 70	11.43																																								
	60	09 18 060 70	12.45																																								
	64	09 18 064 70	12.70																																								

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

A large rectangular area filled with a fine grid of small squares, intended for writing notes or technical drawings.

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.



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
<p>Fibre optic cable, double ended, single mode</p> <p>Length: a = 1 m</p> <p>a = 5 m</p> <p>a = 10 m</p> <p>a = 20 m</p> <p>a = 40 m</p> <p>a = 50 m</p> <p>a = 100 m</p>	<p>33 58 211 0010 002</p> <p>33 58 211 0050 002</p> <p>33 58 211 0100 002</p> <p>33 58 211 0200 002</p> <p>33 58 211 0400 002</p> <p>33 58 211 0500 002</p> <p>33 58 211 1000 002</p>	<p>double ended</p>	
<p>Fibre optic cable, single ended, single mode</p> <p>Length: a = 1 m</p> <p>a = 5 m</p> <p>a = 10 m</p> <p>a = 20 m</p> <p>a = 40 m</p> <p>a = 50 m</p> <p>a = 100 m</p>	<p>33 58 111 0010 002</p> <p>33 58 111 0050 002</p> <p>33 58 111 0100 002</p> <p>33 58 111 0200 002</p> <p>33 58 111 0400 002</p> <p>33 58 111 0500 002</p> <p>33 58 111 1000 002</p>	<p>Protection level: IP 65 / IP 67</p> <p>single ended</p>	
<p>Fibre optic breakout cable, single mode</p> <p>Length: 10 m</p> <p>Length: 20 m</p> <p>Length: 100 m</p>	<p>33 58 751 0100 002</p> <p>33 58 751 0200 002</p> <p>33 58 751 1000 002</p>	<p>PUR jacket</p> <p>2-fibre single mode</p> <p>Outer diameter: 6.5 mm</p> <p>Min. bending radius: 10.4 cm</p> <p>Installation: 10.4 cm</p> <p>Operating: 5.2 cm</p>	



Fibre optic
LC duplex multi mode, 50 µm

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

Further cable lengths are available on request



Fibre optic
LC duplex multi mode, 62.5 µm

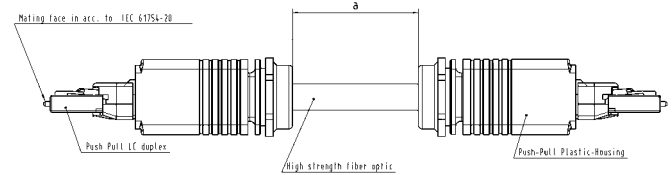
Identification	Part No.	Drawing	Dimensions in mm
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Fibre optic cable, double ended, multi mode, 62.5 µm

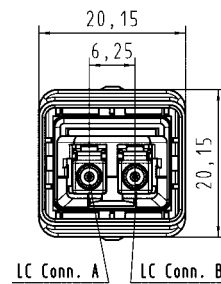
- Length: a = 1 m
 a = 5 m
 a = 10 m
 a = 20 m
 a = 40 m
 a = 50 m
 a = 100 m

- 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

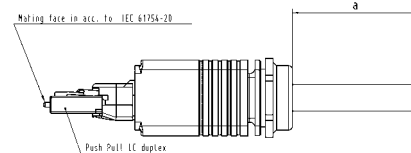


a = length



Protection level: IP 65 / IP 67

single ended

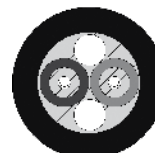


a = length

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
<p>Fibre optic cable, double ended, single mode, metal 2 x Han® 3 A, 2 x LC duplex</p> <p>Length: a = 1 m a = 5 m a = 10 m a = 20 m a = 40 m a = 50 m a = 100 m</p>	<p>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</p>	<p>double ended</p> <p>a = length</p>	
<p>Fibre optic cable, single ended, single mode, metal 1 x Han® 3 A, 2 x LC duplex</p> <p>Length: a = 1 m a = 5 m a = 10 m a = 20 m a = 40 m a = 50 m a = 100 m</p>	<p>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</p>	<p>Protection level: IP 65 / IP 67</p> <p>single ended</p> <p>a = length</p>	
<p>Fibre optic breakout cable, single mode</p> <p>Length: 10 m Length: 20 m Length: 100 m</p>	<p>33 54 751 0100 001 33 54 751 0200 001 33 54 751 1000 001</p>	<p>PVC jacket 4-fibre single mode Outer diameter: 9.5 mm Min. bending radius: Installation: 15 x OD Operating: 10 x OD</p>	

Further cable lengths are available on request

**available
Q2 / 2010**



Fibre optic
2 x LC duplex multi mode, 50 µm

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

**available
Q2 / 2010**



Hybrid fibre optic
LC duplex single mode

Identification	Part No.	Drawing	Dimensions in mm
<p>Hybrid fibre optic cable, single mode, double ended 2 x FO + 3 x 2.5 mm², 2 x Han® 3 A</p> <p>Length: a = 1 m AC version DC version</p> <p>a = 5 m AC version DC version</p> <p>a = 10 m AC version DC version</p> <p>a = 20 m AC version DC version</p> <p>a = 40 m AC version DC version</p> <p>a = 50 m AC version DC version</p> <p>a = 100 m AC version DC version</p>	<p>33 57 211 0015 003 33 57 211 0015 004</p> <p>33 57 211 0055 003 33 57 211 0055 004</p> <p>33 57 211 0105 003 33 57 211 0105 004</p> <p>33 57 211 0205 003 33 57 211 0205 004</p> <p>33 57 211 0405 003 33 57 211 0405 004</p> <p>33 57 211 0505 003 33 57 211 0505 004</p> <p>33 57 211 1005 003 33 57 211 1005 004</p>	<p>double ended</p> <p>a = length</p> <p>Protection level: IP 65 / IP 67</p>	
<p>Hybrid fibre optic cable, single mode, single ended 2 x FO + 3 x 2.5 mm², 1 x Han® 3 A</p> <p>Length: a = 1 m AC version DC version</p> <p>a = 5 m AC version DC version</p> <p>a = 10 m AC version DC version</p> <p>a = 20 m AC version DC version</p> <p>a = 40 m AC version DC version</p> <p>a = 50 m AC version DC version</p> <p>a = 100 m AC version DC version</p>	<p>33 57 111 0015 003 33 57 111 0015 004</p> <p>33 57 111 0055 003 33 57 111 0055 004</p> <p>33 57 111 0105 003 33 57 111 0105 004</p> <p>33 57 111 0205 003 33 57 111 0205 004</p> <p>33 57 111 0405 003 33 57 111 0405 004</p> <p>33 57 111 0505 003 33 57 111 0505 004</p> <p>33 57 111 1005 003 33 57 111 1005 004</p>	<p>single ended</p> <p>a = length</p>	
<p>Hybrid fibre optic cable, single mode</p> <p>Length: 10 m</p> <p>Length: 20 m</p> <p>Length: 500 m</p>	<p>33 57 851 0100 003</p> <p>33 57 851 0200 003</p> <p>33 57 851 5000 003</p>	<p>PVC jacket 2 x 9/125 + 3 x 2.5 mm² Outer diameter: 8.8 mm Min. bending radius: Installation: 9 cm Operating: 18 cm</p>	

Further cable lengths are available on request



Hybrid fibre optic
LC duplex multi mode, 50 μ m

Identification	Part No.	Drawing	Dimensions in mm
<p>Hybrid fibre optic cable, multi mode, double ended 2 x G50/125 + 3 x 2.5 mm²</p> <p>Length: a = 1 m AC version DC version</p> <p>a = 5 m AC version DC version</p> <p>a = 10 m AC version DC version</p> <p>a = 20 m AC version DC version</p> <p>a = 40 m AC version DC version</p> <p>a = 50 m AC version DC version</p> <p>a = 100 m AC version DC version</p>	<p>33 57 211 0015 001 33 57 211 0015 002</p> <p>33 57 211 0055 001 33 57 211 0055 002</p> <p>33 57 211 0105 001 33 57 211 0105 002</p> <p>33 57 211 0205 001 33 57 211 0205 002</p> <p>33 57 211 0405 001 33 57 211 0405 002</p> <p>33 57 211 0505 001 33 57 211 0505 002</p> <p>33 57 211 1005 001 33 57 211 1005 002</p>	<p>double ended</p> <p>a = length</p> <p>Protection level: IP 65 / IP 67</p>	
<p>Hybrid fibre optic cable, multi mode, single ended 2 x G50/125 + 3 x 2.5 mm²</p> <p>Length: a = 1 m AC version DC version</p> <p>a = 5 m AC version DC version</p> <p>a = 10 m AC version DC version</p> <p>a = 20 m AC version DC version</p> <p>a = 40 m AC version DC version</p> <p>a = 50 m AC version DC version</p> <p>a = 100 m AC version DC version</p>	<p>33 57 111 0015 001 33 57 111 0015 002</p> <p>33 57 111 0055 001 33 57 111 0055 002</p> <p>33 57 111 0105 001 33 57 111 0105 002</p> <p>33 57 111 0205 001 33 57 111 0205 002</p> <p>33 57 111 0405 001 33 57 111 0405 002</p> <p>33 57 111 0505 001 33 57 111 0505 002</p> <p>33 57 111 1005 001 33 57 111 1005 002</p>	<p>single ended</p> <p>a = length</p>	
<p>Hybrid fibre optic cable, multi mode, 50 μm</p> <p>Length: 10 m</p> <p>Length: 20 m</p> <p>Length: 500 m</p>	<p>33 57 851 0100 002</p> <p>33 57 851 0200 002</p> <p>33 57 851 5000 002</p>	<p>PVC jacket</p> <p>2 x G50/125 + 3 x 2.5 mm²</p> <p>Outer diameter: 12.6 mm</p> <p>Min. bending radius:</p> <ul style="list-style-type: none"> single: 5 x OD repeated: 10 x OD 	



Hybrid RJ45

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

Further cable lengths are available on request



RJ45, 4-wire

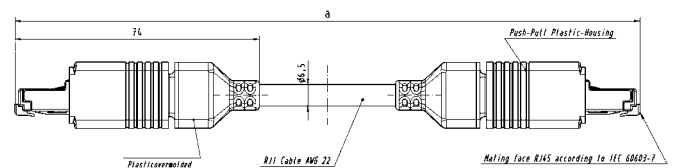
Identification	Part No.	Drawing	Dimensions in mm
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**HARTING PushPull
Outdoor cable, RJ45, 4-wire**

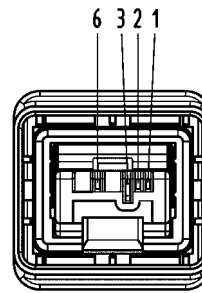
- Length: a = 1.5 m
 a = 3.0 m
 a = 5.0 m
 a = 10.0 m
 a = 20.0 m

- 09 47 363 6069
 09 47 363 6071
 09 47 363 6073
 09 47 363 6078
 09 47 363 6080

double ended



a = length

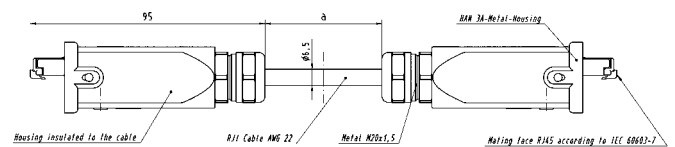


**Han® 3 A
Outdoor cable, RJ45, 4-wire**

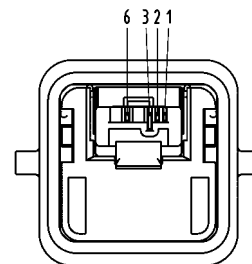
- Length: a = 1.5 m
 a = 3.0 m
 a = 5.0 m
 a = 10.0 m
 a = 20.0 m

- 09 45 715 0064
 09 45 715 0066
 09 45 715 0068
 09 45 715 0073
 09 45 715 0075

double ended



a = length



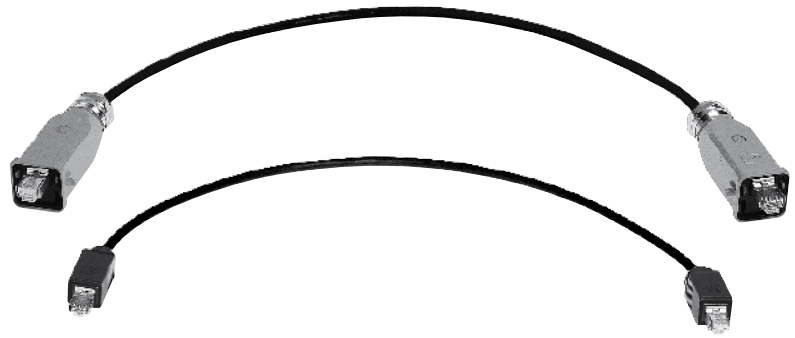
**Outdoor cable 4-wire, RJ45,
Cat. 5, PVC**

- 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



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

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

Further cable lengths are available on request



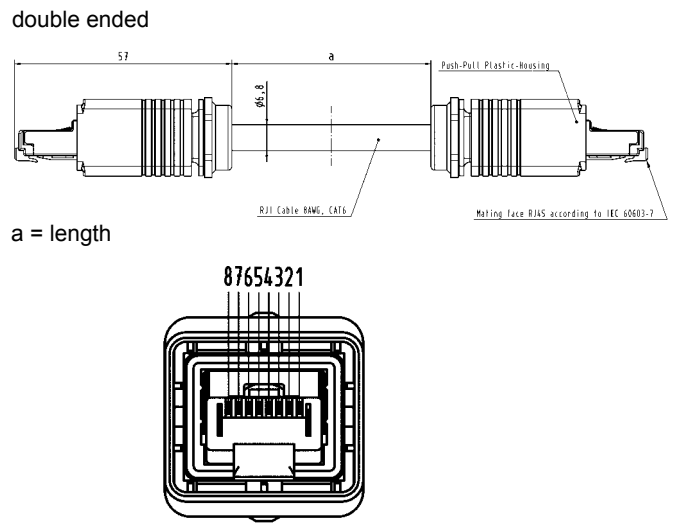
RJ45, 8-wire Cat. 6

Identification	Part No.	Drawing	Dimensions in mm
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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

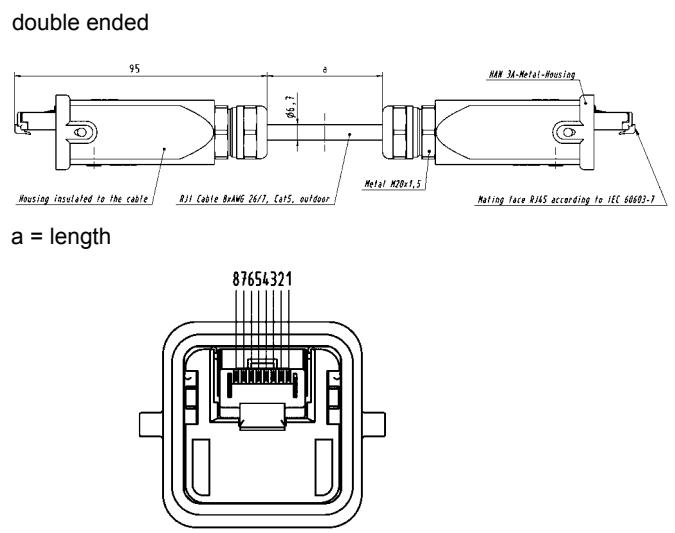
- 09 45 745 1578
 09 45 745 1580
 09 45 745 1582
 09 45 745 1587
 09 45 745 1589



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

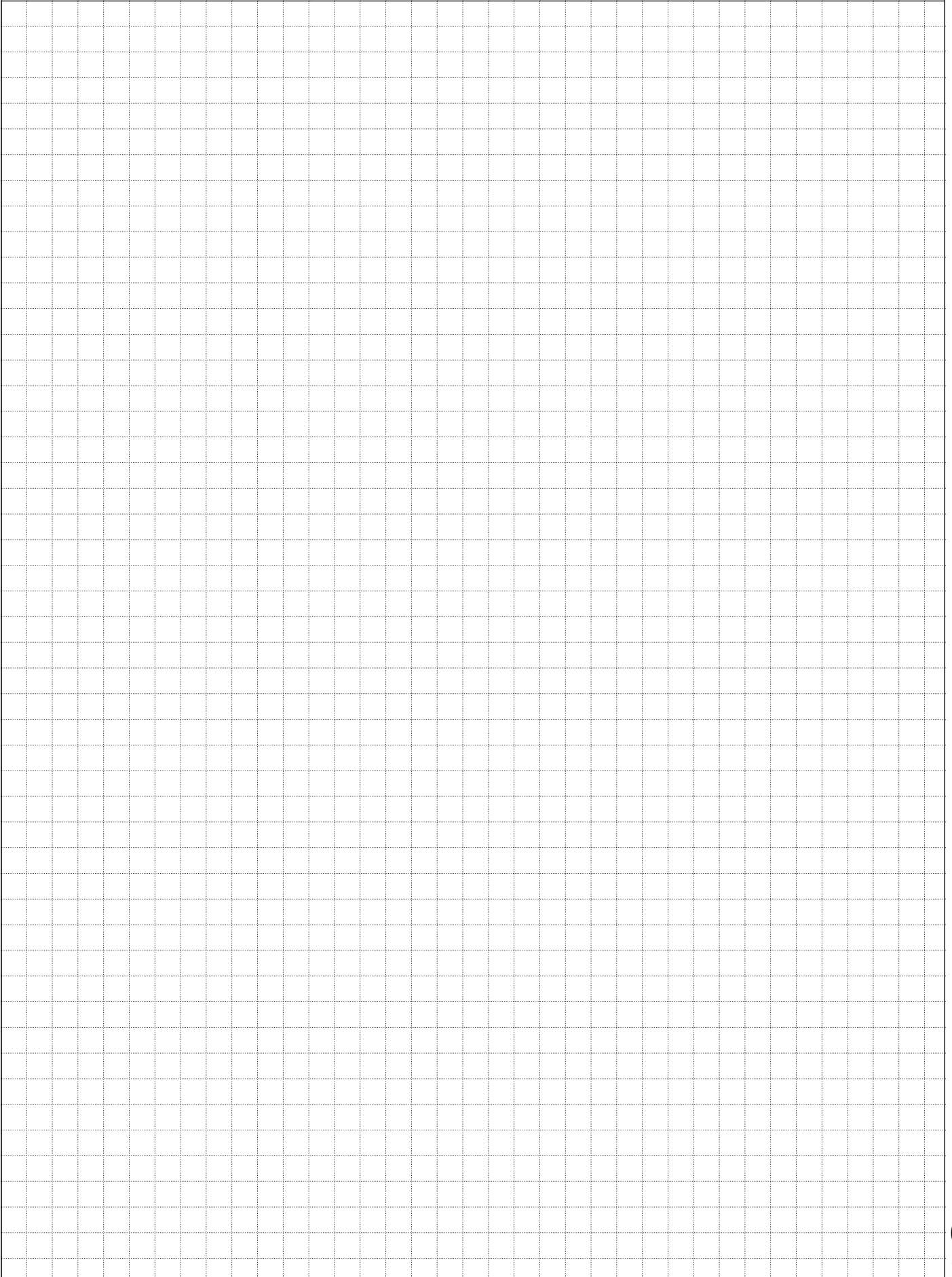


Outdoor cable 8-wire, RJ45,
Cat. 6, PVC

- 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



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

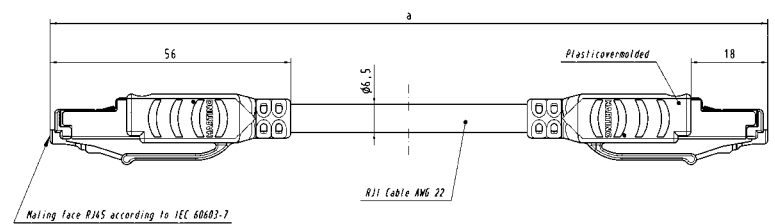
HARTING RJ Industrial®
System cable RJ45,
4-wire

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



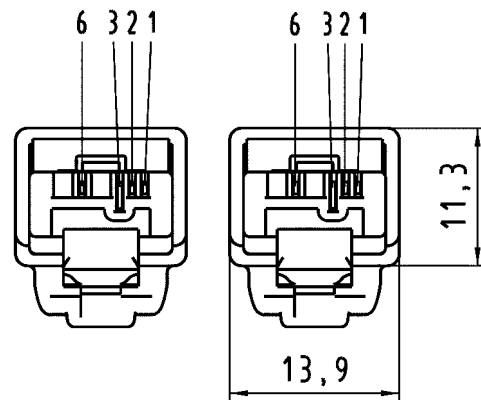
a = length

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

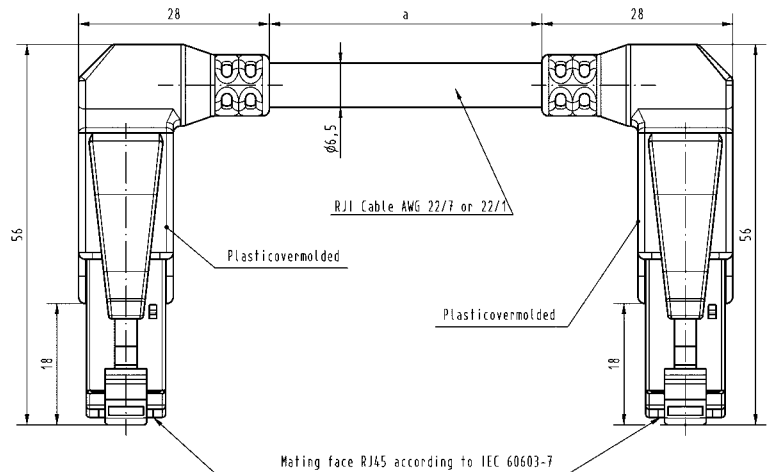
HARTING RJ Industrial®
System cable
RJ45, angled, 4-wire

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



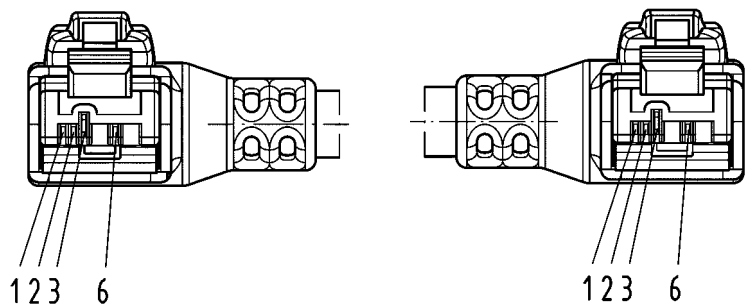
HARTING RJ Industrial®
System cable
RJ45, angled, 4-wire

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

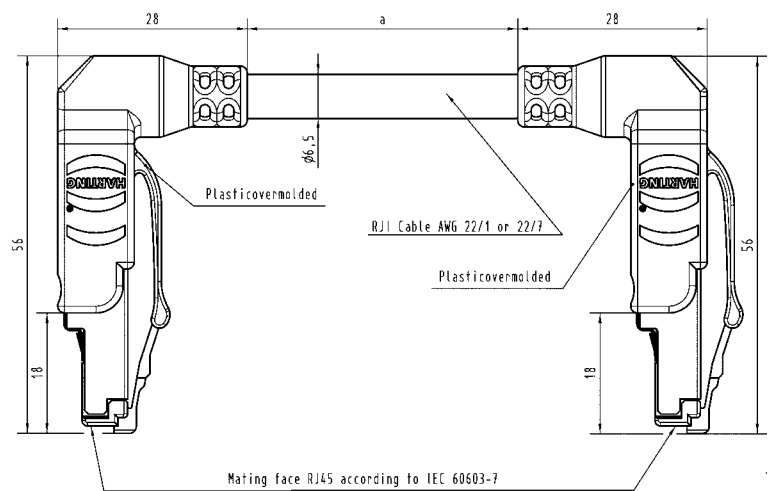
HARTING RJ Industrial® System cable RJ45, angled, 4-wire

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



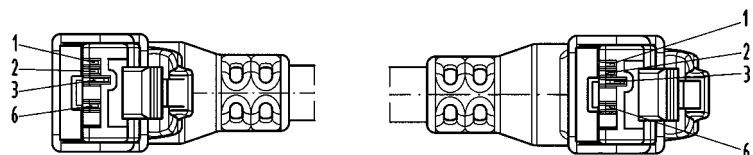
HARTING RJ Industrial® System cable RJ45, angled, 4-wire

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

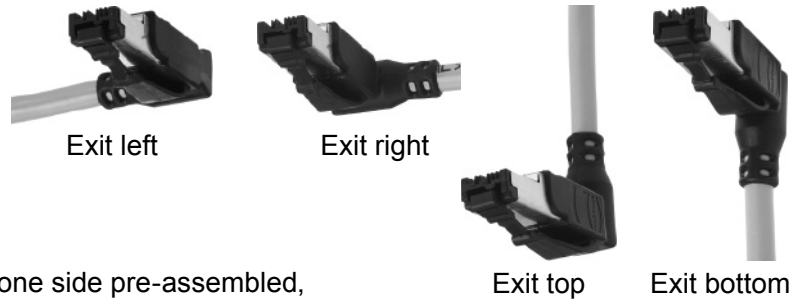


HARTING RJ Industrial® System cable RJ45, angled, 4-wire

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

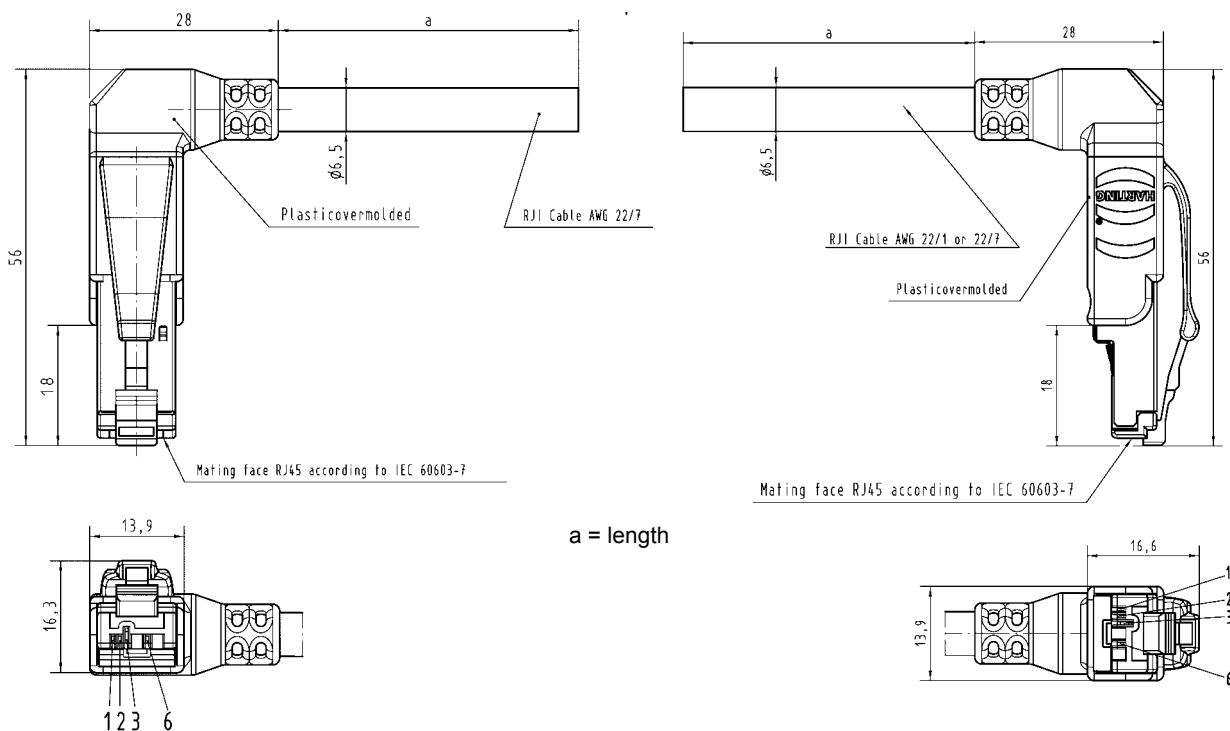


HARTING RJ Industrial® System cable RJ45, 4-wire, angled

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

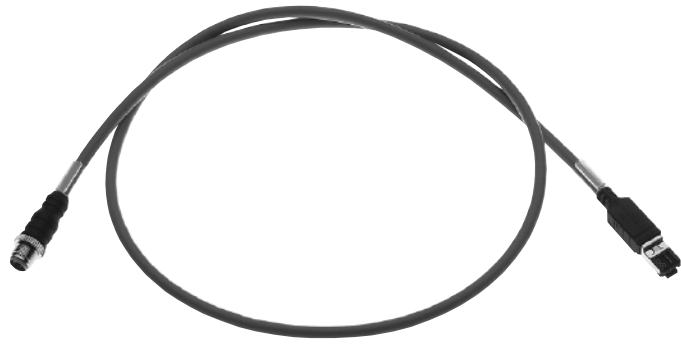
single ended



Further cable lengths are available on request

Han® M12 RJ45 System cable 4-wire

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

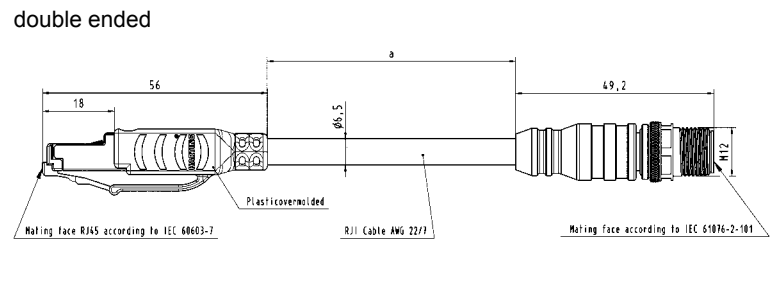


Identification	Part No.	Drawing	Dimensions in mm
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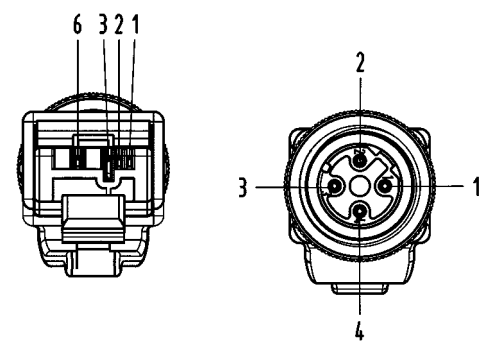
Han® M12
System cable, 4-wire
AWG 22/7
trailing PUR

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



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

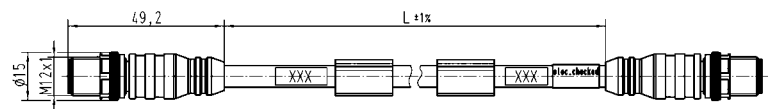
Dimensions in mm

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

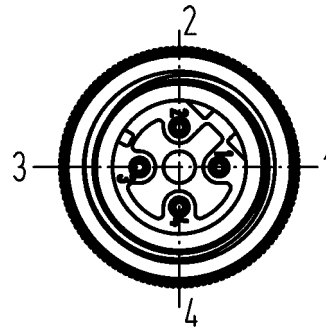
Length: a = 1.5 m
a = 3.0 m
a = 5.0 m
a = 10.0 m
a = 20.0 m

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

double ended



a = length



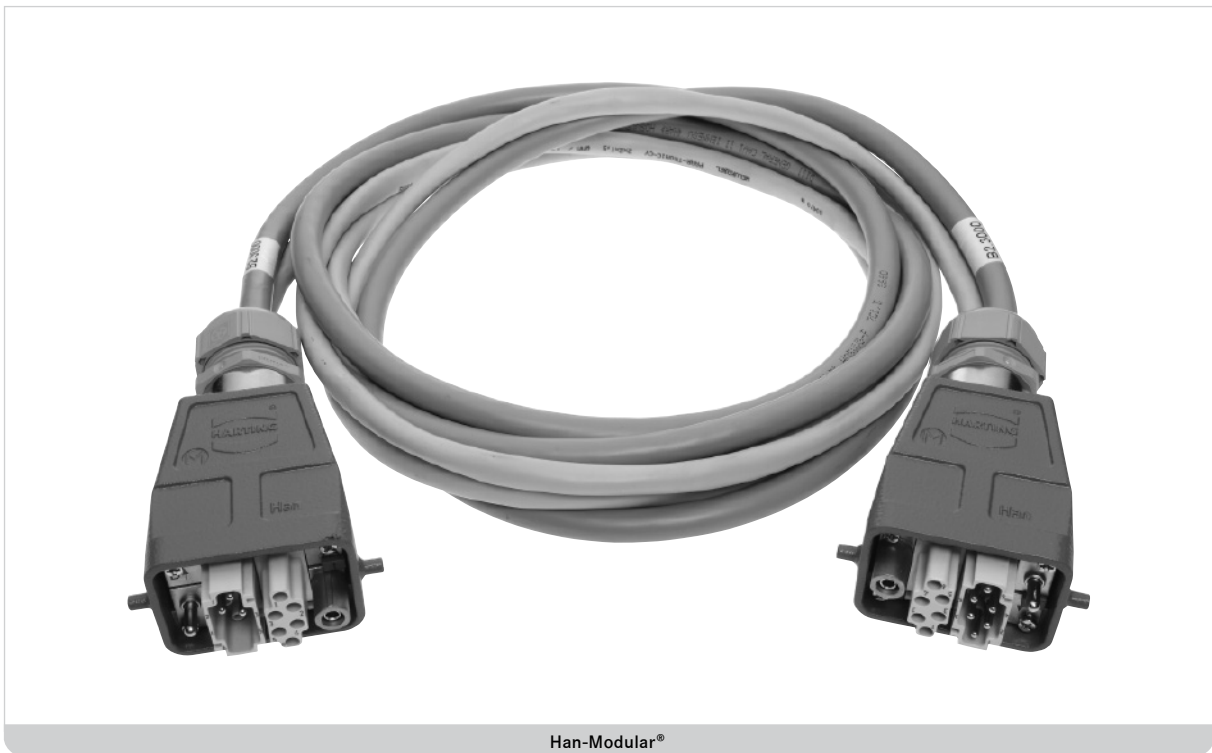
HARTING offers a wide range of cable assemblies to cover applications in different market areas. For this, there is a broad portfolio of standard products existing. Nevertheless, HARTING also offers the service of customer specific goods. With this, the high level components are integrated into a framework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



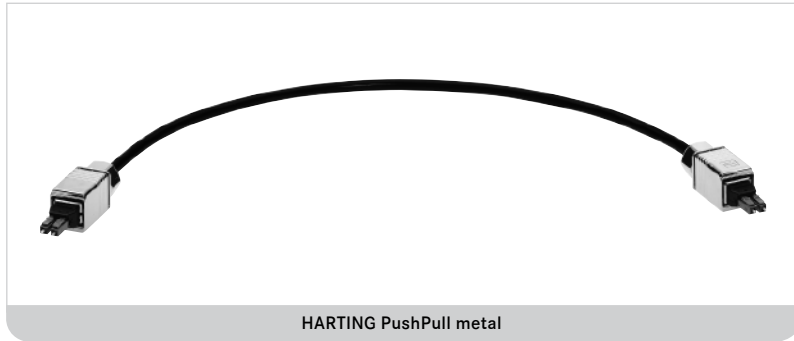
Herewith, efficient processes and reliable technologies are available and will be applied for the individual applications and the referring custom-made products. Influencing factors and environmental conditions are considered here to set up the best solution for the HARTING customer.



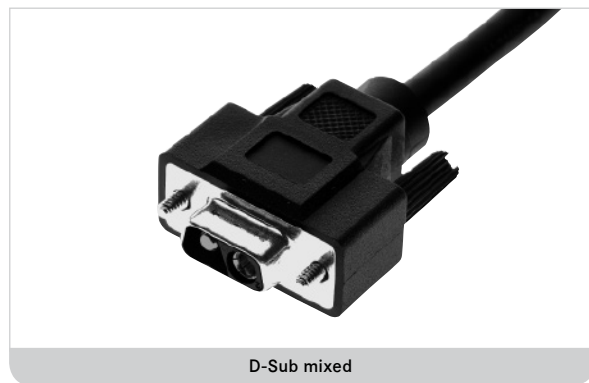
Especially by utilising the whole Han® range, applications like wind energy, transportation or machinery are covered with high level products. Here, the long term **HARTING** experience in these fields is applied.

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



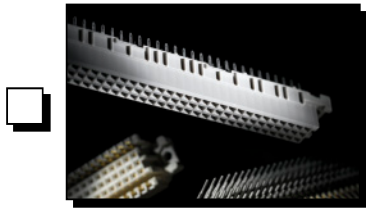
Interface Connectors



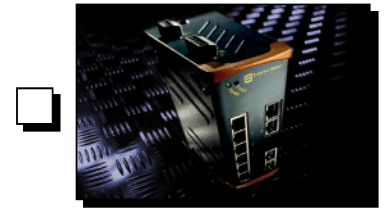
Outdoor Solutions



Industrial Connectors Han®



**Connectors
DIN 41612**



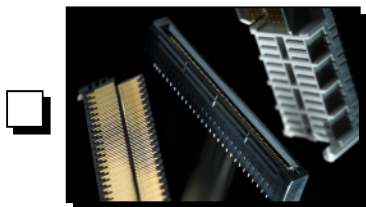
**Ethernet
Network Solutions**



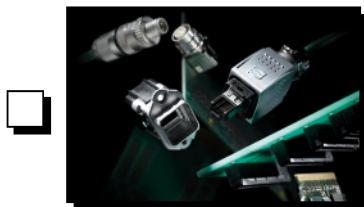
**Coaxial and Metric
Connectors**



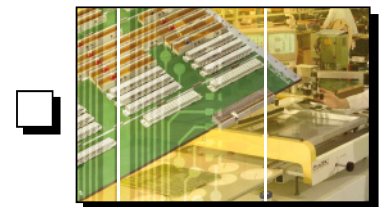
**Application
brochure**



TCA Connectors



Device Connectivity



**Backplanes and
Integrated Systems**

Sender:

Company: _____

Street: _____

Department: _____

Postcode/Town: _____

Name: _____

Country: _____

Prenome: _____

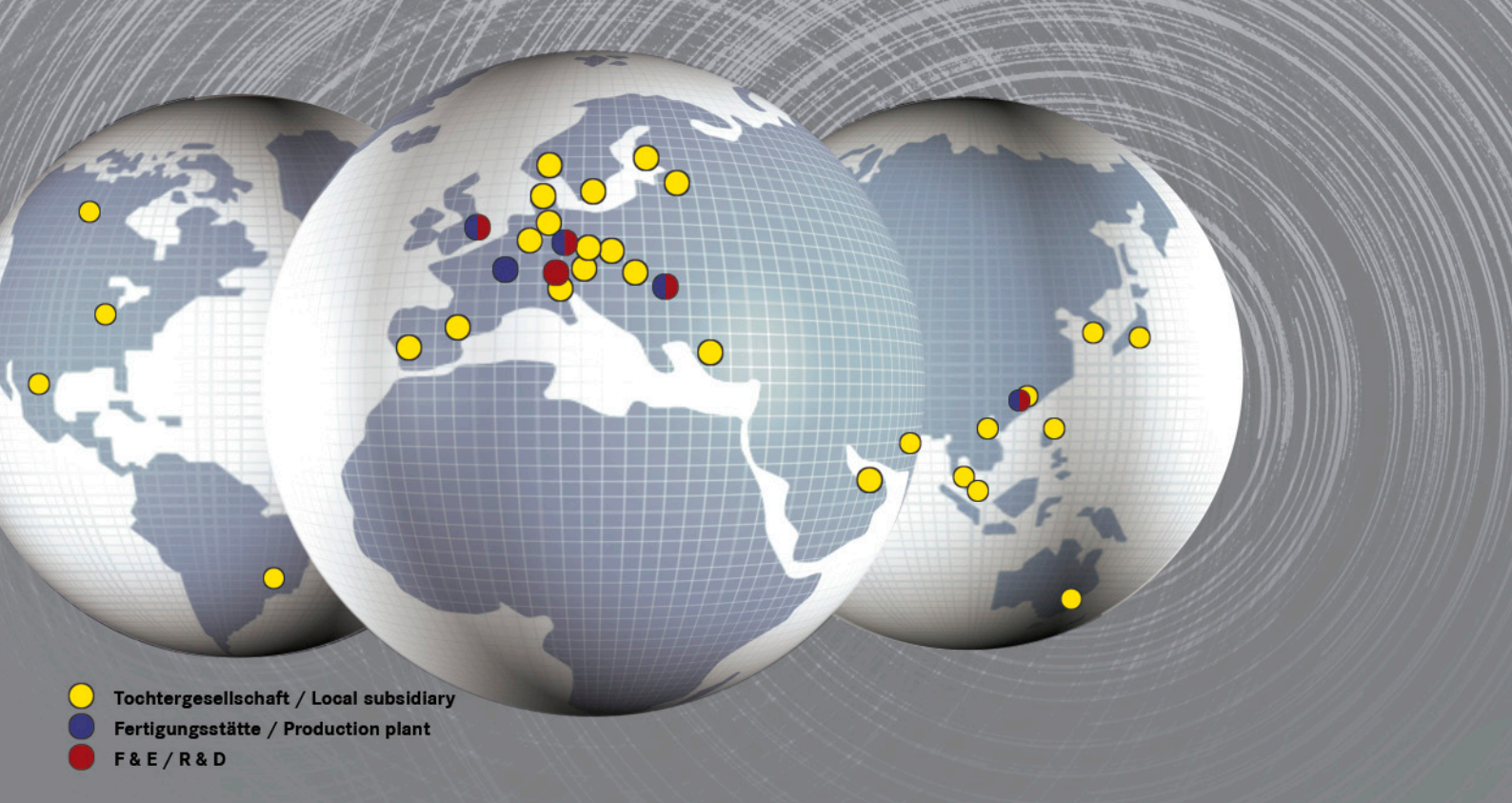
Phone: _____

Function: _____

Fax: _____

E-Mail: _____

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