



Pushing Performance



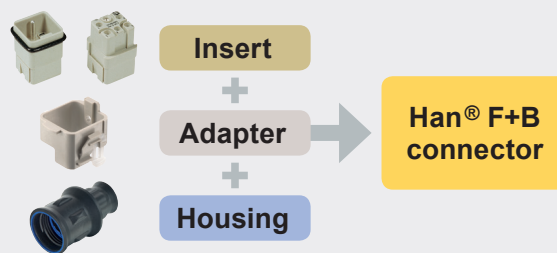
People | Power | Partnership

HARTING Selection Guide

Han[®] F+B – A clean connection

Han® F+B Connector System

- Reduces costs because connectors shorten assembly times
- Supports flexible configuration of machines as well as modularisation
- Reduces downtimes thanks to “Plug & Produce” principle



Ecolab-certified



Hood and housing materials comply with FDA 21



Data, signal and power



Easy-to-clean design, caps of hood and bulkhead mounted housing can be screwed together, e.g. for cleaning



Highest protection class

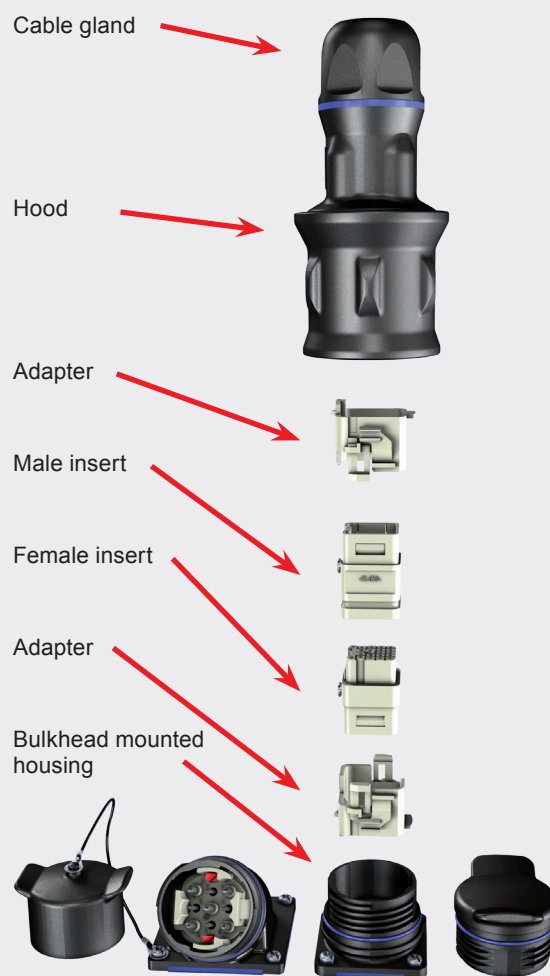


Resistant to cold and heat

Technical characteristics

Material hood	PP
Material seal	TPE
Material housing	PP
Material gasket	EPDM
Material o-ring	silicone
Material cable gland	PA / silicone
Limiting temperature	-40°C ... 125°C
Mating cycles	≥ 500
Mating cycles with adapter 09 15 503 9911	≥ 250
Degree of Protection acc. to DIN EN 60529 for coupled connector	IP67 / IP69
Specifications and approvals	
Materials according to FDA 21	
Resistance, Ecolab-certified:	P3-topax 19 P3-topax 52 P3-topax 56 P3-topax 66 P3-topax 99 P3-topax 200

System description



Benefits

- Helps reducing downtimes in food beverage industry
- Connectors are many times faster in plugging compared to hard wired solutions
- One type of hood or housing for all types of transmission in the industrial lifelines of data, signals and power
- Enables the modularisation of machines and plants as well as the introduction of future-proof concepts
- Reduces expenses on installation and maintenance of equipment as well as the resulting downtimes

Features

Easy-to-clean design based on standards ISO 14 159 und DIN EN 1672-2

Applications:

- Machines for food industry
- Bottling plants
- Packaging machines

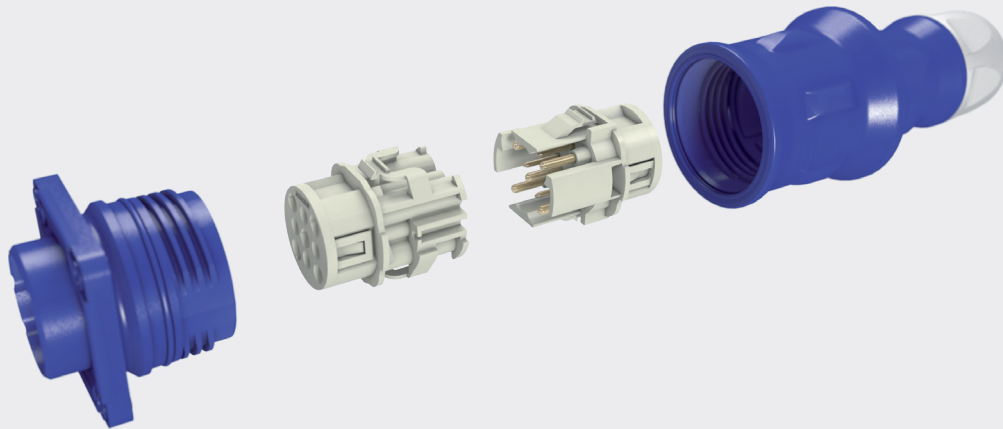
Suitable for food processing zones:

- Interfaces inside the splash zone
- Resistant to chemical cleaning agents even at high cleaning density



Notice:
Adapter required for Han® 3 A insert

Overview







	Hood	Cover hood	Cable gland	
Part number (black)	19 15 503 1403	09 15 503 5411	19 15 523 5196	19 15 503 5196
			Clamping range 11 - 13	Clamping range 11 - 13
			19 15 523 5197	19 15 503 5197
			Clamping range 13 - 16	Clamping range 13 - 16
Part number (blue)	19 15 513 1403	09 15 513 5411	19 15 523 5199	19 15 503 5199
Notice:		Cover can be screwed into cover hood for bulkhead mounted housing	Clamping range 16 - 18	Clamping range 16 - 18
			09 99 000 0984 Assembling aid cable gland F+B	


	Bulkhead mounted housing, straight	Bulkhead mounted housing, angled	Cable-to-cable hood	Cover hood for bulkhead mounted housing
Part number (black)	09 15 503 0301	09 15 503 0901	19 15 503 1701	09 15 503 5401
Part number (blue)	09 15 513 0301	09 15 513 0901	19 15 513 1701	09 15 513 5401


Adapter	Han® 3 A adapter	
	Part number	09 15 503 9911
Notice	required for Han® 3 A male and female inserts	


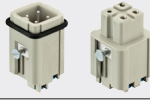

Power and signal modules – 2-7 contacts (+ PE)





Device side	Setup of power and signal interface requires housings, adapter and insert		+		+		+	
	Configuration example	Housing Han® F+B bulkhead mounted housing, straight 09 15 503 0301		Adapter required for Han® 3 A insert 09 15 503 9911		Insert Han® Q 12 09 12 012 3101		Contacts Han® D 09 15 000 6201

40 A		Han® Q 2/0	Han® Q 2/0
			
Contacts		2 + PE	2 + PE
Electrical data		40 A / 400 V	40 A / 400 V
Termination		Axial screw	Crimp
Cross section [mm² / AWG]		2.5 ... 6 mm² / AWG 14-10	1.5 ... 10 mm² / AWG 16-8
Male		09 12 002 2653	09 12 002 3051
Female		09 12 002 2753	09 12 002 3151
Cross section [mm² / AWG]		4 ... 10 mm² / AWG 12-8	
Male		09 12 002 2651	
Female		09 12 002 2751	
Notice		Insert incl. contacts	Han® C contacts to be ordered separately

16 A		Han® Q 5/0 Crimp	Han® Q 5/0 Quick Lock
			
Contacts		5 + PE	5 + PE
Electrical data		16 A / 230 / 400 V	16 A / 230 / 400 V
Termination		Crimp	Quick Lock
Cross section [mm² / AWG]		0.14/0.5 ... 2.5 mm² / AWG 26/20-14	0.14/0.5 ... 2.5 mm² / AWG 26/20-14
Male		09 12 005 3004	09 12 005 2633
Female		09 12 005 3104	09 12 005 2733
Notice		Insert incl. contacts, crimp Han® E contacts to be ordered separately	Insert incl. contacts, crimp Han® E contacts to be ordered separately

10 A		Han® 3 A	Han® 3 A Quick Lock	Han® 4 A	Han® 4 A Quick Lock
					
Contacts		3 + PE	3 + PE	4 + PE	4 + PE
Electrical data		10 A / 230 / 400 V	10 A / 230 / 400 V	10 A / 230 / 400 V	10 A / 230 / 400V
Termination		Screw terminal	Quick Lock	Screw terminal	Quick Lock
Cross section [mm² / AWG]		1.0 ... 2.5 mm² / AWG 18-14	0.5 ... 2.5 mm² / AWG 20-14	1.0 ... 2.5 mm² / AWG 18-14	0.5 ... 2.5 mm² / AWG 20-14
Male		09 20 003 2611	09 20 003 2633	09 20 004 2611	09 20 004 2633
Female		09 20 003 2711	09 20 003 2733	09 20 004 2711	09 20 004 2733
Notice		Insert incl. contacts	Insert incl. contacts	Insert incl. contacts	Insert incl. contacts

10 A		Han® 7 D	Han® 7 D Quick Lock	Han® Q 7/0
				
Contacts		7 + PE	7 + PE	7 + PE
Electrical data		10 A / 250 V	10 A / 250 V	10 A / 400 V
Termination		Crimp	Quick Lock	Crimp
Cross section [mm² / AWG]		0.14 ... 2.5 mm² / AWG 26-14	0.14 ... 2.5 mm² / AWG 26-14	0.14 ... 2.5 mm² / AWG 26-14
Male		09 21 007 3031	09 21 007 2632	09 12 007 3001
Female		09 21 007 3131	09 21 007 2732	09 12 007 3101
Notice		Han® D contacts to be ordered separately	Han® D contacts to be ordered separately	Han® D contacts to be ordered separately

Power and signal modules – 8-21 contacts (+ PE)



Cable side	
	<p>Configuration example</p> <p style="text-align: center;"> Hood and cable gland 19 15 503 1403 Adapter 09 15 503 9911 Insert 09 12 012 3001 Contacts 09 15 000 6101 </p>

	Hybrid system cable		Cable side	Device side
20 A	<p>Contacts Electrical data</p> <p>4 / 4 + PE 20 A + PE / 10 A</p>	<p>Contacts Electrical data</p> <p>4 / 4 + PE + Ethernet 20 A + PE / 10 A</p>	<p>20 A + PE 10 A / Cat. 5e</p>	<p>20 A + PE 10 A / Cat. 5e</p>
	Crimp	Crimp		
	Cross section [mm ² / AWG]	0.14 ... 2.5 mm ² / AWG 26-14	0.16 ... 1.5 mm ² / AWG 26-16	
	Male	09 15 508 3001	09 15 512 3002	33 50 300 0140 050
	Female	09 15 508 3101	09 15 512 3102	
	Female	09 15 508 3101	09 15 512 3102	33 50 319 9141 003
	Notice	No adapter necessary, Han® D and E contacts to be ordered separately	No adapter necessary, Han® D, E and Ethernet contacts to be ordered separately	Cable length 5 m

	Han® Q 12/0	Han® High Density	Han® 8 D	Han® 8 D Quick Lock
up to 10 A	<p>Contacts Electrical data</p> <p>12 + PE 10 A / 230 / 400V</p>	<p>Contacts Electrical data</p> <p>21 6.5 A / 50 - 120 V</p>	<p>Contacts Electrical data</p> <p>8 10 A / 50 V - 120 V</p>	<p>Contacts Electrical data</p> <p>8 10 A / 50 V - 120 V</p>
	Crimp	Crimp	Crimp	Han-Quick Lock®
	Cross section [mm ² / AWG]	0.14 ... 2.5 mm ² / AWG 26-14	0.09 ... 0.56 mm ² / AWG 26-20	0.14 ... 2.5 mm ² / AWG 26-14
	Male	09 12 012 3001	09 12 021 3001	09 36 008 3001
	Female	09 12 012 3101	09 12 021 3101	09 36 008 2632
	Female	09 12 012 3101	09 12 021 3101	09 36 008 2732
	Notice	Han® D contacts to be ordered separately	D-Sub contacts to be ordered separately	Han® D contacts to be ordered separately
	Notice			Insert incl. contacts

Termination technique	Screw terminal	Han-Quick Lock® termination	Crimp termination	Axial screw termination
		HARTING screw terminals are designed according to DIN EN 60999	Push the stranded wire into the Han-Quick Lock® contact chamber and push the actuator in until it comes to a stop!	Crimp connections are solder-free and tension-resistant, to be processed with crimping tool
Drawing				
Tools	Screwdriver	Screwdriver	Crimping tool	Torque wrench

Power and signal crimp contacts and tools



5 A – D-Sub	Cross section		Male contacts for Ethernet elements	Female contacts for Ethernet elements	Male (gold plated)	Female (gold plated)
	(mm ²)	(AWG)				
	0.09-0.25	28-24			09 67 000 7576	09 67 000 7476
	0.12-0.33	26-22	21 01 100 9020	21 01 100 9025		
	0.13-0.33	26-22			09 67 000 5576	09 67 000 5476
	0.25-0.52	24-20			09 67 000 8576	09 67 000 8476








10 A – Han® D	Cross section		Male (silver plated)	Female (silver plated)	Male (gold plated)	Female (gold plated)
	(mm ²)	(AWG)				
	0.14-0.37	26-22	09 15 000 6104	09 15 000 6204	09 15 000 6124	09 15 000 6224
	0.5	20	09 15 000 6103	09 15 000 6203	09 15 000 6123	09 15 000 6223
	0.75	18	09 15 000 6105	09 15 000 6205	09 15 000 6125	09 15 000 6225
	1	18	09 15 000 6102	09 15 000 6202	09 15 000 6122	09 15 000 6222
	1.5	16	09 15 000 6101	09 15 000 6201	09 15 000 6121	09 15 000 6221
	2.5	14	09 15 000 6106	09 15 000 6206	09 15 000 6126	09 15 000 6226




16 / 20 A – Han® E	Cross section		Male (silver plated)	Female (silver plated)	Male (gold plated)	Female (gold plated)
	(mm ²)	(AWG)				
	0.14-0.37	26-22	09 33 000 6127	09 33 000 6227	09 33 000 6117	09 33 000 6217
	0.5	20	09 33 000 6121	09 33 000 6220	09 33 000 6122	09 33 000 6222
	0.75	18	09 33 000 6114	09 33 000 6214	09 33 000 6115	09 33 000 6215
	1	18	09 33 000 6105	09 33 000 6205	09 33 000 6118	09 33 000 6218
	1.5	16	09 33 000 6104	09 33 000 6204	09 33 000 6116	09 33 000 6216
	2.5	14	09 33 000 6102	09 33 000 6202	09 33 000 6123	09 33 000 6223
	3	12	09 33 000 6106	09 33 000 6206		
	4	12	09 33 000 6107	09 33 000 6207	09 33 000 6119	09 33 000 6221

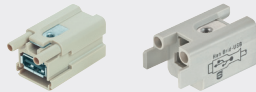
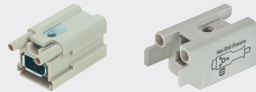
40 A – Han® C	Cross section		Male (silver plated)	Female (silver plated)		
	(mm ²)	(AWG)				
	1.5	16	09 32 000 6104	09 32 000 6204		
	2.5	14	09 32 000 6105	09 32 000 6205		
	4	12	09 32 000 6107	09 32 000 6207		
	6	10	09 32 000 6108	09 32 000 6208		
	10	8	09 32 000 6109	09 32 000 6209		

Crimping tools	Part numbers	09 99 000 0501	09 99 000 0377	09 99 000 0888	09 99 000 0898
					for shielding ferrules
	Contacts	D-Sub 0.09-0.52	Han® C 6.0-10.0 Han® C 4.0-40.0	Han® D 0.14-2.5 Han® E 0.14-4.0	
	Cross section [mm ²]			Han® C 1.5-4.0	
	Locator for Ethernet	61 03 600 0023			09 99 000 0637
Locator for D-Sub	09 99 000 0531			09 99 000 0637	

Axial screw termination tools	Hex key	T-handle hex key	Bit 1/4"	Hex key torque set	Others 	
						Han® F+B removal tool
	2 mm (40 A)	09 99 000 0313	09 99 000 0369	09 99 000 0834		for circular inserts
2.5 mm (70 A)		09 99 000 0375	09 99 000 0834	09 99 000 0878		

Configuration example	Plug		Socket				
	 Hood and adapter Han® F+B and RJ45 adapter 19 15 503 1403	 09 15 503 9911		 Plug Cat. 6, IDC 09 45 100 1560	 Socket Cat. 6, IDC 09 45 545 1561		 Bulkhead mounted housing, straight 09 15 503 0301

	Cat. 5	Cat. 6A	Cat. 6A
			
Poles Data transmission	4 poles 10/100 Mbit	8 poles 1/10 Gbit	8 poles 1/10 Gbit
Termination	HARAX® IDC	IDC	preLink®
Plug	09 45 100 1100	09 45 100 1560	20 82 002 0001
AWG	24/22	27-22	
preLink yellow Termination Block			20 82 000 0001
AWG			23/22
preLink white Termination Block			20 82 001 0002
AWG			27/26
Socket (HIFF)	09 45 545 1120	09 45 545 1561	20 82 001 0001
AWG	24/22	28-24	23/22
Socket (HIFF)		09 45 545 1562	20 82 001 0002
AWG		24-22	27/26
Coupler (HIFF)	09 45 545 1560	09 45 545 1560	09 45 545 1560
Notice	Use Han® HIFF adapter for socket and coupler 09 45 515 0024		
Adapter for plug and socket/coupler	09 15 503 9911		

USB / Fire Wire	Han-Brid® USB	Han-Brid® FireWire	Others	Tool
	Contacts Electrical data Termination	 1 1 A / 50 V Patch cable		 1 1A / 50 V Patch cable
Male	09 12 001 3091	09 12 001 3071		20 82 000 9901
Female	09 12 001 2794	09 12 001 2774		
Notice	Use adapter for male and female 09 15 503 9911			



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