



Pushing Performance
Since 1945



PEOPLE. POWER. PARTNERSHIP.

HARTING

Ethernet Portfolio Guide

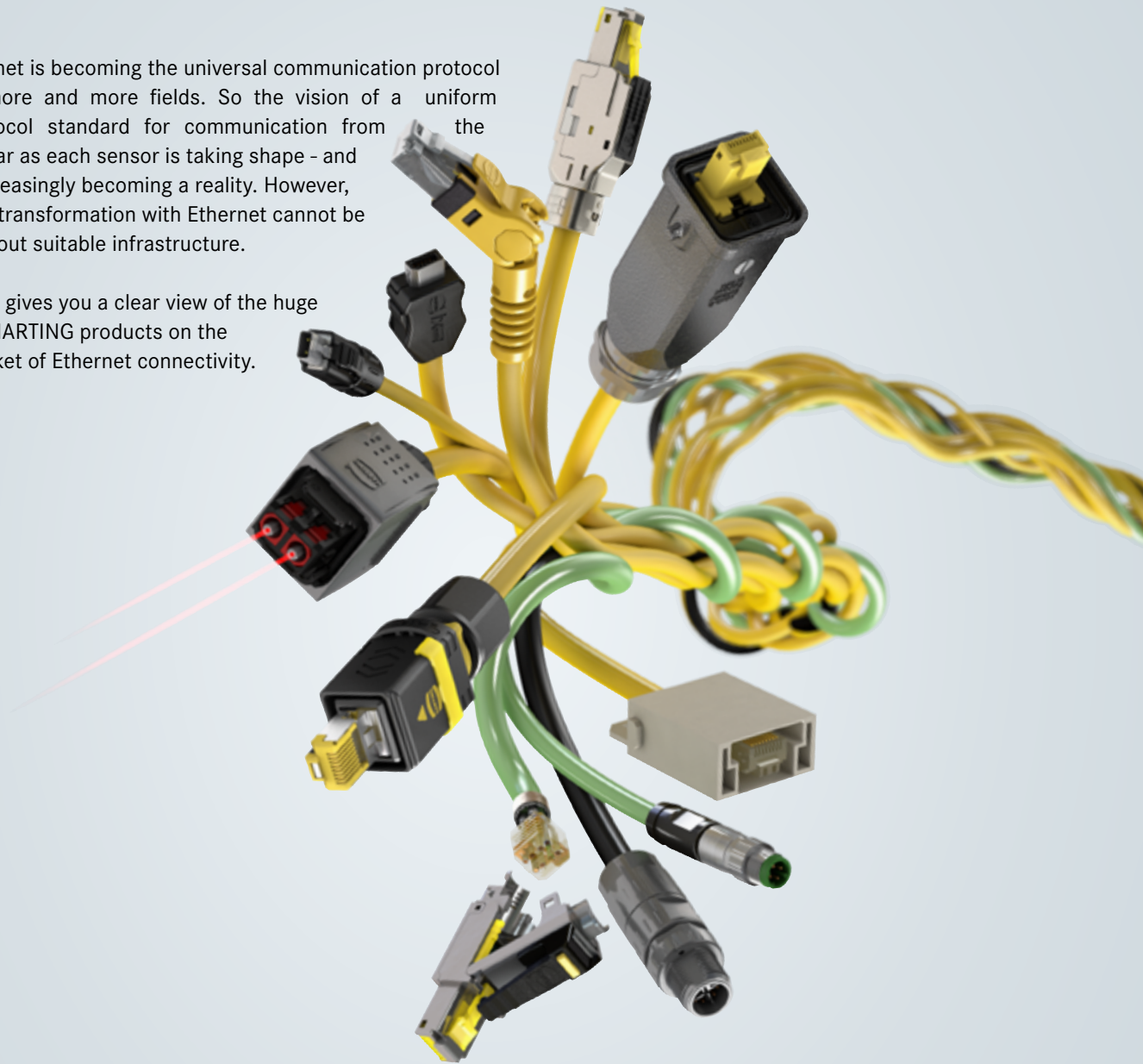
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Introduction

Ethernet is becoming the universal communication protocol in more and more fields. So the vision of a uniform protocol standard for communication from the cloud as far as each sensor is taking shape - and IIoT is increasingly becoming a reality. However, industrial transformation with Ethernet cannot be done without suitable infrastructure.

This guide gives you a clear view of the huge range of HARTING products on the large market of Ethernet connectivity.

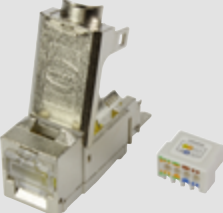


DIGITALISATION IN INDUSTRIAL AUTOMATION IS ADVANCING WITH GREAT STRIDES.

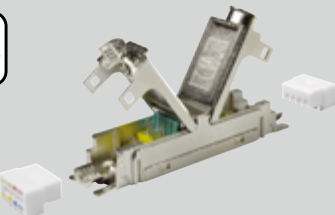
RJ Industrial® RJ45 connectors

  	RJ Industrial® connector straight 4 IDC contacts, can be assembled in the field without tools - Conductors AWG 27-22, solid/stranded - Transmission rate: 10/100 Mbit/s	09 45 151 1120
  	RJ Industrial® connector, angled 45° (4 possible directions) 4 IDC contacts, can be assembled in the field without tools - Conductors AWG 27-22, solid/stranded - Transmission rate: 10/100 Mbit/s	09 45 151 1121
  	RJ Industrial® connector EtherRail® straight 4 IDC contacts, can be assembled in the field without tools - Conductors AWG 27-22, solid/stranded - Transmission rate: 10/100 Mbit/s	09 45 151 1122
  	RJ Industrial® connector straight 8 IDC contacts, can be assembled in the field without tools - Conductors AWG 27-22, solid/stranded - Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s	09 45 151 1560
  	RJ Industrial® connector, angled 45° (4 possible directions) 8 IDC contacts, can be assembled in the field without tools - Conductors AWG 27-22, solid/stranded - Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s	09 45 151 1561
  	RJ Industrial® connector Multi-Featured 4 IDC contacts, can be assembled in the field without tools - Conductors AWG 26-22, solid/stranded - Transmission rate: 10/100 Mbit/s - Integrated blades cut the wire cores to the correct length	09 45 151 1140
  	RJ Industrial® connector Multi-Featured angled 90° (4 possible directions) 4 IDC contacts, can be assembled in the field without tools - Conductors AWG 26-22, solid/stranded - Transmission rate: 10/100 Mbit/s - Integrated blades cut the wire cores to the correct length	09 45 151 1141
  	RJ Industrial® connector Multi-Featured angled 35° (4 possible directions) 4 IDC contacts, can be assembled in the field without tools - Conductors AWG 26-22, solid/stranded - Transmission rate: 10/100 Mbit/s - Integrated blades cut the wire cores to the correct length	09 45 151 1142
  	RJ Industrial® connector Multi-Featured 8 IDC contacts, can be assembled in the field without tools - Conductors AWG 26-22, solid/stranded - Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s - Integrated blades cut the wire cores to the correct length	09 45 151 1570
  	RJ Industrial® connector Multi-Featured angled 90° (4 possible directions) 8 IDC contacts, can be assembled in the field without tools - Conductors AWG 26-22, solid/stranded - Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s - Integrated blades cut the wire cores to the correct length	09 45 151 1571
  	RJ Industrial® connector Multi-Featured angled 35° (4 possible directions) 8 IDC contacts, can be assembled in the field without tools - Conductors AWG 26-22, solid/stranded - Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s - Integrated blades cut the wire cores to the correct length	09 45 151 1572

RJ Industrial® RJ45 jacks

CAT. 6_A		RJ Industrial® jacks ■ HIFF format ■ 8 IDC contacts, can be assembled in the field without tools ■ Shielded ■ Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s	
		Conductors AWG 28-24, solid/stranded	09 45 545 1561
		Conductors AWG 24-22, solid/stranded	09 45 545 1562
CAT. 6_A		RJ Industrial® jacks ■ Keystone format ■ 8 IDC contacts, can be assembled in the field without tools ■ Shielded ■ Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s	
		Conductors AWG 28-24, solid/stranded	09 45 545 1563
		Conductors AWG 24-22, solid/stranded	09 45 545 1564

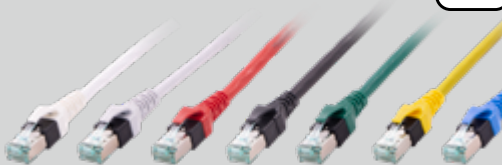
RJ Industrial® couplers

CAT. 6		RJ Industrial® coupler RJ45 ■ HIFF format ■ Shielded ■ Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s	09 45 545 1560
CAT. 6		RJ Industrial® coupler RJ45 ■ Keystone format ■ Shielded ■ Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s	09 45 545 1568
CAT. 6_A		HARTING RJ Industrial® 10G extender ■ 8 IDC contacts, can be assembled in the field without tools ■ Conductors AWG 24-22, solid/stranded ■ Shielded ■ Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s	09 45 545 1569
IP65 IP67		RJ Industrial® RJ45 coupler housing ■ Polyamide (PA) ■ Compatible with 09 45 545 1569 ■ Degree of protection IP65/IP67	09 45 805 0000

RJ Industrial® coupler housing

   	RJ Industrial® RJ45 coupler housing - Degree of protection IP65 / IP67 - Polyamide (PA) 360° shielded insert	09 45 805 1560
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DualBoot® RJ45 system cables

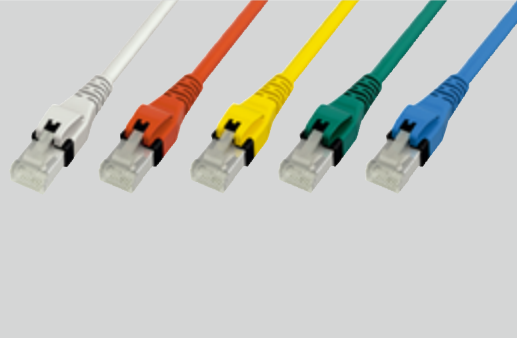
	CAT. 5 CAT. 5e	DualBoot® RJ45 Ethernet system cables FRNC cable - S/FTP Halogen free, RoHS	<table><tr><td>Grey</td><td> </td><td>09 48 868 6569 xxx</td></tr><tr><td>Red</td><td> </td><td>09 48 868 6570xxx</td></tr><tr><td>Yellow</td><td> </td><td>09 48 868 6571xxx</td></tr><tr><td>Green</td><td> </td><td>09 48 868 6572xxx</td></tr><tr><td>Blue</td><td> </td><td>09 48 868 6573xxx</td></tr></table>	Grey		09 48 868 6569 xxx	Red		09 48 868 6570xxx	Yellow		09 48 868 6571xxx	Green		09 48 868 6572xxx	Blue		09 48 868 6573xxx						
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Green		09 48 868 6572xxx																						
Blue		09 48 868 6573xxx																						
	CAT. 6A	DualBoot® RJ45 Ethernet system cables FRNC cable - S/FTP Halogen free, RoHS	<table><tr><td>White</td><td> </td><td>09 48 878 7584xxx</td></tr><tr><td>Grey</td><td> </td><td>09 48 878 7585xxx</td></tr><tr><td>Red</td><td> </td><td>09 48 878 7586xxx</td></tr><tr><td>Yellow</td><td> </td><td>09 48 878 7587xxx</td></tr><tr><td>Green</td><td> </td><td>09 48 878 7588xxx</td></tr><tr><td>Blue</td><td> </td><td>09 48 878 7589xxx</td></tr><tr><td>Black</td><td> </td><td>09 48 878 7590xxx</td></tr></table>	White		09 48 878 7584xxx	Grey		09 48 878 7585xxx	Red		09 48 878 7586xxx	Yellow		09 48 878 7587xxx	Green		09 48 878 7588xxx	Blue		09 48 878 7589xxx	Black		09 48 878 7590xxx
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	+80 -40  UL LISTED CAT. 6A	DualBoot® RJ45 Ethernet system cables PUR cable - S/FTP Halogen free, RoHS UN ECE-R118 UL listed	<table><tr><td>Grey</td><td> </td><td>09 48 474 7743xxx</td></tr><tr><td>Green</td><td> </td><td>09 48 474 7744xxx</td></tr><tr><td>Yellow</td><td> </td><td>09 48 474 7756xxx</td></tr></table>	Grey		09 48 474 7743xxx	Green		09 48 474 7744xxx	Yellow		09 48 474 7756xxx												
Grey		09 48 474 7743xxx																						
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Yellow		09 48 474 7756xxx																						

xxx = Length of cable

005 = 0.5 m	010 = 1.0 m	015 = 1.5 m	020 = 2.0 m	030 = 3.0 m	050 = 5.0 m	075 = 7.5 m	100 = 10 m	150 = 15 m	200 = 20 m
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Other lengths available on request (in 10 cm steps)

DualBoot® RJ45 PushPull system cables

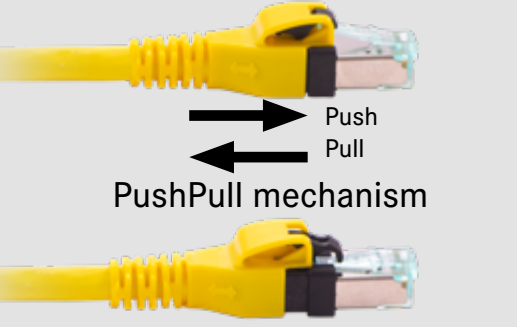


DualBoot® RJ45 PushPull Ethernet system cables

- FRNC cable - S/FTP
- Halogen free, RoHS

CAT. 5
CAT. 5e

Grey		09 48 898 9595xxx
Red		09 48 898 9596xxx
Yellow		09 48 898 9597xxx
Green		09 48 898 9594xxx
Blue		09 48 898 9598xxx
Orange		09 48 898 9593xxx



Push
Pull

PushPull mechanism

■ Pull: pull on the housing or bend protection mechanism to unplug the connector.

DualBoot® RJ45 PushPull Ethernet system cables

- FRNC cable - S/FTP
- Halogen free, RoHS

CAT. 6A

White		09 48 888 8574xxx
Black		09 48 888 8575xxx
Grey		09 48 888 8576xxx
Red		09 48 888 8577xxx
Yellow		09 48 888 8578xxx
Green		09 48 888 8579xxx
Blue		09 48 888 8580xxx
Orange		09 48 888 8592xxx

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Other lengths available on request (in 10 cm steps)

DualBoot® RJ45 - Characteristics and advantages

The DualBoot® RJ45 is an overmoulded RJ45 that is specially customise for industrial requirements.



- Connector shielded 360°
- Compact
- Excellent resistance to vibrations and shocks
- Cables tested 100%



VarioBoot® RJ45 system cables

	Connector 1		Connector 2			
	VarioBoot® RJ45 UaD ¹	DualBoot® RJ45	Yellow		09 48 844 7745xxx	
	VarioBoot® RJ45 UaD ¹	VarioBoot® RJ45 UaD ¹	Yellow		09 48 848 4745xxx	
	VarioBoot® RJ45 UaD ¹	VarioBoot® RJ45 LaR ²	Yellow		09 48 848 5745xxx	
	VarioBoot® RJ45 LaR ²	DualBoot® RJ45	Yellow		09 48 854 7745xxx	
	VarioBoot® RJ45 LaR ²	VarioBoot® RJ45 LaR ²	Yellow		09 48 858 5745xxx	
	VarioBoot® RJ45 LaR ²	RJ45 insert HIFF	Yellow		09 48 841 1745 xxx	
PUR cable S/FTP						
	FRNC cable - S/FTP		Connector 2			
	VarioBoot® RJ45 LaR ²	DualBoot® RJ45	Grey		09 48 858 7585xxx	
	VarioBoot® RJ45 LaR ²	DualBoot® RJ45	Red		09 48 858 7586xxx	
	VarioBoot® RJ45 LaR ²	DualBoot® RJ45	Yellow		09 48 858 7587xxx	
	VarioBoot® RJ45 LaR ²	DualBoot® RJ45	Green		09 48 858 7588xxx	
	VarioBoot® RJ45 LaR ²	DualBoot® RJ45	Blue		09 48 858 7589xxx	
	FRNC cable - S/FTP		Connector 2			
	VarioBoot® RJ45 LaR ²	VarioBoot® RJ45 LaR ²	Grey		09 48 858 5585xxx	
	VarioBoot® RJ45 LaR ²	VarioBoot® RJ45 LaR ²	Red		09 48 858 5586xxx	
	VarioBoot® RJ45 LaR ²	VarioBoot® RJ45 LaR ²	Yellow		09 48 858 5587xxx	
	VarioBoot® RJ45 LaR ²	VarioBoot® RJ45 LaR ²	Green		09 48 858 5588xxx	
	VarioBoot® RJ45 LaR ²	VarioBoot® RJ45 LaR ²	Blue		09 48 858 5589xxx	

xxx = Length of cable

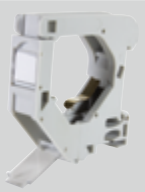
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Other lengths available on request (in 10 cm steps)

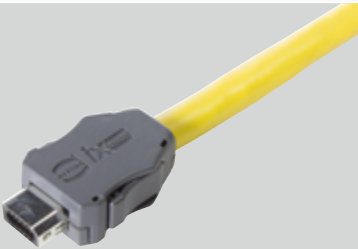
1 = UaD: Up and Down

2 = LaR: Left and Right

Accessories - Mounting of RJ45 Keystone inserts and couplers

		Bracket for mounting on DIN rail ■ For RJ45 connectors in Keystone format ■ With ground connection	09 45 851 0000
		Set of 2 protective covers	09 45 851 0001
		Bracket for mounting on DIN rail ■ For RJ45 connectors in Keystone format ■ With ground connection	09 45 851 0002
		Protection cover	09 45 851 0003
		19" panel, 24 RJ45 ports ■ Compatible with RJ45 inserts and couplers in Keystone format	20 82 400 0002
		Distribution box IP44 ■ For 2 RJ45 connectors in Keystone format	09 45 851 0015
		Earthing cable ■ Ensures the PE connection for RJ45 inserts	09 45 500 0002

ix Industrial® connectors

	ix Industrial® connector Type A 8 conductors + 2 GND 70% more compact than RJ45 - Stronger with its metal locking lugs ≥ 5000 mating cycles - Shielded 360°	
	Soldered contact pins AWG 28-22	09 45 181 2560 XL
	IDC contacts, AWG 28-26	09 45 181 2561 XL
	IDC contacts, AWG 24	09 45 181 2562 XL
	IDC contacts, AWG 22	09 45 181 2563 XL
	ix Industrial® connectors according to type A, 90° angled 8 conductors + 2 GND ≥ 5000 mating cycles - Shielded 360°	
	Angled down version:	
	Soldered contact pins AWG 28-22	09 45 181 2580 XL
	IDC contacts, AWG 28-26	09 45 181 2581 XL
	IDC contacts, AWG 24	09 45 181 2582 XL
	IDC contacts, AWG 22	09 45 181 2583 XL
	Angled up version:	
	Soldered contact pins AWG 28-22	09 45 181 2585 XL
	IDC contacts, AWG 28-26	09 45 181 2586 XL
	IDC contacts, AWG 24	09 45 181 2587 XL
	IDC contacts, AWG 22	09 45 181 2588 XL
	ix Industrial® connector Type A 90° angled, PCB socket, SMD data contacts + THR shield contacts	09 45 281 2560
	ix Industrial® connector Type A Flat mounting, PCB socket, SMD data contacts + THR shield contacts	09 45 281 2561
	ix Industrial® straight connector, type A Straight, PCB socket, SMD data contacts + THR shield contacts	09 45 281 2562
	ix Industrial® tool - Needed to assemble the cable connector - With ratchet mechanism	09 45 800 0181

ix Industrial® Ethernet system cables

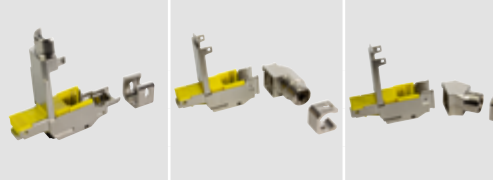
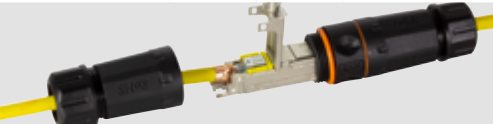
	ix Industrial® Ethernet system cables ■ PVC cable - S/FTP yellow ■ Use with Ethernet switch eCon 2000 Advanced ix Industrial®				CAT. 6A
	Connector 1	Connector 2			
	ix Industrial®	ix Industrial®	Yellow		
	ix Industrial®	RJ45 Gigalink Compact	Yellow		
	ix Industrial® Ethernet system cables ■ FRNC cable - S/FTP ■ Halogen free, RoHS				
	Connector 1	Connector 2			
	ix Industrial®	ix Industrial®	Blue		
	ix Industrial®	ix Industrial®	White		
	ix Industrial®	ix Industrial®	Grey		
	ix Industrial®	ix Industrial®	Red		
	ix Industrial®	ix Industrial®	Yellow		
	ix Industrial®	ix Industrial®	Green		
	ix Industrial®	ix Industrial®	Black		
	Connector 1	Connector 2			
	ix Industrial®	DualBoot® RJ45	Blue		
	ix Industrial®	DualBoot® RJ45	White		
	ix Industrial®	DualBoot® RJ45	Grey		
	ix Industrial®	DualBoot® RJ45	Red		
	ix Industrial®	DualBoot® RJ45	Yellow		
	ix Industrial®	DualBoot® RJ45	Green		
	ix Industrial®	DualBoot® RJ45	Black		
	ix Industrial®	DualBoot® RJ45	Orange		

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Other lengths available on request (in 10 cm steps)

preLink®

	Connection of preLink® cables			CAT. 6_A
	Cable 4 or 8 wires AWG 22-24	Yellow		20 82 000 0001
	Cable 4 or 8 wires AWG 26-27	White		20 82 000 0003
	RJ45 preLink® connector			CAT. 6_A
	Straight			20 82 101 0020
	90° angled (with 4 directions)			20 82 101 0021
	35° angled (with 4 directions)			20 82 101 0022
	RJ45 preLink® jacks in Keystone format			CAT. 6_A
	Straight version			20 82 500 0001
	Angled 90° version			20 82 500 0002
	RJ45 preLink® jack in HIFF format			20 82 000 0002
	preLink® extender			20 82 101 0001
	RJ Industrial® waterproof coupler housing ■ Polyamide (PA) ■ IP65/IP67			09 45 805 0000
	preLink® tool ■ Simultaneously cuts and connects all IDC contacts ■ Ratchet mechanism			20 82 000 9901
	preLink® system cables ■ PUR cable - S/FTP			
	Connector 1	Connector 2		
	preLink®	preLink®	Yellow 	20 82 600 2xxx
	DualBoot® RJ45	preLink®	Yellow 	20 82 601 1xxx

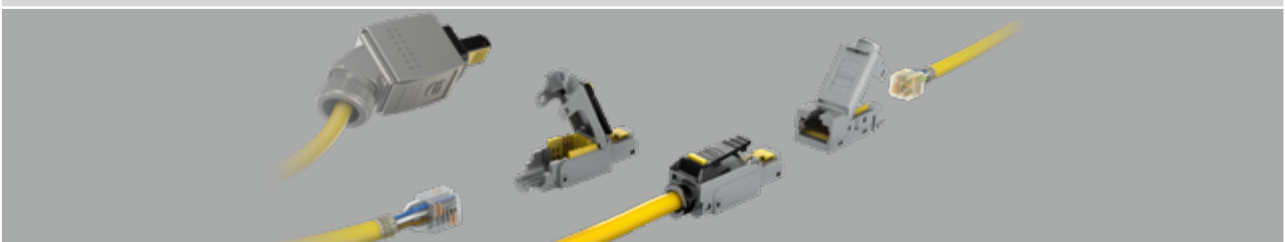
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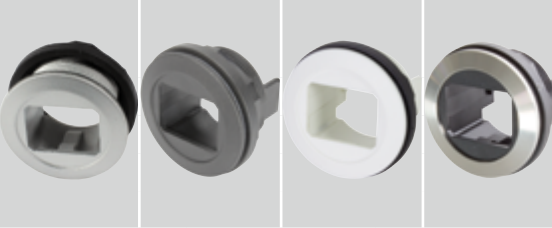
Other lengths available on request (in 10 cm steps)

preLink® - Characteristics and advantages

preLink® is a cabling strategy that provides flexibility, reliability and ease of use for Ethernet networks.
The termination system creates a detachable connection between the cable and connector.



har-port panel feed-throughs

	har-port RJ45 coupler ■ Shielded 360°		CAT. 6
	Silver		09 45 452 1560
	Black		09 45 452 1561
	White		09 45 452 1562
	har-port USB 2.0 A-A coupler		
	Silver		09 45 452 1901
	Black		09 45 452 1903
	White		09 45 452 1918
	har-port USB 3.0 A-A coupler		
	Silver		09 45 452 1902
	Black		09 45 452 1904
	White		09 45 452 1919
	har-port USB 3.0 A-A black		
	0.5 m		09 45 452 1970
	1.0 m		09 45 452 1971
	1.5 m		09 45 452 1972
	2.0 m		09 45 452 1973
	3.0 m		09 45 452 1974
	har-port USB 3.0 A-A silver		
	0.5 m		09 45 452 1930
	1.0 m		09 45 452 1931
	1.5 m		09 45 452 1932
	2.0 m		09 45 452 1933
	3.0 m		09 45 452 1934
	har-port HIFF ■ Compatible with inserts with HIFF format (RJ45 connectors, RJ45 coupler, USB coupler)		
	Silver		09 45 452 0000
	Black		09 45 452 0001
	White		09 45 452 0003
	Stainless steel		09 45 452 0002
	Protection cover IP65/IP67		
	Black rubber		09 45 502 0000
	transparent plastic		09 45 502 0005
	Plastic, black		09 45 502 0008
	Label holder		09 45 502 0002
	Label		09 45 502 0003
	Blind cover		09 45 502 0004
	Aluminum protection cover ■ IP65/IP67/IPx9k ■ Type: Screw connection		09 45 502 0006
	IP69K		

HIFF inserts (HARTING Industrial form factor)

	USB 2.0 type A coupler in HIFF format	09 45 545 1901
	USB 3.0 type A coupler in HIFF format	09 45 545 1902
	USB 2.0 type A coupler in HIFF format, pre-assembled	
	0.15 m	09 45 545 1927
	0.4 m	09 45 545 1928
	0.5 m	09 45 545 1920
	1.0 m	09 45 545 1921
	1.5 m	09 45 545 1922
	2.0 m	09 45 545 1923
	3.0 m	09 45 545 1924
	4.0 m	09 45 545 1926
	5.0 m	09 45 545 1925
	USB 3.0 type A coupler in HIFF format, pre-assembled	
	0.25 m	09 45 545 1936
	0.5 m	09 45 545 1930
	1.0 m	09 45 545 1931
	1.5 m	09 45 545 1932
	2.0 m	09 45 545 1933
	3.0 m	09 45 545 1934
	5.0 m	09 45 545 1935
 CAT. 6_A	RJ45 HIFF insert, pre-assembled with DualBoot® RJ45 system cable	
	0.15 m	09 45 545 1500
	0.2 m	09 45 545 1501
	0.3 m	09 45 545 1502
	0.4 m	09 45 545 1503
	0.5 m	09 45 545 1504
	1.0 m	09 45 545 1509
	RJ45 HIFF insert, pre-assembled with VarioBoot® RJ45 system cable	
		09 48 841 1745xxx

xxx = Length of cable

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Other lengths available on request (in 10 cm steps)

T1 Industrial - SPE connectors and system cables (Single Pair Ethernet)



	T1 Industrial connector	09 45 181 2810 XL
	- Single Pair Ethernet 2 crimp contacts - Shielded 360°	
	Crimp contacts AWG 28-26	09 45 500 2810
	Crimp contacts AWG 24-22	09 45 500 2812
	T1 Industrial PCB jack Flat mounting, soldered contact pins on PCB	09 45 281 2810
	Crimping tool	
	T1 Industrial hand crimping tool AWG 28-26	09 45 800 2810
	T1 Industrial hand crimping tool AWG 24-22	09 45 800 2811
	T1 SPE system cable	
	- SPE cable, PUR - S/FTP - Overmoulded T1 SPE IP20 cable assemblies 10/100 Mbit/s - 1/10 Gbit/s	
	2 x AWG 26/7	33 28 020 2001xxx
	2 x AWG 22/7	33 28 020 2002xxx

xxx = Length of cable

005 = 0.5 m	010 = 1.0 m	015 = 1.5 m	020 = 2.0 m	030 = 3.0 m	050 = 5.0 m	075 = 7.5 m	100 = 10 m	150 = 15 m	200 = 20 m
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Other lengths available on request (in 10 cm steps)

T1 M12 / T1 Industrial connector - Characteristics and advantages

Single Pair Ethernet (SPE) is a new TCP/IP transmission standard for one twisted pair. Transmission standards prepared by IEEE 802.3 have already been published.

IEEE 802.3cg	10BASE-T1 - 10 Mbit/s - 20 MHz	25.0 m non-shielded / 1000 m shielded
IEEE 802.3bw	100BASE-T1: 100 Mbit/s - 166 MHz	15.0 m non-shielded / 40.0 m shielded
IEEE 802.3bp	1000BASE-T1: 1 Gbit/s - 600 MHz	15.0 m non-shielded / 40.0 m shielded
IEEE 802.3ch	2.5/5/10 GBASE-T1 - 2.5/5/10 Gbit/s - 4 GHz	15.0 m shielded
IEEE 802.3bu	Power over Data Line (PoDL)	12 V / 24 V / 48 V / 5.0 ... 50.0 W

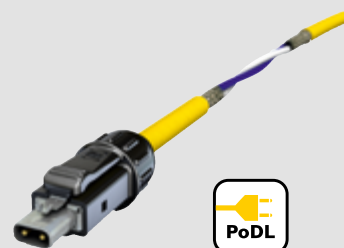
Capable of being used over distances up to 1 km, SPE has all the features to replace old field buses or analog networks as current loops 4...20 mA. It is also a good support for connecting actuators and sensors with Ethernet-based automation networks.

An SPE cable has many advantages:

- Thinner lighter cable
- Better performance to industrial requirements, especially in cyclic translation on a drag chain or in torsion (robotic).
- Less expensive cable (cheaper than Ethernet cable with 4 or 8 cores)
- Simpler cabling

As an IEC 63171-6 certified connector, the T1 Industrial is suitable for use in harsh industrial environments.

- Data rate: 10/100 Mbit/s, 1/10 Gbit/s
- Bandwidth: 4 GHz
- ≥ 1000 mating cycles
- Designed for industrial environments M₃I₃C₃E₃



T1 M12 Circular connectors



T1 Industrial coding (2 wires)	Cable side		T1 Industrial M12 slim design connectors 2 crimp contacts - Conductors AWG 28-22 10/100 Mbit/s - 1/10 Gbit/s	21 03 839 1205
			Crimp contacts AWG 28-26	09 45 500 2810
			Crimp contacts AWG 24-22	09 45 500 2812
	Connectors		T1 Industrial M12 connector, straight 12.5 mm - THR soldering - Shielded - Straight, soldered contact pins on PCB 10/100 Mbit/s - 1/10 Gbit/s	21 03 339 2202
			T1 Industrial M12 connector, straight 8 mm - THR soldering - Shielded - Straight, soldered contact pins on PCB 10/100 Mbit/s - 1/10 Gbit/s	21 03 339 2201
			T1 Industrial M12 connector, angled - THR soldering - Shielded - Flat mounting, soldered contact pins on PCB 10/100 Mbit/s - 1/10 Gbit/s	21 03 339 4201
			T1 Industrial M12 panel feed-through for rear mounting Screw locking	21 03 339 2000
	Device side		T1 Industrial M12 flange socket for front mounting Screw locking and PushPull	21 03 339 2001
	Tools		Crimping tool (AWG 28-26)	09 45 800 2810
			Crimp contacts AWG 28-26	09 45 500 2810
			Crimping tool (AWG 24-22)	09 45 800 2811
			Crimp contacts AWG 24-22	09 45 500 2812

M12 Circular connectors

D-coded - Cat. 5 (4 wires)	Cable side	 IP65 IP67	M12 slim design, D-coded, male	
			4 contacts (IDC) - Shielded 360°	
			Conductors AWG 26 Conductors AWG 22	21 03 382 1410 21 03 382 1400
		 IP65 IP67	M12 connector male D-coded	21 03 281 1405
			4 contacts (IDC) - Shielded 360° - Conductors AWG 26-22	
	Device side	 IP65 IP67	M12 PushPull connector male D-coded	
			4 contacts (IDC) - Shielded 360°	
			Conductors AWG 26 Conductors AWG 22	21 03 382 1411 21 03 382 1401
		 IP65 IP67	M12 connector male D-coded	20 82 005 0001
			- preLink® (AWG 27-22) - Shielded 360°	
	Device side	 IP65 IP67	M12 slim design D-coded, female	
			4 contacts (IDC) - Shielded 360°	
			Conductors AWG 26 Conductors AWG 22	21 03 382 2410 21 03 382 2400
		 IP65 IP67	M12 connector female, D-coded	21 03 281 2405
			4 contacts (IDC) - Shielded 360° - Conductors AWG 26-22	
	Device side	 IP65 IP67	M12 connector female D-coded	21 03 381 2425
			- PFT (panel feed-through) 4 contacts (IDC) - Shielded 360° - Conductors AWG 26-22	
	Device side	 IP65 IP67	M12 PushPull, D-coded	20 82 005 2001
			- PFT (panel feed-through) - preLink® (AWG 27-22) - Shielded 360°	

xxx = Length of cable

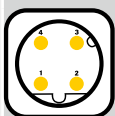
003 = 0.3 m	005 = 0.5 m	010 = 1.0 m	015 = 1.5 m
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Other lengths available on request (in 10 cm steps)

X-coded - Cat. 6A (8 wires)	Cable side	 IP65 IP67	M12 slim design, X-coded, male ■ 8 crimp contacts ■ Shielded 360°	21 03 881 1805
			Crimp contacts AWG 28-24	21 01 100 9014
			Crimp contacts AWG 26-23	21 01 100 9019
		 IP65 IP67	M12 slim design PushPull, X-coded, male ■ 8 crimp contacts ■ Shielded 360°	21 03 881 1830
			Crimp contacts AWG 28-24	21 01 100 9014
			Crimp contacts AWG 26-23	21 01 100 9019
	Device side	 IP65 IP67	M12 male, X-coded ■ preLink® (AWG 27-22) ■ Shielded 360°	20 82 005 0002
			 IP65 IP67	M12 slim design, X-coded, female ■ 8 crimp contacts ■ Shielded 360°
			Crimp contacts AWG 28-24	21 03 881 2805
			Crimp contacts AWG 26-23	21 01 100 9023
			Crimp contacts AWG 26-23	21 01 100 9021
		 IP65 IP67	M12 slim design PFT PushPull, X-coded, female ■ PFT (panel feed-through) ■ 8 crimp contacts ■ Shielded 360°	21 03 881 2825
			Crimp contacts AWG 28-24	21 01 100 9023
			Crimp contacts AWG 26-23	21 01 100 9021
		 IP65 IP67	M12 PushPull connector female X-coded ■ PFT (panel feed-through) ■ preLink® (AWG 27-22) ■ Shielded 360°	20 82 006 2001
			 IP65 IP67	M12 PushPull connector female X-coded pre-assembled ■ PFT (panel feed-through) ■ 8 crimp contacts on cable S/FTP PUR black ■ Shielded 360°
			Black cable 	21 33 080 0850xxx

M12 connector - Characteristics and advantages

With the M12 PushPull, screwing the connectors together is not necessary, this saves time in mating and un-mating and no torque wrench is needed.

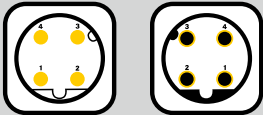


D-coded
Cat. 5 (10/100 Mbit/s - 100 MHz)



X-coded
Cat. 6_A (1/10 Gbit/s - 500 MHz)

M12 D-coded system cable



CAT. 5



21

34

XXX

XXXX

xxx

92

93

94

95

00

92

93

94

95

4

05

77

005

010

015

020

050

075

100

M12 connector male straight

M12 connector female straight

M12 connector male angled

M12 connector female angled

Open end

M12 connector male straight

M12 connector female straight

M12 connector male angled

M12 connector female angled

4 poles

PVC

PUR

0.5 m

1.0 m

1.5 m

2.0 m

5.0 m

7.5 m

10.0 m

Connector 1

Connector 2

No. of Contacts

Cable jacket

Length of cable

CAT. 6A



M12 Ethernet system cable, X-coded

Cable S/FTP yellow

Male Slim Press & Go

Jacket	Connector 1	Connector 2		
PVC	M12 X-coded male	Open end		21 33 050 0855xxx
PUR	M12 X-coded male	Open end		21 33 050 0850xxx
PVC	M12 X-coded male	M12 X-coded		21 33 050 5855xxx
PUR	M12 X-coded male	M12 X-coded		21 33 050 5850xxx

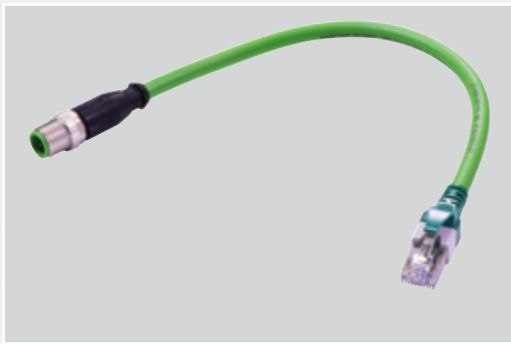
xxx = Length of cable

005 = 0.5 m	010 = 1.0 m	020 = 2.0 m	030 = 3.0 m	050 = 5.0 m	100 = 10 m
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Other lengths available on request (in 10 cm steps)

20

HARTING All for Ethernet



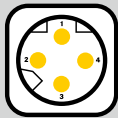
RJ45/ M12 Ethernet system cable D-coded ■ Cable 4 x AWG22 green ■ Overmoulded connectors			
Jacket	Connector 1	Connector 2	
PUR	DualBoot® RJ45	M12 connector male straight	
PUR	DualBoot® RJ45	M12 connector male angled	09 48 688 3018xxx

xxx = Length of cable

005 = 0.5 m	010 = 1.0 m	020 = 2.0 m	030 = 3.0 m	050 = 5.0 m	100 = 10 m
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Other lengths available on request (in 10 cm steps)

M8 D-coded system cable

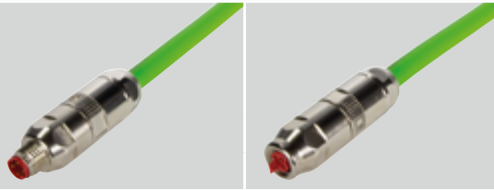


CAT. 5



2	1	3	4	X	X	X	X	X	X	X	X	X				
C	7											M8 connector male straight	Connector 1			
D	7											M8 connector female straight				
0	0	0	7											No connector	Connector 2	
C	7											M8 connector male straight				
D	7											M8 connector female straight				
		4											4 poles	No. of Contacts		
		0	5											PVC	Cable jacket	
		7	7											PUR		
		0	0	5											0.5 m	Length of cable
		0	1	0											1.0 m	
		0	1	5											1.5 m	
		0	2	0											2.0 m	
		0	5	0											5.0 m	
		0	7	5											7.5 m	
		1	0	0											10.0 m	

M8 Circular connectors

D-coded - Cat. 5 (4 wires)		M8 connector D-coded 4 contacts (IDC) - Shielded - Conductors AWG 22 IP65 IP67	
		Male	21 02 185 1405
		Female contact	21 02 185 2405
		M8 PushPull connector male D-coded 4 contacts (IDC) - Shielded - Conductors AWG 22 IP65 IP67	21 02 185 1430
P-coded - Cat. 5 (4 wires)		M8 connector P-coded 4 contacts (IDC) - Shielded - Conductors AWG 22 IP65 IP67	
		Male	21 02 145 1405
		Female contact	21 02 145 2405
		M8 PushPull connector male P-coded 4 contacts (IDC) - Shielded - Conductors AWG 22 IP65 IP67	21 02 145 1430

M8 connector - Characteristics and advantages

The M8 connector is 30% more compact than the M12, which is significant for small sensors or actuators. Like the M12, the M8 PushPull version does not need to be connected using the screw thread saving time.



D-coded
Cat. 5 (10/100 Mbit/s - 100 MHz)



P-coded
Cat. 5 (10/100 Mbit/s - 100 MHz)

PushPull (V4) RJ45 Ethernet system cable

CAT. 6A 	Overmoulded PushPull RJ45 Ethernet system cable Cable S/FTP				
	Jacket	Connector 1	Connector 2		
	PUR	PushPull RJ45	PushPull RJ45		09 48 282 8756xxx
	PVC	PushPull RJ45	PushPull RJ45		09 48 282 8757xxx
	PUR	PushPull RJ45	DualBoot® RJ45		09 48 284 7744xxx
	PUR	PushPull RJ45	DualBoot® RJ45		09 48 284 7756xxx
	PVC	PushPull RJ45	DualBoot® RJ45		09 48 284 7757xxx
	PVC Outdoor	PushPull RJ45	PushPull RJ45		09 48 282 2758xxx
	PVC Outdoor	PushPull RJ45	DualBoot® RJ45		09 48 284 7758xxx

xxx = Length of cable

005 = 0.5 m	010 = 1.0 m	015 = 1.5 m	020 = 2.0 m	030 = 3.0 m	050 = 5.0 m	075 = 7.5 m	100 = 10 m	150 = 15 m	200 = 20 m
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Other lengths available on request (in 10 cm steps)

PushPull (V4) connectors

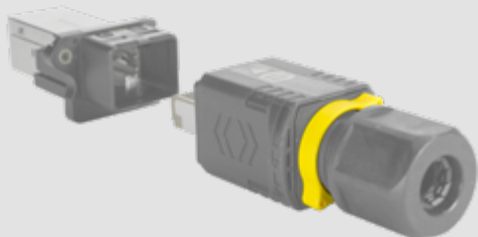
Cable side		PushPull (V4) RJ45 connector 4 IDC contacts, can be assembled in the field without tools - Shielded - Conductors AWG 24-22 - Transmission rate: 10/100 Mbit/s	CAT. 5 IP65 IP67	09 45 145 1106
		PushPull (V4) RJ45 connector 8 IDC contacts, can be assembled in the field without tools - Shielded - Conductors AWG 27-22 - Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s	CAT. 6 IP65 IP67	09 45 145 1561
		PushPull RJ45 coupler - Shielded - Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s	CAT. 6 IP65 IP67	09 45 345 1560
Device side		PushPull RJ45 panel feed through - Surface mounting - Shielded - Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s	CAT. 6 IP65 IP67	09 45 245 1561
		PushPull HIFF housing Compatible with inserts with HIFF format (RJ45 connectors, RJ45 coupler, USB coupler)	IP65 IP67	09 45 545 0041
Accessories		2 port outlet with covers 2 PushPull RJ45 ports - IDC contacts, can be assembled in the field without tools - Conductors AWG 24-22 - Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s	IP65 IP67	09 45 845 1562
		2 port outlet, empty 2 PushPull RJ45 ports - Mounting of 2 RJ45 inserts with HIFF format for cabling	CAT. 6_A IP65 IP67	09 45 845 1560

PushPull connector - Characteristics and advantages

The PushPull connector has all the advantages for intensive use:

- Speedy connection and disconnection
- Easy to use with audible click on connection
- Minimal force for insertion and removal (PushPull)

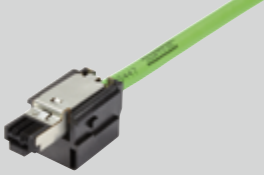
- Once connected, a locking ring can prevent accidental disconnections.



- Visual marking for easy connection



HARTING RJ Industrial® Han® 3 A RJ45

Cable side		CAT. 5	Han® 3 A RJ45 insert ■ 4 IDC contacts, can be assembled in the field without tools ■ Shielded ■ Transmission rate 10 / 100 Mbit/s	
			Conductors AWG 26	09 45 100 1110
			Conductors AWG 24-22	09 45 100 1100
		CAT. 6	Han® 3 A RJ45 insert ■ 8 IDC contacts, can be assembled in the field without tools ■ Shielded ■ Conductors AWG 27-22 ■ Transmission rate 10/100 Mbit/s and 1/10 Gbit/s	09 45 100 1560
		CAT. 6_A	Han® 3 A RJ45 preLink® insert ■ preLink® (AWG 27-22) ■ Shielded ■ Transmission rate 10/100 Mbit/s and 1/10 Gbit/s	20 82 002 0001
		IP65 IP67	Han® 3 A Housing ■ With glued seal ■ M20 output	
			Metal, grey	19 20 003 1443
Device side			Metal, black	19 37 003 1443
			Plastic, grey	19 20 003 0423
			Plastic, black	19 20 003 0426
			EMC	19 62 003 1443
			Stainless steel	19 44 003 1443
		CAT. 6	Han® 3 A RJ45 female insert ■ Shielded ■ Transmission rate 10/100 Mbit/s and 1/10 Gbit/s	09 45 200 1560
			Han® 3 A HIFF adapter ■ Compatible with inserts with HIFF format (RJ45 connectors, RJ45 coupler, USB coupler)	09 45 515 0024
		IP65 IP67	Han® 3 A bulkhead housing	
			Metal, grey	09 20 003 0301
			Metal, black	09 37 003 0301
			Plastic, grey	09 20 003 0320
			Plastic, black	09 20 003 0327
			EMC	09 62 003 0301
			Stainless steel	19 44 003 0301
		IP65 IP67	Han® 3 A bulkhead housing ■ With self-closing cover	
			Metal, grey	09 20 003 0306
			Metal, black	09 37 003 0306
			EMC	09 62 003 0306

Cable to cable junction			Han® 3 A cable to cable housing ■ M20 output	
			Metal, grey	19 20 003 1750
			Metal, black	19 37 003 1750
			Plastic, grey	19 20 003 0720
			Plastic, black	19 20 003 0727
			EMC	19 62 003 1750
			Han® 3 A RJ45 coupler ■ 8 poles	
			Metal, grey	09 45 215 1107
			Metal, black	09 45 215 1110
			Plastic, black	09 45 225 1107
USB	Cable side		Han-Brid® USB insert ■ Compatible with USB cables	
	Equipment		Han-Brid® USB insert USB extender	
			USB 3.0	09 12 001 2793
			USB 2.0	09 12 001 2794
Han® 3 A RJ45 kit	Cable side		Han® 3 A RJ45 connector ■ 8 IDC contacts, can be assembled in the field without tools ■ AWG 27-22 ■ Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s	
			Plastic version, black	09 45 125 1560
			Metal version, grey	09 45 115 1560
	Equipment		Han® 3 A RJ45 Panel feed through ■ RJ45 coupler ■ Transmission rate: 10/100 Mbit/s and 1/10 Gbit/s	
			Plastic version, black	09 45 225 1560
			Metal version, grey	09 45 215 1560
			Metal version, grey, with self-closing cover	09 45 215 1562

Han® 3 A Connector - Characteristics and advantages

For strength and versatility, the Han® industrial connector is used and recognized in the fields of machinery, robotics, transport and energy. You will find a version to suit whatever your needs for use in harsh industrial environments.

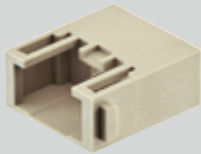
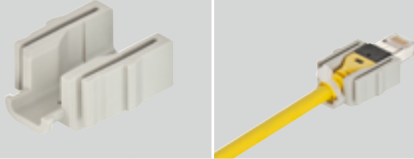
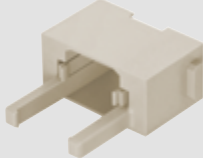
Han® 3 A is a compact version available in several versions:

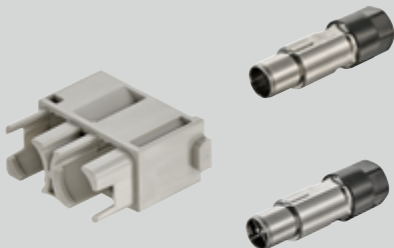
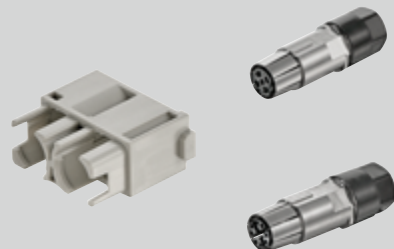
- Standard (zinc with epoxy finish)
- Gray or black plastic (polycarbonate)
- Han® EMC for environments subject to electromagnetic disturbances
- Han-INOX® for increased resistance to saline environments
- Han® HPR for harsh external environments (IP69k)
- Han® Ex for zones exposed to explosion hazard

More than 100 inserts in the Han® 3 A size are available for connecting power, signals and data (copper, coaxial, fibre optic).



Han-Modular®

Han® RJ45 module			Han® RJ45 male module ■ Mounting of RJ45 male inserts	09 14 001 4623
		CAT. 5	RJ45 insert - 4 IDC contacts	
			Conductors AWG 26	09 45 400 1109
		CAT. 6 _A	RJ45 insert - 8 IDC contacts	
			Conductors AWG 27-22	09 45 400 1560
		RJ45 insert ■ Compatible with DualBoot® RJ45 system cables	09 14 000 9966	
Han® RJ45 female module			Han® RJ45 female module ■ Compatible with separate RJ45 inserts from the Han-Modular series	09 14 001 4722
			Han® RJ45 coupler module ■ Shielded	09 14 001 4721
			Han® Gigabit male module ■ Mounting insert of the Han® Gigabit male module	09 14 001 3011
Han® Gigabit module		CAT. 8.2	Han® Gigabit male insert ■ 8 crimp contacts ■ Shielded	09 14 008 3034
			Crimp contacts, male ■ AWG 26-22	09 67 000 5576
		CAT. 8.2	Han® Gigabit female module ■ Mounting insert of the Han® Gigabit female module	09 14 001 3111
			Han® Gigabit female insert ■ 8 crimp contacts ■ Shielded	09 14 008 3134
			Crimp contact, female ■ AWG 26-22	09 67 000 5476
			Cable clamp	
			Ø 5 - 7 mm	61 03 000 0141
		Ø 7 - 10 mm	61 03 000 0044	
		Ø 9 - 12 mm	61 03 000 0143	

Han® M12 module		
	Han® M12 male module ■ Mounting of 2 Han® M12 male inserts	09 14 002 3061
	Han® M12 D-coded male insert ■ 4 crimp contacts AWG 26-18	09 14 881 1405
	Crimp contacts, male M12 D-coded AWG 18-22	09 67 000 3576
	Crimp contacts, male M12 D-coded AWG 24-20	09 67 000 8576
	Crimp contacts, male M12 D-coded AWG 26-22	09 67 000 5576
	Han® M12 X-coded male insert ■ 8 crimp contacts AWG 28-23	09 14 881 1805
	har-speed crimp contact AWG 28-24	21 01 100 9014
	har-speed crimp contact AWG 26-23	21 01 100 9019
	Han® M12 female module ■ Mounting of 2 Han® M12 female inserts	09 14 002 3161
	Han® M12 D-coded female insert ■ 4 crimp contacts AWG 26-18	09 14 881 2405
	Crimp contacts, female M12 D-coded AWG 18-22	09 67 000 3476
	Crimp contacts, female M12 D-coded AWG 24-20	09 67 000 8476
	Crimp contacts, female M12 D-coded AWG 26-22	09 67 000 5476
	Han® M12 X-coded female insert ■ 8 crimp contacts AWG 28-23	09 14 881 2805
	har-speed crimp contact AWG 28-24	21 01 100 9023
	har-speed crimp contact AWG 26-23	21 01 100 9021

Han-Modular® - Characteristics and advantages

Han-Modular® is the market standard for modular industrial connectors. More than 100 modules make up the range, which is the most versatile and complete on the market.

- Many combinations of different connections in one connector
- Power, signals and data in a single connector
- By connector size, from 1 to 12 slots

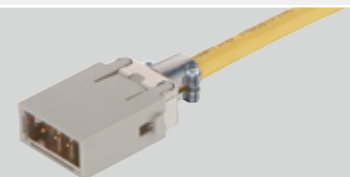
The various available housing materials and coatings ensure that the Han-Modular® is suitable for all types of industrial environments.

- Standard (moulded aluminum with epoxy treatment)
- Han-Eco® (glass-fibre reinforced polyamide)
- Han® EMC for environments subject to electromagnetic disturbances
- Han-INOX® for increased resistance to saline environments
- Han® HPR for harsh external environments (IP69k)
- Han® Ex for zones exposed to explosion hazard



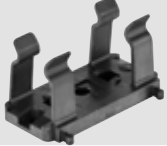
Han® Gigabit - Characteristics and advantages

HARTING's Han-Modular® portfolio offers a suitable variant of the Gigabit module for all application types. This module features transmission rates of Cat. 6 and Cat. 8.2, with the option to use the module for up to 10,000 mating cycles.



Han® 1A

				Han® 1A, M12 D-coded inserts		CAT. 5		IP65		+90 -30				
				■ With snap-in latches						Male insert		09 10 004 3001		
				■ 4 crimp contacts AWG 26-18								Female insert	09 10 004 3101	
				■ Shielded 360°										
				Han® 1A, M12 D-coded inserts		CAT. 5		IP65		+90 -30				
				■ With locking lever								Male insert		09 10 004 3006
				■ 4 crimp contacts AWG 26-18								Female insert		09 10 004 3106
				■ Shielded 360°										
Crimp contacts, male M12 D-coded														
														
AWG 18-2209 67 000 3576														
AWG 24-2009 67 000 8576														
AWG 26-2209 67 000 5576														
AWG 28-2409 67 000 7576														
Crimp contacts, female M12 D-coded														
														
AWG 18-2209 67 000 3476														
AWG 24-2009 67 000 8476														
AWG 26-2209 67 000 5476														
AWG 28-2409 67 000 7476														
				Han® 1A, M12 X-coded inserts		CAT. 6_A		IP65		+90 -30				
				■ With snap-in latches								Male insert		09 10 008 3001
				■ 8 crimp contacts AWG 28-23								Female insert		09 10 008 3101
				■ Shielded 360°										
				Han® 1A, M12 X-coded inserts		CAT. 6_A		IP65		+90 -30				
				■ With locking lever								Male insert		09 10 008 3006
				■ 8 crimp contacts AWG 28-23								Female insert		09 10 008 3106
				■ Shielded 360°										
Crimp contacts, male M12 X-coded														
														
har-speed male, crimp contact AWG 26-2321 01 100 9019														
har-speed female, crimp contact AWG 28-2421 01 100 9023														
har-speed female, crimp contact AWG 26-2321 01 100 9021														

 	Bulkhead mounting ■ Includes seal (IP65)		
		Straight	09 10 000 0300
		angled	09 10 000 0800
 	Cable junction		
		Tor strain relief with cable tie (IP20)	09 10 000 5300
		For strain relief with integrated cable gland and seal (IP65)	09 10 000 0400
	Han® 1A stainless steel locking lever	09 10 000 5200	
	Mounting frame ■ Wall mounting	09 10 000 9908	
	Mounting frame ■ Mounting on DIN rail	09 10 000 9912	

Han® 1A - Characteristics and advantages

Han® 1A: Compact, robust and versatile

Smallest Han® connector:

- Up to 30% smaller than the Han® 3 A

Versatile use:

- Transmission of data, signals and power

Very flexible:

- Modular system for IP20 and IP65 applications

Faster installation:

- Fast connection using snap-in technology

Minimal stockpiling:

- Clearly structured connector system based on only a few basic elements

Reduced costs:

- Affordable installation connector



Ethernet switches

	eCon 2000 Ethernet switches - Flat type - Fast Ethernet 3 – 16 ports	+55 0 +70 -40 <table><tr><td>5 RJ45 ports</td><td>24 02 005 0010</td></tr><tr><td>8 RJ45 ports</td><td>24 02 008 0010</td></tr><tr><td>16 RJ45 ports</td><td>24 02 016 0010</td></tr><tr><td>5 RJ45 ports</td><td>24 02 005 0000</td></tr><tr><td>8 RJ45 ports</td><td>24 02 008 0000</td></tr><tr><td>16 RJ45 ports</td><td>24 02 016 0000</td></tr></table>	5 RJ45 ports	24 02 005 0010	8 RJ45 ports	24 02 008 0010	16 RJ45 ports	24 02 016 0010	5 RJ45 ports	24 02 005 0000	8 RJ45 ports	24 02 008 0000	16 RJ45 ports	24 02 016 0000
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	eCon 2000 Ethernet switches - Flat type 5 – 16 ports Full Gigabit +55 0 +70 -40 <table><tr><td>5 RJ45 ports</td><td>24 02 405 0030</td></tr><tr><td>7 RJ45 ports</td><td>24 02 407 0030</td></tr><tr><td>16 RJ45 ports</td><td>24 02 416 0010</td></tr><tr><td>5 RJ45 ports</td><td>24 02 405 0020</td></tr><tr><td>7 RJ45 ports</td><td>24 02 407 0020</td></tr><tr><td>16 RJ45 ports</td><td>24 02 416 0000</td></tr></table>	5 RJ45 ports	24 02 405 0030	7 RJ45 ports	24 02 407 0030	16 RJ45 ports	24 02 416 0010	5 RJ45 ports	24 02 405 0020	7 RJ45 ports	24 02 407 0020	16 RJ45 ports	24 02 416 0000	
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	eCon 2000 Advanced ix Industrial® Ethernet switches - Flat type - More compact and robust than RJ45 Ethernet switches because of ix Industrial® Full Gigabit +70 -40 <table><tr><td>5 ix ports</td><td>24 14 405 0000</td></tr><tr><td>8 ix ports</td><td>24 14 408 0000</td></tr></table>	5 ix ports	24 14 405 0000	8 ix ports	24 14 408 0000									
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8 ix ports	24 14 408 0000													
	eCon 3000 Ethernet switches - Thin type - Fast Ethernet 6 – 16 ports +55 0 +70 -40 <table><tr><td>6 RJ45 ports</td><td>24 03 006 0010</td></tr><tr><td>8 RJ45 ports</td><td>24 03 008 0010</td></tr><tr><td>16 RJ45 ports</td><td>24 03 016 0010</td></tr><tr><td>6 RJ45 ports</td><td>24 03 006 0000</td></tr><tr><td>8 RJ45 ports</td><td>24 03 008 0000</td></tr><tr><td>16 RJ45 ports</td><td>24 03 016 0000</td></tr></table>	6 RJ45 ports	24 03 006 0010	8 RJ45 ports	24 03 008 0010	16 RJ45 ports	24 03 016 0010	6 RJ45 ports	24 03 006 0000	8 RJ45 ports	24 03 008 0000	16 RJ45 ports	24 03 016 0000	
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16 RJ45 ports	24 03 416 0000													

eCon Ethernet switches - Characteristics and advantages

Plug & Play, HARTING Ethernet switches will facilitate the installation and extension of your Ethernet networks.

- Non-managed switches
- Compatible with IEEE 802.3 Ethernet architectures
- Wide voltage supply range: 9/18 - 60 V DC
- Strong and light with aluminum box
- Limited installation space required due to flat or narrow size
- Minimal consumption
- Available with/without PoE+
- Available with fibre optic connections (SC duplex or LC)
- ECE-R10 (E1) approved for use in vehicles



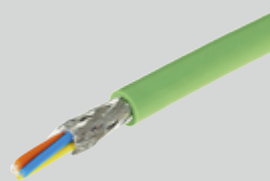
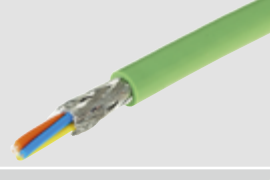
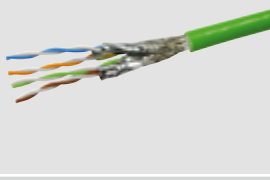
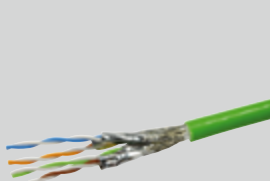
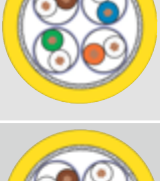
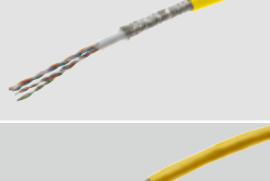
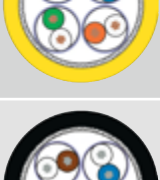
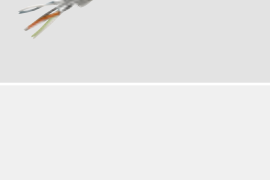
Industry 4.0 and efficient connected devices mean increasingly high data flows. This is why Ethernet switches have to simultaneously transfer images and high data flows without altering network performance.

New generation HARTING Ethernet switches easily manage all Full Gigabit Ethernet ports, even when the devices are very data consuming cameras.



24 13 416 0000

Industrial Ethernet cables

		Cable, Profinet type A - PVC - Star quad - 4 x AWG 22/1	   	20 m		09 45 600 0130
				50 m		09 45 600 0140
				100 m		09 45 600 0100
				500 m		09 45 600 0110
		Cable, Profinet type B - PVC - Star quad - 4 x AWG 22/7	   	20 m		09 45 600 0132
				50 m		09 45 600 0142
				100 m		09 45 600 0102
				500 m		09 45 600 0112
		Cable, Profinet type C - PUR - Star quad - 4 x AWG 22/7 ■ 3,000,000 cycles of bending in translation Ø of bending 200 mm speed 4 m/s - acceleration 4 m/s ² ■ 30,000 cycles of torsion to +/- 180° on 1.0 m	   	20 m		09 45 600 0131
				50 m		09 45 600 0141
				100 m		09 45 600 0101
				500 m		09 45 600 0111
		Cable, Profinet type A - PVC - S/FTP - 4 x 2 x AWG 23/1	  	20 m		09 45 600 1200
				50 m		09 45 600 1210
				100 m		09 45 600 1220
				500 m		09 45 600 1230
		Cable, Profinet type B - PVC - S/FTP - 4 x 2 x AWG 24/7	   	20 m		09 45 600 1211
				50 m		09 45 600 1221
				100 m		09 45 600 1231
				500 m		09 45 600 1241
		Cable, Profinet type B - PVC - S/FTP - 4 x 2 x AWG 24/7	   	20 m		09 45 600 0236
				50 m		09 45 600 0246
				100 m		09 45 600 0206
				500 m		09 45 600 0256
		Cable, PUR - drag chain - SF/UTP - 4 x 2 x AWG 26/19	    	20 m		09 45 600 0236
				50 m		09 45 600 0246
				100 m		09 45 600 0206
				500 m		09 45 600 0256
		Cable, PVC - S/FTP - 4 x 2 x AWG 26/7	   	20 m		09 45 600 0532
				50 m		09 45 600 0542
				100 m		09 45 600 0502
				500 m		09 45 600 0522
		Cable, PVC Outdoor - S/FTP - 4 x 2 x AWG 26/7	   	20 m		09 45 600 0531
				50 m		09 45 600 0541
				100 m		09 45 600 0501
				500 m		09 45 600 0521

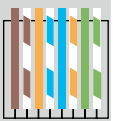
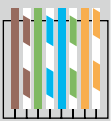
		Cable, PUR - S/FTP - 4 x 2 x AWG 26/7	 CAT. 5	 	20 m 09 45 600 0630
			 CAT. 7		50 m 09 45 600 0640
					100 m 09 45 600 0600
					500 m 09 45 600 0620
					100 m 09 45 600 0711
					500 m 09 45 600 0721
					1000 m 09 45 600 0751
		Cable, EtherRail® - Star quad - 4 x AWG 22/7	 CAT. 6A	 	10 m 09 45 600 0168
					50 m 09 45 600 0178
					100 m 09 45 600 0108
					500 m 09 45 600 0118
					1000 m 09 45 600 0128
					10 m 09 45 600 1400
					50 m 09 45 600 1410
			 CAT. 7	 	100 m 09 45 600 1420
					500 m 09 45 600 1430
					1000 m 09 45 600 1440
		Cable, EtherRail® - Star quad - 4 x AWG 22/19 Ultra flexible	 CAT. 7	 	10 m 09 45 600 0188
					50 m 09 45 600 0189
					100 m 09 45 600 0138
					500 m 09 45 600 0148
					1000 m 09 45 600 0158
		Cable, EtherRail® - S/FTP 4 x 2 x AWG 24/7	 CAT. 7	 	10 m 09 45 600 0694
					50 m 09 45 600 0693
					100 m 09 45 600 0692
					500 m 09 45 600 0691
					1000 m 09 45 600 0690
			4 x 2 x AWG 26/7	 CAT. 7	10 m 09 45 600 0704
				 	50 m 09 45 600 0703
					100 m 09 45 600 0702
					500 m 09 45 600 0701
					1000 m 09 45 600 0700
		Cable, SPE (Single Pair Ethernet) - PUR - SF/TP 1 x 2 x AWG 26/7			10 m 09 45 600 2004
					50 m 09 45 600 2003
					100 m 09 45 600 2002
					500 m 09 45 600 2001
			1 x 2 x AWG 22/7		10 m 09 45 600 2014
					50 m 09 45 600 2013
					100 m 09 45 600 2012
					500 m 09 45 600 2011

Ethernet cables - Characteristics and advantages

- HARTING Ethernet cables are designed for use in industrial environments.
- High quality PVC, PUR or EtherRail® jackets
 - Shielding braid covering at least 80% for excellent performance in environments exposed to electromagnetic pollution.
 - High mechanical resistance to bending or torsion according to cable
 - UN/ECE-R 118 (Automobile Directive) certification according to cable
 - EtherRail® cable approved according to EN 45545-2, railway standard for fire protection



Contact allocation

										
	RJ45	M12 X-coded	Ethernet standard 8 wires	ETA / ITA T568A	EIA/TIA T568 B	IP Ethernet 2 pairs	Profinet	Ethernet standard 4 wires	M12/M8 D-coded	RJ45
1	1	1	BI_DA+	White/Green	White/Orange	White/Orange	Yellow	TX+	1	1
2	2	2	BI_DA-	Green	Orange	Orange	Orange	TX-	3	2
6	3	3	BI_DB+	White/Orange	White/Green	White/Green	White	RX+	2	3
4	4	8	BI_DC+	Blue	Blue					
5	5	7	BI_DC-	White/Blue	White/Blue					
7	6	4	BI_DB-	Orange	Green	Green	Blue	RX-	4	6
9	7	5	BI_DD+	White/Brown	White/Brown					
10	8	6	BI_DD-	Brown	Brown					
3,8 GND										

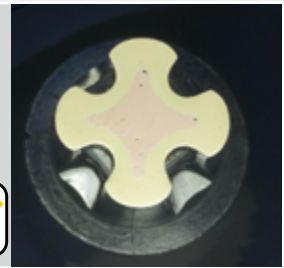
Ethernet transmission categories sorted by connectors

						HARTING connectors	
						Han® Gigabit	
						Han® Megabit	
						Han-Quintax®	
						HARTING ix Industrial®	
						M12 X-coded	
						M12 D-coded	
						RJ45	
Categories	Characteristics	Band-width	Ethernet	Transmission rate	Number of wires		
Cat. 5 Class D	100 BASE-TX	100 MHz	Fast Ethernet	10/100 Mbits/s	4		
Cat. 5e Class D	100 BASE-TX/1000 BASE-T	100 MHz	Ethernet Gigabit	10/100/1000 Mbits/s	8		
Cat. 6 Class E	1G BASE-T, 2.5/5G BASE-T	250 MHz	Ethernet Gigabit	10/100 Mbits/s - 1/10 Gbits/s	8		
Cat. 6 _A Class E _A	10G BASE-T	500 MHz	Ethernet 10 GB	10/100 Mbits/s - 1/10 Gbits/s	8		
Cat. 7 Class F	10G BASE-T	600 MHz	Ethernet 10 GB	10/100 Mbits/s - 1/10 Gbits/s	8		
Cat. 7 _A Class 7 _A	10G BASE-T	1000 MHz	Ethernet 10 GB	10/100 Mbits/s - 1/10 Gbits/s	8		

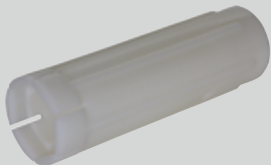
Crimping tool - Characteristics and advantages

Crimp contacts are recommended in certain cases, especially in extreme use conditions with high mechanical stresses (large and cyclical vibrations and shocks).
The HARTING crimping tool, dedicated and calibrated for HARTING contacts, ensures excellent crimping quality for you.

- Repeatability of quality and crimping operations
- Constant contact resistance
- Corrosion-free connection resulting from cold welding
- The Go/No-Go gauge lets you check tool calibration.



Tools

Stripping tools		RJ Industrial® cable stripping tool ■ For Ethernet cables ■ Blade cassette included	09 45 800 0000
		Blade cassette	09 45 800 0001
		RJ Industrial® stripping tool ■ For Ethernet cables	09 45 800 0002
Cutting tools		RJ Industrial® wire cutters	09 45 800 0005
Crimping tools		Crimping tool ■ Crimping to MIL 22 520/2-01	09 99 000 0501
		Locator for contacts ■ AWG 26-22 - Han® Gigabit	09 99 000 0897
		Locator for <i>har</i> -speed male contacts ■ AWG 28-23 - M12 X-coded	09 99 000 0525
		Locator for <i>har</i> -speed female contacts ■ AWG 28-23 - M12 X-coded	09 99 000 0635
		Locator for Sub-D contacts ■ AWG 28-18 - M12 D-coded	09 99 000 0531
		Go/No-Go check gauge	09 99 000 0617
Mounting		<i>har</i> -port mounting tool ■ Defined tightening torque of fixing nut	09 45 502 0007



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Since 1945

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local website.
