



Pushing Performance



People | Power | Partnership

**HARTING**

Han<sup>®</sup> F+B – A clean connection

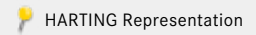
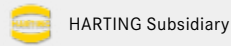
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# Transforming customer wishes into concrete solutions



The HARTING Technology Group is skilled in the fields of electrical, electronic and optical connection, transmission and networking technology, 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/data-networking applications, including, for example, mechanical engineering, rail technology, wind energy plants, factory automation and the telecommunications sector. In addition, HARTING also produces electro-magnetic components for the automobile industry and offers solutions in the field of housing technology and shop systems.

The HARTING Group currently comprises 58 sales companies and production plants worldwide employing a total of about 5,000 staff.



#### We aspire to top performance.

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

#### Wherever our customers are, we're there.

Increasing industrialization is creating growing markets that are characterized by widely diverging demands and requirements. What these markets all share in common is the quest for perfection, increasingly efficient processes and reliable technologies. **HARTING** is providing these technologies – in Europe, the Americas and Asia. In order to implement customer requirements in the best possible manner, the **HARTING** professionals at our international subsidiaries engage in up-close, partnership-based interaction with our customers, right from the very early product development phase.

Our on-site staff 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 offer our customers the best possible solutions, on request **HARTING** contributes a great deal more and is tightly integrated into the value-creation process.

From ready-assembled cables through to control racks or ready-to-go control desks. Our aim is to generate maximum benefit for our customers – with no compromises!

#### 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 towards new requirements, which is why **HARTING** is the first company 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 sophisticated network systems. Over the course of many years of close, trust-based cooperation with its customers, the **HARTING** Technology Group has become one of the leading specialists globally for connector technology. We offer individual customers specific and innovative solutions that go beyond the basic standard functionalities. These tailored solutions deliver sustained results, ensure investment security and enable customers to achieve significant added value.

**Opting for HARTING opens up an innovative, complex world of concepts and ideas.**

In order to develop and produce connectivity and network solutions serving an exceptionally wide range of connector applications in a professional and cost-effective manner, **HARTING** not only commands the full array of conventional tools and basic technologies. Above and beyond these capabilities, **HARTING** is constantly harnessing and refining its broad base of knowledge and experience to create new solutions that also ensure continuity. To secure its lead in know-how, **HARTING** draws on a wealth of sources from its in-house research and applications.

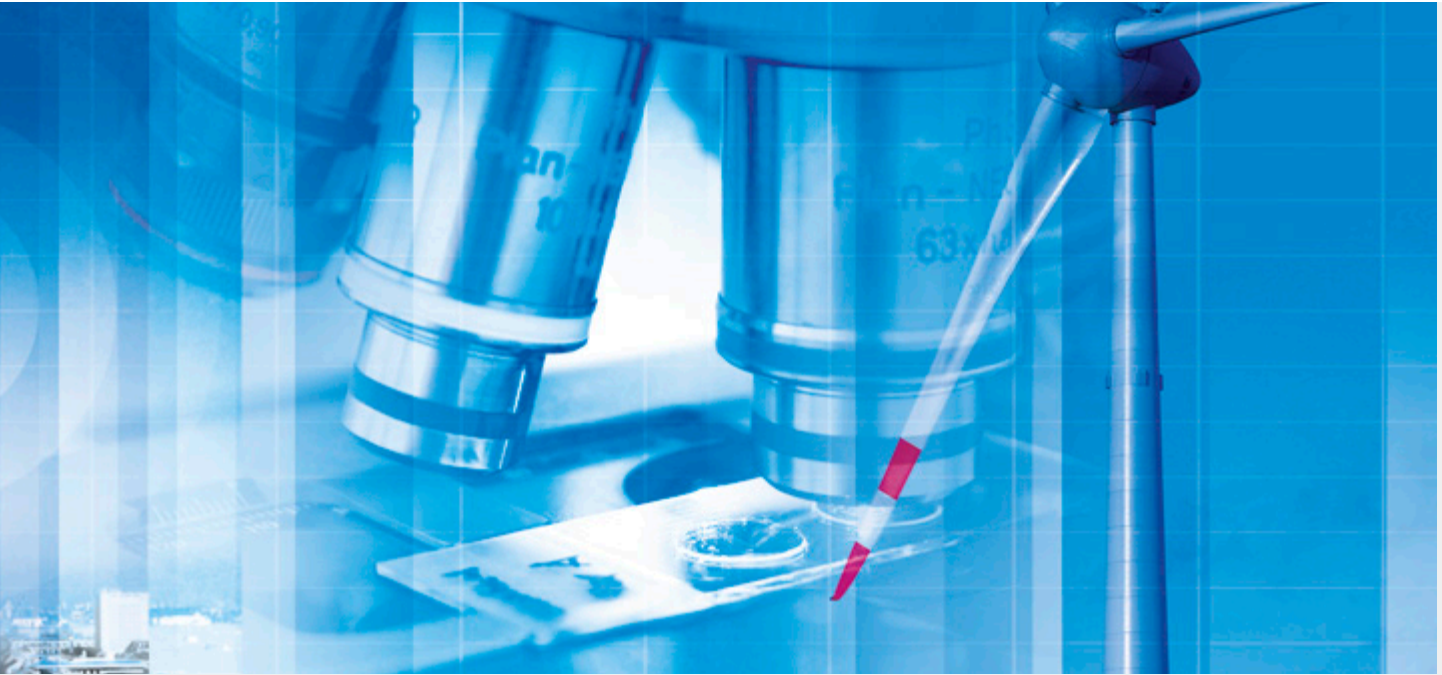
Salient examples of these sources of innovative knowledge include microstructure technologies, 3D design and connection technolo-

gy, high-temperature and ultrahigh-frequency applications that are finding use in telecommunications and 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 and stainless steel.

**HARTING overcomes technological limitations.**

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 not only components, but comprehensive solutions attuned to individual customer requirements and preferences. The range of cost-effective solutions covers ready-to-use cable configurations, completely assembled backplanes and board system carriers, as well as fully wired and tested control panels.

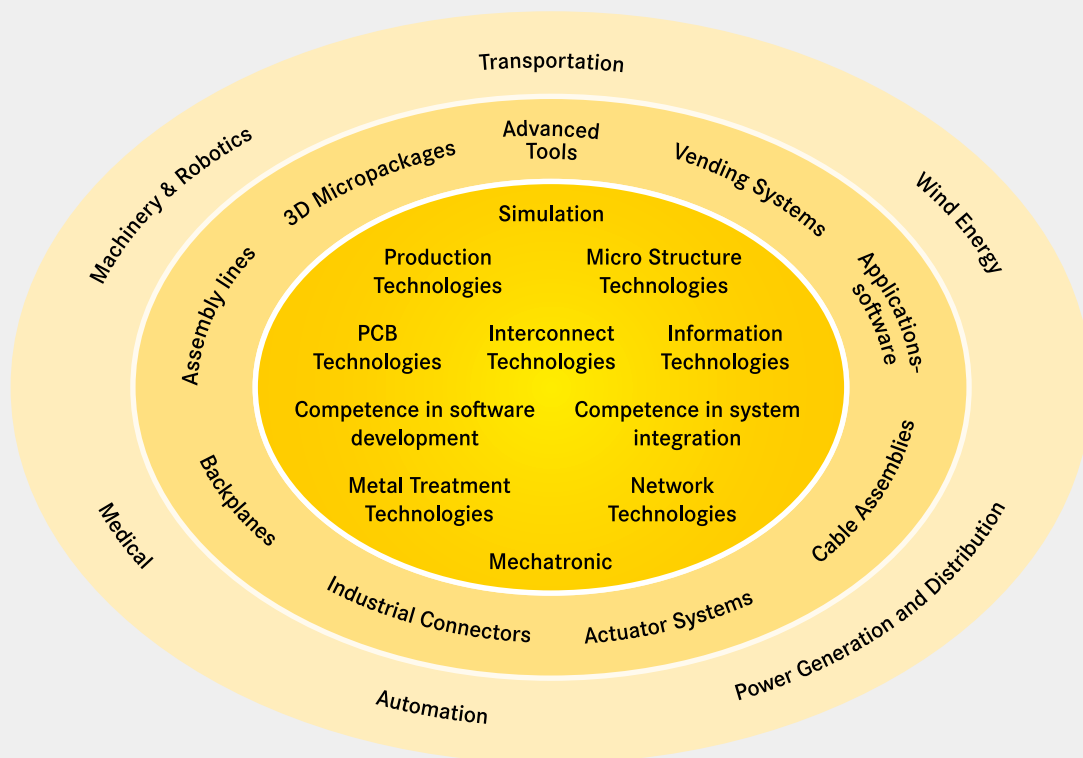
In order to ensure the future-proof design of RF and EMC-compatible interface solutions, the central **HARTING** laboratory (certified to EN 45001) employs simulation tools, as well as experimental, testing and diagnostics facilities all the way to scanning electron microscopes. In addition to product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



HARTING's knowledge is practical know-how that generates synergy effects.

HARTING commands decades of experience with regard to the applications conditions involved in connections in telecommunications, computer, network and medical technologies, as well as industrial automation technologies, e.g. in the mechanical engineering and plant engineering areas, in addition to the power generation industry and the transportation sector. HARTING is highly

conversant with the specific application areas in all of these technology fields. In every solution approach, the key focus is on the application. In this context, uncompromising, superior quality is our hallmark. Every new solution found invariably flows 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. HARTING is synergy in action.





The **HARTING eCatalogue / eShop** can be found on our homepage at [www.HARTING.com](http://www.HARTING.com) or at the direct link [www.eCatalogue.HARTING.com](http://www.eCatalogue.HARTING.com).

The HARTING e-Catalogue is your platform for conveniently selecting individual products as well as configuring complete solutions. Our comprehensive product pages provide you with all necessary technical information and CAD files in various formats for downloading. You may also contact our technical sales department directly.

Find out about **product innovations and news** on the start page of the HARTING e-Catalogue or go directly to [www.product-news.HARTING.com](http://www.product-news.HARTING.com).

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Contents

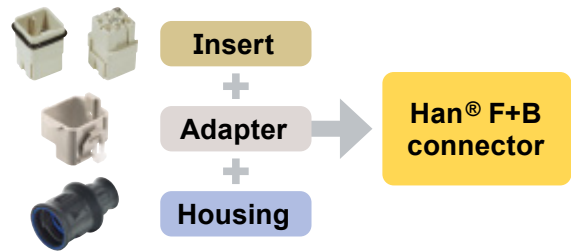
Page

Summary .....  
Adapter .....  
Inserts .....  
Hoods/Housings .....  
Cable assemblies .....  
Accessories .....  
Tools .....

**Han 24.3**  
**Han 24.8**  
**Han 24.9**  
**Han 24.17**  
**Han 24.21**  
**Han 24.25**  
**Han 24.26**

## 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

- IP69 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
<b>Specifications and approvals</b>	
Materials according to FDA 21	P3-topax 19
Resistance, Ecolab-certified:	P3-topax 52
	P3-topax 56
	P3-topax 66
	P3-topax 99
	P3-topax 200

## 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

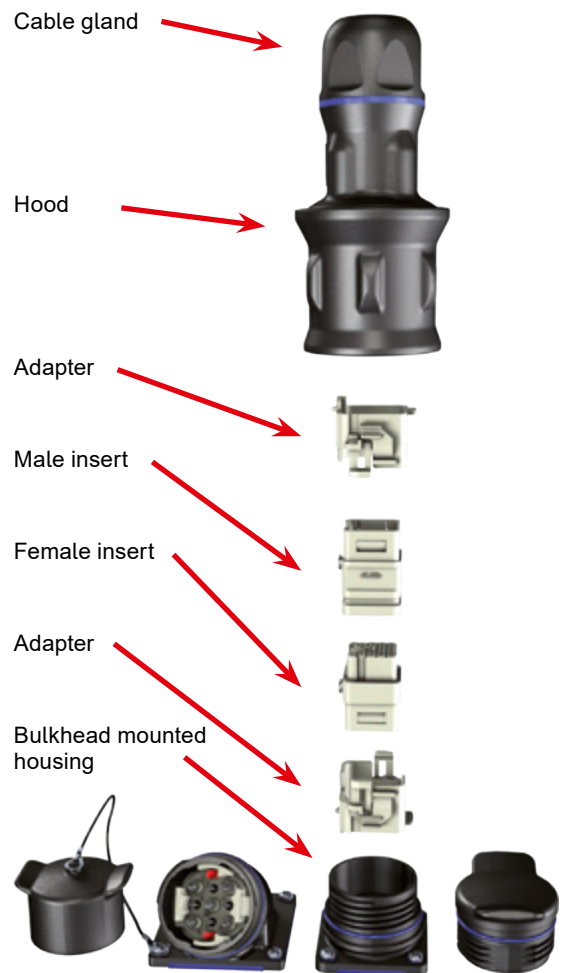
### Applications:

- 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

## System description



Notice:  
Adapter required for Han® 3 A insert



Overview



Hoods and cable glands

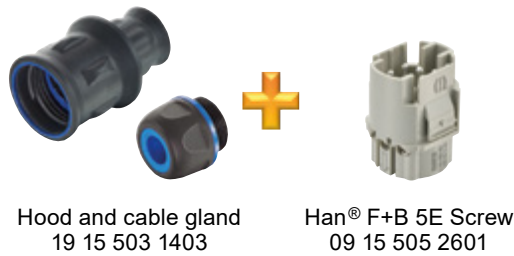
	Hood	Cover hood	Cable gland	
Part number (black)	19 15 503 1403	09 15 503 5411	19 15 523 5196	19 15 503 5196
			Clamping range 11 - 13	Clamping range 11 - 13
			19 15 523 5197	19 15 503 5197
			Clamping range 13 - 16	Clamping range 13 - 16
Part number (blue)	19 15 513 1403	09 15 513 5411	19 15 523 5199	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	

Housings and cable-to-cable hood

	Bulkhead mounted housing, straight	Bulkhead mounted housing, angled	Cable-to-cable hood	Cover hood for bulkhead mounted housing	Bulkhead mounted housing, straight
Part number (black)	09 15 503 0301	09 15 503 0901	19 15 503 1701	09 15 503 5401	09 15 503 0102
Part number (blue)	09 15 513 0301	09 15 513 0901	19 15 513 1701	09 15 513 5401	09 15 513 0102

Han  
F+B

Cable side



Configuration example

Hood and cable gland  
19 15 503 1403

Han® F+B 5E Screw  
09 15 505 2601

	Han® F+B 4 / 4	Han® F+B 17D	Han® F+B 5E	Han® F+B 4 / 4 / 4
20 A				
Contacts	4 + PE + 4	17 + PE	5 + PE	4 + PE + 4 + PE 4mm <sup>2</sup>
Electrical data	20 A / 10A / 400V / 250V	10 A / 400 V	16A / 600V	20 A / 10A / 400V / 250V
Termination	Han® E / Han® D Crimp	Han® D	Han® E Screw	Han® E / Han® D Crimp
Cross section [mm <sup>2</sup> / AWG]	4 mm <sup>2</sup> / 2,5 mm <sup>2</sup>	2,5 mm <sup>2</sup>	2,5 mm <sup>2</sup>	4 mm <sup>2</sup> / 2,5 mm <sup>2</sup>
Male	09 15 508 3001	09 15 517 3001	09 15 505 2601	09 15 512 3002
Female	09 15 508 3101	09 15 517 3101	09 15 505 2701	09 15 512 3102
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

Hybrid system cable				
	Cable side	Device side	Cable side	
up to 10 A				
Contacts	20 A + PE	20 A + PE	400 V	
Electrical data	10 A / Cat. 5e	10 A / Cat. 5e		
Cable assembly	Han F+B Hybrid system cable	Han F+B Hybrid device side	Han® F+B 17 D system cable	
Wire design	5G 2,5 mm <sup>2</sup> / 2 x 1,5 mm <sup>2</sup> / 2 x 0,75 mm <sup>2</sup> / 2 x 2 AWG 22	5G 2,5 mm <sup>2</sup> / 2 x 1,5 mm <sup>2</sup> / 2 x 0,75 mm <sup>2</sup> / 2 x 2 AWG 22	17 x 0,5 mm <sup>2</sup>	
Male	33 50 300 0140 050	33 50 399 8141 010	33 50 410 0306 050	
Female				
Notice	Cable length 5 m	Wire length 1 m	Cable length 5 m	

	Screw terminal	Han-Quick Lock® termination	Crimp termination	Axial screw termination
Termination technique	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	For flexible conductors with large cross sections, special tools required
Drawing				
Tools	Screwdriver	Screwdriver	Crimping tool	Torque wrench

### Cable assembly

There are not many industries that have such extensively high standards in their production than the food and drink industry. Hygiene regulations are not only applicable to connectors, but also cords and accessories. Cords need to be resistant towards physical load in order to guarantee a smooth and reliable operation. However, they also need to be able to resist aggressive cleaning chemicals, which are being used on a daily basis in different areas.

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® 7 D 09 21 007 3131		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® 4 A		Han® 4 A Quick Lock		Han® 7 D		Han® 7 D Quick Lock	
	Contacts	4 + PE		4 + PE		7 + PE		7 + PE	
	Electrical data	10 A / 230 / 400 V		10 A / 230 / 400V		10 A / 250 V		10 A / 250 V	
	Termination	Screw terminal		Quick Lock		Crimp		Quick Lock	
	Cross section [mm² / AWG]	1.0 ... 2.5 mm² / AWG 18-14		0.5 ... 2.5 mm² / AWG 20-14		0.14 ... 2.5 mm² / AWG 26-14		0.14 ... 2.5 mm² / AWG 26-14	
	Male	09 20 004 2611		09 20 004 2633		09 21 007 3031		09 21 007 2632	
	Female	09 20 004 2711		09 20 004 2733		09 21 007 3131		09 21 007 2732	
Notice	Insert incl. contacts		Insert incl. contacts		Han® D contacts to be ordered separately		Han® D contacts to be ordered separately		

10 A		Han® High Density		Han® 3 A adapter	
	Contacts	21			
	Electrical data	6.5 A / 50 - 120 V			
	Termination	Crimp			
	Cross section [mm² / AWG]	0.09 ... 0.56 mm² / AWG 26-20			
	Male	09 12 021 3001		09 15 503 9911	
Female	09 12 021 3101				
Notice	D-Sub contacts to be ordered separately		required for Han® 3 A male and female inserts		

# Summary



Han  
F+B





5 A – D-Sub	Cross section		Male contacts for Ethernet elements	Female contacts for Ethernet elements	Male (gold plated)	Female (gold plated)
	(mm <sup>2</sup> )	(AWG)				
	0.09-0.25	28-24				
	0.12-0.33	26-22	21 01 100 9020	21 01 100 9025	09 67 000 7576	09 67 000 7476
	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 <sup>2</sup> )	(AWG)				
	0.14-0.37	26-22				
	0.5	20	09 15 000 6104	09 15 000 6204	09 15 000 6124	09 15 000 6224
	0.75	18	09 15 000 6103	09 15 000 6203	09 15 000 6123	09 15 000 6223
	1	18	09 15 000 6105	09 15 000 6205	09 15 000 6125	09 15 000 6225
	1.5	16	09 15 000 6102	09 15 000 6202	09 15 000 6122	09 15 000 6222
2.5	14	09 15 000 6101	09 15 000 6201	09 15 000 6121	09 15 000 6221	
16 / 20 A – Han® E	Cross section		Male (silver plated)	Female (silver plated)	Male (gold plated)	Female (gold plated)
	(mm <sup>2</sup> )	(AWG)				
	0.14-0.37	26-22				
	0.5	20	09 33 000 6127	09 33 000 6227	09 33 000 6117	09 33 000 6217
	0.75	18	09 33 000 6121	09 33 000 6220	09 33 000 6122	09 33 000 6222
	1	18	09 33 000 6114	09 33 000 6214	09 33 000 6115	09 33 000 6215
	1.5	16	09 33 000 6105	09 33 000 6205	09 33 000 6118	09 33 000 6218
	2.5	14	09 33 000 6104	09 33 000 6204	09 33 000 6116	09 33 000 6216
	3	12	09 33 000 6102	09 33 000 6202	09 33 000 6123	09 33 000 6223
4	12	09 33 000 6106	09 33 000 6206			
40 A – Han® C	Cross section		Male (silver plated)	Female (silver plated)		
	(mm <sup>2</sup> )	(AWG)				
	1.5	16				
	2.5	14	09 32 000 6104	09 32 000 6204		
	4	12	09 32 000 6105	09 32 000 6205		
	6	10	09 32 000 6107	09 32 000 6207		
Crimping tools	Part numbers		09 99 000 0501	09 99 000 0377	09 99 000 0888	09 99 000 0898
	Contacts	D-Sub 0.09-0.52	Han® C 6.0-10.0	Han® D 0.14-2.5	for shielding ferrules	
	Cross section [mm <sup>2</sup> ]		Han® C 4.0-40.0	Han® E 0.14-4.0		
	Locator for Ethernet	61 03 600 0023		Han® C 1.5-4.0		
	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 0997	




Han  
24  
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6




# Summary





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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

RJ45 male side		Cat. 5 – 4 poles IDC	Cat. 6 – 8 poles IDC	Cat. 5/6 – 4/8 poles preLink
				
	Classification	RJ45 contact insert	RJ45 contact insert	RJ45 contact insert
	Transmission rate	10/100 Mbit	1/10 Gbit	1/10 Gbit
	AWG	26-22	27-22	27-22
	Part number	09 45 100 1100	09 45 100 1500	20 82 002 0001
	PreLink Block yellow AWG 23/22			20 82 000 0001
	PreLink Block white AWG 27/26			20 82 000 0002
	Han® F+B 3A adapter	09 15 503 9911	09 15 503 9911	09 15 503 9911

RJ45 female side		Cat. 5 – 4 poles IDC	Cat. 6 – 8 poles IDC	Cat. 5/6 – 4/8 poles preLink
				
	Classification	RJ45 female insert	RJ45 female insert	RJ45
	Transmission rate	10/100 Mbit	1/10 Gbit	1/10 Gbit
	AWG	24-22	28-22	
	Part number	09 45 545 1120	09 45 545 1560	20 82 001 0001
	PreLink Block yellow AWG 23/22			20 82 000 0001
	PreLink Block white AWG 27/26			20 82 000 0002
	Han® HIFF adapter	09 45 515 0024	09 45 515 0024	09 45 515 0024
Han® F+B 3A adapter	09 15 503 9911	09 15 503 9911	09 15 503 9911	

RJ45 female insert	Cat. 6 coupler 8 poles		Others	Tool
				
	Classification	RJ45 coupler Bu/Bu		HA-VIS preLink® assembly tool
	Transmission rate	100 Mbit - 10 Gbit		20 82 000 9901
	Part number male / female	09 45 200 1560		
	Han® F+B 3A adapter	09 15 503 9911		

## Features

- Suitable for a lot of inserts size 3 A

## Technical characteristics

Mating cycles	≥250
Material (accessories)	Polycarbonate (PC)
RoHS	compliant

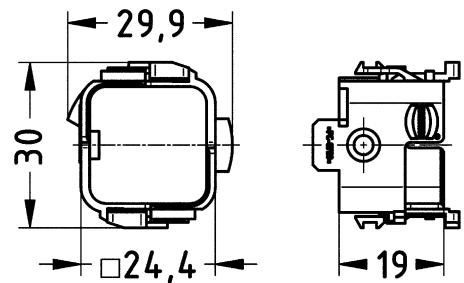
Identification	Part number	Drawing (dimensions in mm)
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Han® F+B,  
Size 3 A,  
Adapter

09 15 503 9911



for male inserts  
for female inserts



Number of contacts

**5+**

16 A 600 V 6 kV 3



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F+B

## Technical characteristics

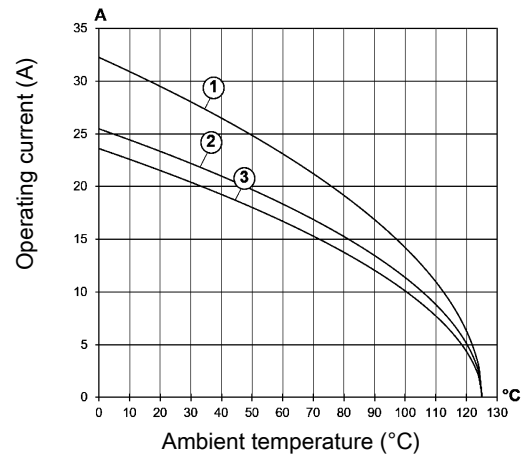
Number of contacts	5
Rated current	16 A
Rated voltage	600 V
Rated impulse voltage	6 kV
Pollution degree	3
Insulation resistance	$>10^{10} \Omega$
Limiting temperature	-40 ... +125 °C
Mating cycles	$\geq 500$
Material (insert)	Polycarbonate (PC)
Colour (insert)	RAL 7032 (pebble grey)
Material (contacts)	Copper alloy
Material (accessories)	Polyamide (PA)
Colour (accessories)	Red
Material flammability class acc. to UL 94	V-0
RoHS	compliant

## Derating

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques acc. to IEC 60512-5-2




- ① Han® F+B 5 E 2.5 mm<sup>2</sup>
- ② Han® F+B 5 E 1.5 mm<sup>2</sup>
- ③ Han® F+B 5 E 1 mm<sup>2</sup>


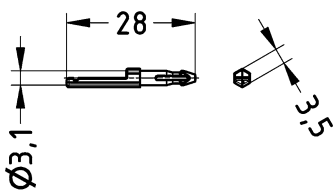
## Details

### Coding pin

Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert.

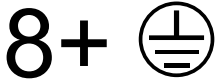
Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
Han® F+B, Screw termination, With wire protection, Contact surface: Silver plated 	0.75 ... 2.5	09 15 505 2601	09 15 505 2701	

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Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
Coding element, Pack contents: 20 pieces per frame 		09 12 000 9927	09 12 000 9927	



Number of contacts



4x Signal  
10 A 250 V 4 kV 3  
4x Power  
20 A 400 V 6 kV 3

## Features

- Signal
- Power

## Technical characteristics

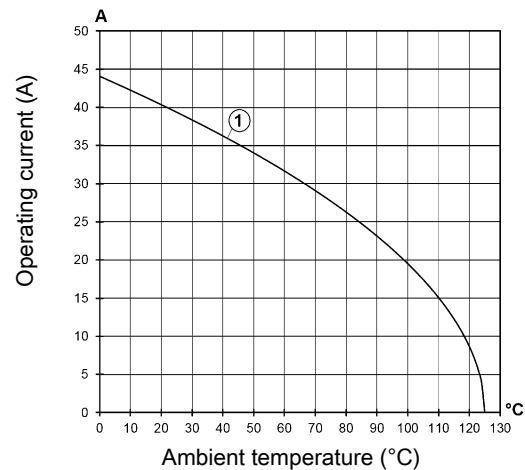
Number of contacts	8
Number of power contacts	4
Number of signal contacts	4
Rated current (signal)	10 A
Rated voltage (signal)	250 V
Rated impulse voltage (signal)	4 kV
Pollution degree (signal)	3
Rated current (power)	20 A
Rated voltage (power)	400 V
Rated impulse voltage (power)	6 kV
Pollution degree (power)	3
Insulation resistance	$>10^{10} \Omega$
Contact resistance	$\leq 3 \text{ m}\Omega, \leq 1 \text{ m}\Omega$
Limiting temperature	$-40 \dots +125 \text{ }^\circ\text{C}$
Mating cycles	$\geq 500$
Mating cycles with other HMC components	$\geq 3000$
Material (insert)	Polycarbonate (PC)
Colour (insert)	RAL 7032 (pebble grey)
Material (contacts)	Copper alloy
Material flammability class acc. to UL 94	V-0
RoHS	compliant compliant with exemption

## Derating

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques acc. to IEC 60512-5-2



- ① Conductor cross-section 4 mm<sup>2</sup>  
Current rating of the Han E<sup>®</sup> contacts

## Specifications and approvals

UL 2237 PVVA2.E318390  
EN 60664-1  
IEC 61984

## Details

The connector series Han<sup>®</sup> F+B equipped with all contacts may be used for voltages up to 400 V, pollution degree 3. A modified contact loading arrangement only with 4 + PE Han E<sup>®</sup> power contacts permits use up to 500 V also in the same pollution degree.

**Crimping tools** see chapter Han 90

### Remarks on the crimp technique

The wire gauges mentioned in the catalogue refer to geometric wire gauges of cables.

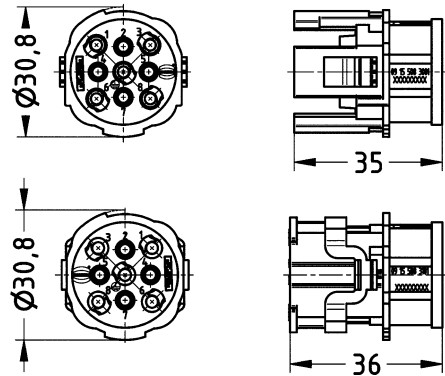
Han  
F+B

Identification      Conductor cross-section (mm<sup>2</sup>)      Part number Male      Female      Drawing (dimensions in mm)

Han® F+B,  
Crimp termination



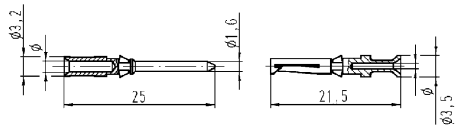
Please order crimp contacts separately.  
4x Han E®  
4x Han D®



Han D®,  
Crimp contact,  
Contact surface:  
Silver plated



Conductor cross-section (mm <sup>2</sup> )	Part number Male	Part number Female
0.14 ... 0.37	09 15 000 6104	09 15 000 6204
0.5	09 15 000 6103	09 15 000 6203
0.75	09 15 000 6105	09 15 000 6205
1	09 15 000 6102	09 15 000 6202
1.5	09 15 000 6101	09 15 000 6201
2.5	09 15 000 6106	09 15 000 6206

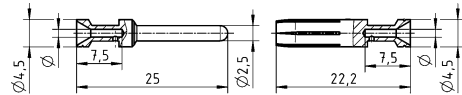


Conductor cross-section	Ø	Stripping length
0.14-0.37 mm <sup>2</sup> AWG 26-22	0.9 mm	8 mm
0.5 mm <sup>2</sup> AWG 20	1.1 mm	8 mm
0.75 mm <sup>2</sup> AWG 18	1.3 mm	8 mm
1 mm <sup>2</sup> AWG 18	1.45 mm	8 mm
1.5 mm <sup>2</sup> AWG 16	1.75 mm	8 mm
2.5 mm <sup>2</sup> AWG 14	2.25 mm	6 mm

Han E®,  
Crimp contact,  
Contact surface:  
Silver plated



Conductor cross-section (mm <sup>2</sup> )	Part number Male	Part number Female
0.5	09 33 000 6121	09 33 000 6220
0.75	09 33 000 6114	09 33 000 6214
1	09 33 000 6105	09 33 000 6205
1.5	09 33 000 6104	09 33 000 6204
2.5	09 33 000 6102	09 33 000 6202
3	09 33 000 6106	09 33 000 6206
4	09 33 000 6107	09 33 000 6207



Conductor cross-section	Identification
0.14-0.37 mm <sup>2</sup> AWG 26-22	no groove
0.5 mm <sup>2</sup> AWG 20	no groove
0.75 mm <sup>2</sup> AWG 18	1 groove*
1 mm <sup>2</sup> AWG 18	1 groove
1.5 mm <sup>2</sup> AWG 16	2 groove
2.5 mm <sup>2</sup> AWG 14	3 groove
3 mm <sup>2</sup> AWG 12	wide groove
4 mm <sup>2</sup> AWG 12	no groove

\* on the back crimp collar

Stripping length 7.5 mm

Number of contacts

# 12+

4x Data  
 4x Signal  
 10 A 250 V 4 kV 3  
 4x Power  
 20 A 400 V 6 kV 3

## Features

- Data
- Signal
- Power

## Technical characteristics

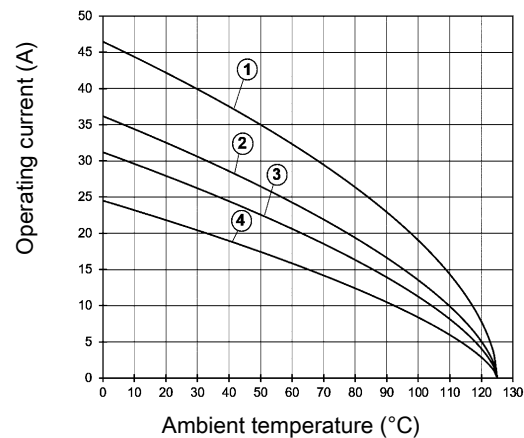
Number of contacts	12
Number of power contacts	4
Number of signal contacts	4
Number of data contacts	4
Rated current (signal)	10 A
Rated voltage (signal)	250 V
Rated impulse voltage (signal)	4 kV
Pollution degree (signal)	3
Rated current (power)	20 A
Rated voltage (power)	400 V
Rated impulse voltage (power)	6 kV
Pollution degree (power)	3
Transmission characteristics	Cat. 5, Class D up to 100 MHz
Data rate	10 Mbit/s, 100 Mbit/s
Insulation resistance	$>10^{10} \Omega$
Contact resistance	$\leq 3 \text{ m}\Omega, \leq 1 \text{ m}\Omega$
Limiting temperature	-40 ... +125 °C
Mating cycles	$\geq 500$
Mating cycles with other HMC components	$\geq 3000$
Material (insert)	Polycarbonate (PC)
Colour (insert)	RAL 7032 (pebble grey)
Material (contacts)	Copper alloy
Material flammability class acc. to UL 94	V-0
RoHS	compliant compliant with exemption

## Derating

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques acc. to IEC 60512-5-2



Han E® 4 mm<sup>2</sup>, Han D® 2.5 mm<sup>2</sup> 10 A  
 Han E® 2.5 mm<sup>2</sup>, Han D® 2.5 mm<sup>2</sup> 10 A  
 Han E® 1.5 mm<sup>2</sup>, Han D® 2.5 mm<sup>2</sup> 10 A  
 Han E® 1,0 mm<sup>2</sup>, Han D® 2,5 mm<sup>2</sup> 10 A

## Specifications and approvals

EN 60664-1  
 IEC 61984

## Details

**Crimping tools** see chapter Han 90

### Remarks on the crimp technique

The wire gauges mentioned in the catalogue refer to geometric wire gauges of cables.

Han  
F+B

Han® F+B,  
Crimp termination



Please order crimp contacts separately.  
4x Han E®  
4x Han D®  
4x M12 for data element  
incl. Ethernet element

Han D®,  
Crimp contact,  
Contact surface:  
Silver plated

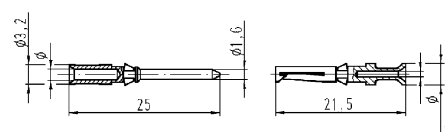
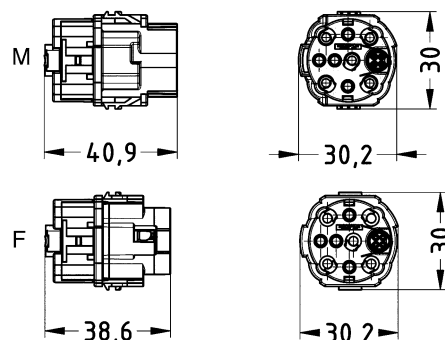


Conductor  
cross-section  
(mm<sup>2</sup>)

Part number  
Male Female

Drawing  
(dimensions in mm)

09 15 512 3002 09 15 512 3102

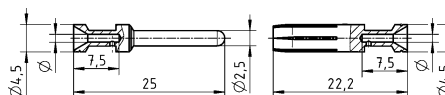


Conductor cross-section	Ø	Stripping length
0.14-0.37 mm <sup>2</sup> AWG 26-22	0.9 mm	8 mm
0.5 mm <sup>2</sup> AWG 20	1.1 mm	8 mm
0.75 mm <sup>2</sup> AWG 18	1.3 mm	8 mm
1 mm <sup>2</sup> AWG 18	1.45 mm	8 mm
1.5 mm <sup>2</sup> AWG 16	1.75 mm	8 mm
2.5 mm <sup>2</sup> AWG 14	2.25 mm	6 mm

Han E®,  
Crimp contact,  
Contact surface:  
Silver plated



09 33 000 6121 09 33 000 6220  
09 33 000 6114 09 33 000 6214  
09 33 000 6105 09 33 000 6205  
09 33 000 6104 09 33 000 6204  
09 33 000 6102 09 33 000 6202  
09 33 000 6106 09 33 000 6206  
09 33 000 6107 09 33 000 6207



Conductor cross-section	Identification
0.14-0.37 mm <sup>2</sup> AWG 26-22	no groove
0.5 mm <sup>2</sup> AWG 20	no groove
0.75 mm <sup>2</sup> AWG 18	1 groove*
1 mm <sup>2</sup> AWG 18	1 groove
1.5 mm <sup>2</sup> AWG 16	2 groove
2.5 mm <sup>2</sup> AWG 14	3 groove
3 mm <sup>2</sup> AWG 12	wide groove
4 mm <sup>2</sup> AWG 12	no groove

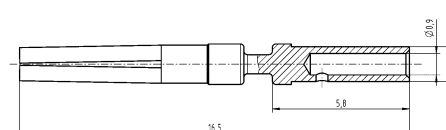
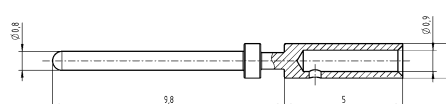
\* on the back crimp collar

Stripping length 7.5 mm

Circular connectors M12,  
Crimp contact,  
Contact surface:  
Gold plated



21 01 100 9020 21 01 100 9025



Number of contacts

**17+**

10 A 400 V 6 kV 3



Han  
F+B

## Technical characteristics

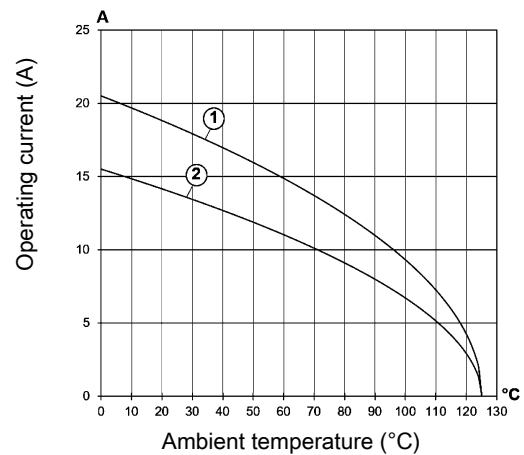
Number of contacts	17
Rated current	10 A
Rated voltage	400 V
Rated impulse voltage	6 kV
Pollution degree	3
Insulation resistance	$>10^{10} \Omega$
Contact resistance	$\leq 3 \text{ m}\Omega$
Limiting temperature	-40 ... +125 °C
Mating cycles	$\geq 500$
Mating cycles with other HMC components	$\geq 3000$
Material (insert)	Polycarbonate (PC)
Colour (insert)	RAL 7032 (pebble grey)
Material (contacts)	Copper alloy
Material (accessories)	Polyamide (PA)
Colour (accessories)	Red
Material flammability class acc. to UL 94	V-0
RoHS	compliant with exemption compliant

## Derating

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques acc. to IEC 60512-5-2



- ① Han® F+B 17 D 2.5 mm<sup>2</sup>
- ② Han® F+B 17 D 1.5 mm<sup>2</sup>

## Specifications and approvals

EN 60664-1  
IEC 61984

## Details

**Crimping tools** see chapter Han 90

### Remarks on the crimp technique

The wire gauges mentioned in the catalogue refer to geometric wire gauges of cables.

### Coding pin

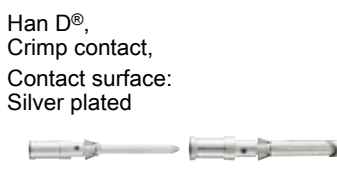
Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert.

Han  
F+B

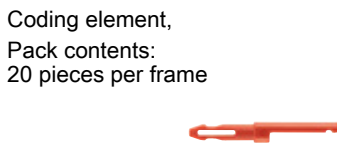
Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	



Please order crimp contacts separately.

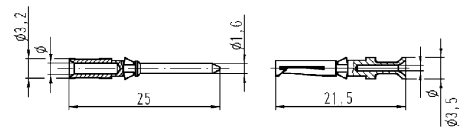
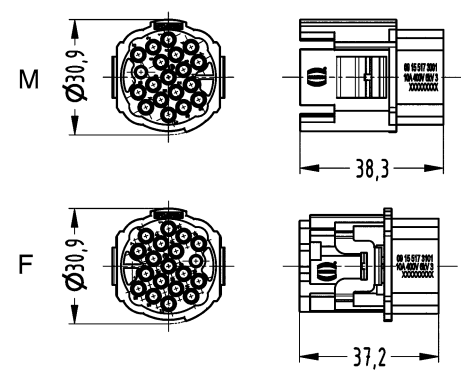


Han D®,  
Crimp contact,  
Contact surface:  
Silver plated

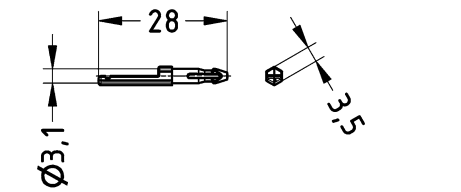


Coding element,  
Pack contents:  
20 pieces per frame

0.14 ... 2.5	09 15 517 3001	09 15 517 3101
0.14 ... 0.37	09 15 000 6104	09 15 000 6204
0.5	09 15 000 6103	09 15 000 6203
0.75	09 15 000 6105	09 15 000 6205
1	09 15 000 6102	09 15 000 6202
1.5	09 15 000 6101	09 15 000 6201
2.5	09 15 000 6106	09 15 000 6206
	09 12 000 9927	09 12 000 9927



Conductor cross-section	Ø	Stripping length
0.14-0.37 mm <sup>2</sup> AWG 26-22	0.9 mm	8 mm
0.5 mm <sup>2</sup> AWG 20	1.1 mm	8 mm
0.75 mm <sup>2</sup> AWG 18	1.3 mm	8 mm
1 mm <sup>2</sup> AWG 18	1.45 mm	8 mm
1.5 mm <sup>2</sup> AWG 16	1.75 mm	8 mm
2.5 mm <sup>2</sup> AWG 14	2.25 mm	6 mm



Connector for food+beverage industry  
Screw locking

Han  
F+B

## Features

- “Easy-to-Clean” design
- Certified by Ecolab
- IP6K9K acc. to ISO 20653
- Inserts for Data / Signal / Power / Hybrid
- Han® 3 A inserts adaptable
- Protection Class II acc. to IEC 61140


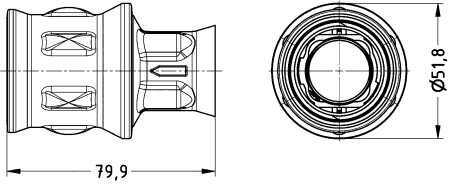

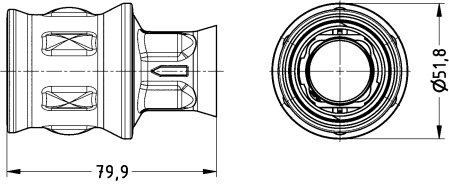
## Technical characteristics

Limiting temperature	-40 ... +125 °C
Mating cycles	≥500
Degree of protection acc. to IEC 60529	IP67, locked condition IP6K9K acc. to ISO 20653
Material (hood/housing)	Polypropylen
Colour (hood/housing)	Black Blue
Material (seal)	EPDM/TPE EPDM Silicone
Colour (seal)	Blue
Material flammability class acc. to UL 94	HB
RoHS	compliant


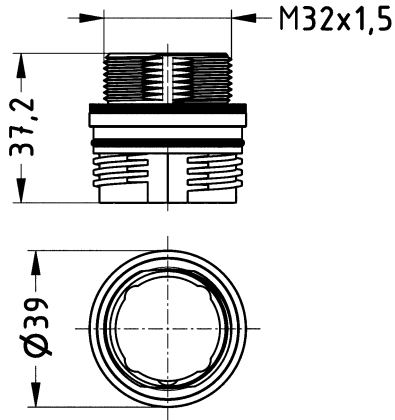

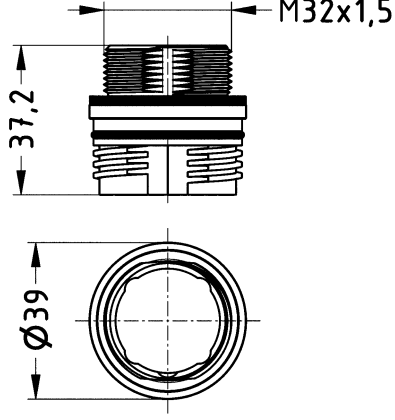

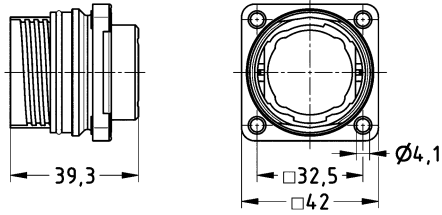

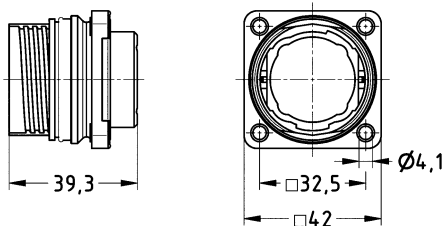
## Specifications and approvals

Ecolab Topactive 200  
Ecolab Topactive 500  
Ecolab Topax 66  
Ecolab Topactive OKTO  
Ecolab Topax 990  
FDA 21 CFR 177.1520  
FDA 21 CFR 177.2600


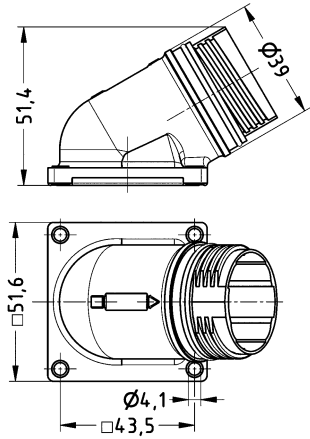

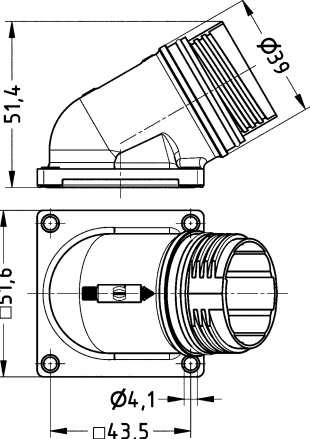

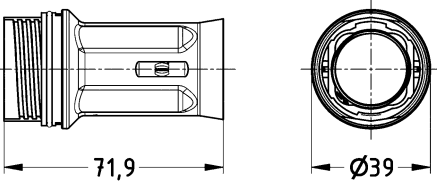

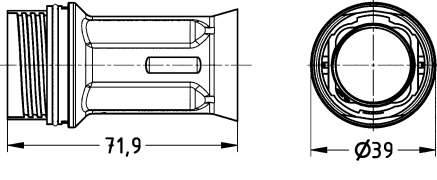


Identification	Cable entry	Part number	Drawing (dimensions in mm)	
Han® F+B, Hood, Top entry, Black, IP67 locked condition, IP6K9K acc. to ISO 20653  	1x M25	19 15 503 1403		
Han® F+B, Hood, Top entry, Blue, IP67 locked condition, IP6K9K acc. to ISO 20653  	1x M25	19 15 513 1403		


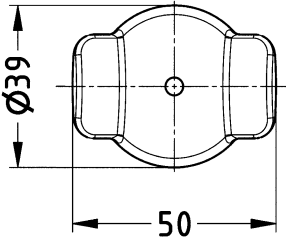

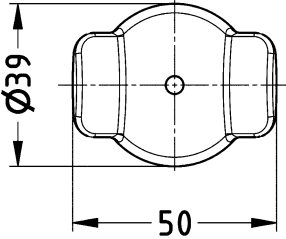

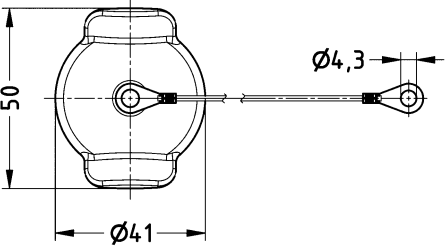

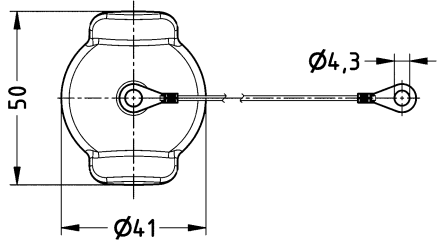
Han  
F+B

Identification	Cable entry	Part number	Drawing (dimensions in mm)
<p>Han® F+B, Screw mounted housing, Straight, Black, IP67 locked condition, IP6K9K acc. to ISO 20653</p> 	<p>1x M32</p>	<p>09 15 503 0102</p>	
<p>Han® F+B, Screw mounted housing, Straight, Blue, IP67 locked condition, IP6K9K acc. to ISO 20653</p> 	<p>1x M32</p>	<p>09 15 513 0102</p>	
<p>Han® F+B, Bulkhead mounted housing, Straight, With three through holes for fixing screws, Black, IP67 locked condition, IP6K9K acc. to ISO 20653</p> 		<p>09 15 503 0301</p>	
<p>Han® F+B, Bulkhead mounted housing, Straight, With three through holes for fixing screws, Blue, IP67 locked condition, IP6K9K acc. to ISO 20653</p> 		<p>09 15 513 0301</p>	



Identification	Cable entry	Part number	Drawing (dimensions in mm)	
<p>Han® F+B, Bulkhead mounted housing, Angled, With three through holes for fixing screws, Black, IP67 locked condition, IP6K9K acc. to ISO 20653</p> 		09 15 503 0901		
<p>Han® F+B, Bulkhead mounted housing, Angled, With three through holes for fixing screws, Blue, IP67 locked condition, IP6K9K acc. to ISO 20653</p> 		09 15 513 0901		
<p>Han® F+B, Cable to cable housing, Top entry, Black, IP67 locked condition, IP6K9K acc. to ISO 20653</p> 	1x M25	19 15 503 1701		
<p>Han® F+B, Cable to cable housing, Top entry, Blue, IP67 locked condition, IP6K9K acc. to ISO 20653</p> 	1x M25	19 15 513 1701		

Han  
F+B

Identification	Cable entry	Part number	Drawing (dimensions in mm)
<p>Han® F+B, Protection cover, for hoods, Black, IP67 locked condition, IP6K9K acc. to ISO 20653</p> 		09 15 503 5411	
<p>Han® F+B, Protection cover, for hoods, Blue, IP67 locked condition, IP6K9K acc. to ISO 20653</p> 		09 15 513 5411	
<p>Han® F+B, Protection cover, for bulkhead mounted housings, for cable to cable housing, With fixing cord, IP67 locked condition, IP6K9K acc. to ISO 20653</p> 		09 15 503 5401	
<p>Han® F+B, Protection cover, for bulkhead mounted housings, for cable to cable housing, With fixing cord, Blue, IP67 locked condition, IP6K9K acc. to ISO 20653</p> 		09 15 513 5401	

Number of contacts

**12+**

2x 2x AWG 22 2x 0.75 mm<sup>2</sup> 2x 1.5 mm<sup>2</sup> 5G 2.5 mm<sup>2</sup>

Female Hood

4x Data

4x Signal

10 A 250 V 4 kV 3

4x Power

20 A 400 V 6 kV 3



Han  
F+B

## Technical characteristics

Number of contacts	12
Number of power contacts	4
Number of signal contacts	4
Number of data contacts	4
Number of cores	13
Core structure	2x 2x AWG 22 2x 0.75 mm <sup>2</sup> 2x 1.5 mm <sup>2</sup> 5G 2.5 mm <sup>2</sup>
Connector 1	Female Hood
Rated current (signal)	10 A
Rated voltage (signal)	250 V
Rated impulse voltage (signal)	4 kV
Pollution degree (signal)	3
Rated current (power)	20 A
Rated voltage (power)	400 V
Rated impulse voltage (power)	6 kV
Pollution degree (power)	3
Transmission characteristics	Cat. 5, Class D up to 100 MHz
Data rate	10 Mbit/s, 100 Mbit/s
Limiting temperature	-40 ... +90 °C unmoved -30 ... +90 °C moved

## Technical characteristics


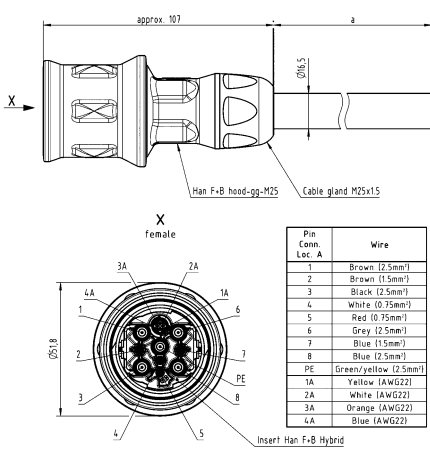
Degree of protection acc. to IEC	IP69
60529	
Cable diameter	16.5 mm
Minimum bending radius	10x Cable diameter, (repeated bending)
Material (cable)	Polyolefin copolymer
Colour (cable)	Black

## Specifications and approvals

Ecolab Topactive 200  
Ecolab Topactive 500  
Ecolab Topax 66  
Ecolab Topax 990  
Ecolab Topactive OKTO

## Details

Other cable lengths on request!

Identification	Cable length	Part number	Drawing (dimensions in mm)																												
Han® F+B, Hybrid cable (copper/copper), Cable assemblies, Pre-assembled on one side, IP69 	5 m 7.5 m 10 m	33 50 300 0140 050 33 50 300 0140 075 33 50 300 0140 100	 <table border="1" data-bbox="1276 1601 1428 1803"> <thead> <tr> <th>Pin Conn. Loc. A</th> <th>Wire</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Brown (2.5mm<sup>2</sup>)</td> </tr> <tr> <td>2</td> <td>Brown (1.5mm<sup>2</sup>)</td> </tr> <tr> <td>3</td> <td>Black (2.5mm<sup>2</sup>)</td> </tr> <tr> <td>4</td> <td>White (0.75mm<sup>2</sup>)</td> </tr> <tr> <td>5</td> <td>Red (0.75mm<sup>2</sup>)</td> </tr> <tr> <td>6</td> <td>Grey (2.5mm<sup>2</sup>)</td> </tr> <tr> <td>7</td> <td>Blue (1.5mm<sup>2</sup>)</td> </tr> <tr> <td>8</td> <td>Blue (2.5mm<sup>2</sup>)</td> </tr> <tr> <td>PE</td> <td>Green/yellow (2.5mm<sup>2</sup>)</td> </tr> <tr> <td>1A</td> <td>Yellow (AWG22)</td> </tr> <tr> <td>2A</td> <td>White (AWG22)</td> </tr> <tr> <td>3A</td> <td>Orange (AWG22)</td> </tr> <tr> <td>4A</td> <td>Blue (AWG22)</td> </tr> </tbody> </table>	Pin Conn. Loc. A	Wire	1	Brown (2.5mm <sup>2</sup> )	2	Brown (1.5mm <sup>2</sup> )	3	Black (2.5mm <sup>2</sup> )	4	White (0.75mm <sup>2</sup> )	5	Red (0.75mm <sup>2</sup> )	6	Grey (2.5mm <sup>2</sup> )	7	Blue (1.5mm <sup>2</sup> )	8	Blue (2.5mm <sup>2</sup> )	PE	Green/yellow (2.5mm <sup>2</sup> )	1A	Yellow (AWG22)	2A	White (AWG22)	3A	Orange (AWG22)	4A	Blue (AWG22)
Pin Conn. Loc. A	Wire																														
1	Brown (2.5mm <sup>2</sup> )																														
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1A	Yellow (AWG22)																														
2A	White (AWG22)																														
3A	Orange (AWG22)																														
4A	Blue (AWG22)																														

Number of contacts

**12+**

2x 2x AWG 22 2x 0.75 mm<sup>2</sup> 2x 1.5 mm<sup>2</sup> 5G 2.5 mm<sup>2</sup>  
 Male Bulkhead mounted housing  
 4x Data  
 4x Signal  
 10 A 250 V 4 kV 3  
 4x Power  
 20 A 400 V 6 kV 3



## Technical characteristics

Number of contacts	12
Number of power contacts	4
Number of signal contacts	4
Number of data contacts	4
Number of cores	13
Core structure	2x 2x AWG 22 2x 0.75 mm <sup>2</sup> 2x 1.5 mm <sup>2</sup> 5G 2.5 mm <sup>2</sup>
Connector 1	Male Bulkhead mounted housing
Rated current (signal)	10 A
Rated voltage (signal)	250 V
Rated impulse voltage (signal)	4 kV
Pollution degree (signal)	3

## Technical characteristics

Rated current (power)	20 A
Rated voltage (power)	400 V
Rated impulse voltage (power)	6 kV
Pollution degree (power)	3
Transmission characteristics	Cat. 5, Class D up to 100 MHz
Data rate	10 Mbit/s, 100 Mbit/s
Cable diameter	16.5 mm
Minimum bending radius	10x Cable diameter, (repeated bending)

## Details

Other cable lengths on request!

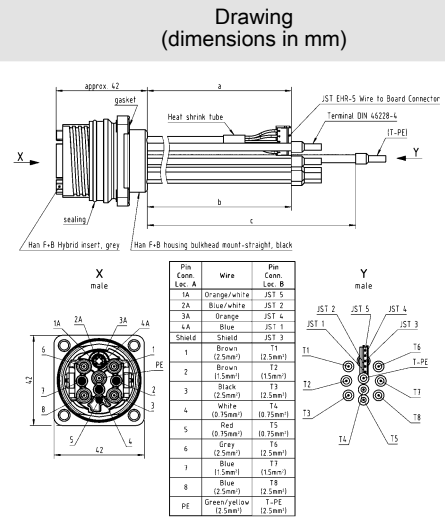
Identification Cable length Part number Drawing (dimensions in mm)

Han® F+B,  
Hybrid cable (copper/copper),  
Cable assemblies,  
Pre-assembled on one side



0.3 m  
0.5 m

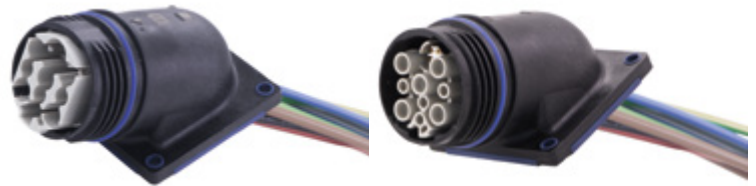
33 50 319 9141 003  
33 50 319 9141 005



Number of contacts

# 12+

2x 2x AWG 22 2x 0.75 mm<sup>2</sup> 2x 1.5 mm<sup>2</sup> 5G 2.5 mm<sup>2</sup>  
 Bulkhead mounted housing Angled RJ45 Male  
 4x Data  
 4x Signal  
 10 A 250 V 4 kV 3  
 4x Power  
 20 A 400 V 6 kV 3



Han  
F+B

## Technical characteristics

Number of contacts	12
Number of power contacts	4
Number of signal contacts	4
Number of data contacts	4
Number of cores	13
Core structure	2x 2x AWG 22 2x 0.75 mm <sup>2</sup> 2x 1.5 mm <sup>2</sup> 5G 2.5 mm <sup>2</sup>
Connector 1	Bulkhead mounted housing, Angled RJ45, Male RJ45, Female
Rated current (signal)	10 A
Rated voltage (signal)	250 V
Rated impulse voltage (signal)	4 kV

## Technical characteristics

Pollution degree (signal)	3
Rated current (power)	20 A
Rated voltage (power)	400 V
Rated impulse voltage (power)	6 kV
Pollution degree (power)	3
Transmission characteristics	Cat. 5, Class D up to 100 MHz
Data rate	10 Mbit/s, 100 Mbit/s
Cable diameter	16.5 mm
Minimum bending radius	10x Cable diameter, (repeated bending)

## Details

Other cable lengths on request!

Identification

Han® F+B,  
Hybrid cable (copper/copper),  
Cable assemblies,  
Pre-assembled on one side



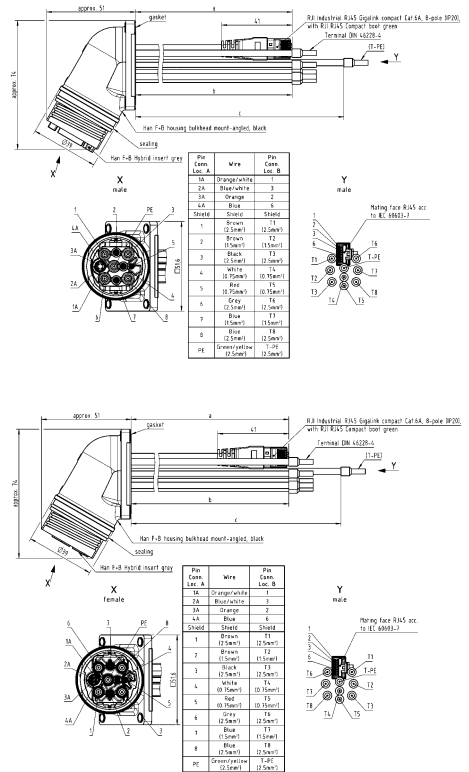
Cable length

1 m  
1 m

Part number

33 50 389 8141 010  
33 50 399 8141 010

Drawing  
(dimensions in mm)



Number of contacts

**12+**

2x 2x AWG 22 2x 0.75 mm<sup>2</sup> 2x 1.5 mm<sup>2</sup> 5G 2.5 mm<sup>2</sup>

Han® F+B Male Straight

Han® F+B Female Straight

4x Data

4x Signal

10 A 250 V 4 kV 3

4x Power

20 A 400 V 6 kV 3



## Technical characteristics

Number of contacts	12
Number of power contacts	4
Number of signal contacts	4
Number of data contacts	4
Number of cores	13
Core structure	2x 2x AWG 22 2x 0.75 mm <sup>2</sup> 2x 1.5 mm <sup>2</sup> 5G 2.5 mm <sup>2</sup>
Connector 1	Han® F+B Male, Straight
Connector 2	Han® F+B Female, Straight
Rated current (signal)	10 A
Rated voltage (signal)	250 V
Rated impulse voltage (signal)	4 kV
Pollution degree (signal)	3
Rated current (power)	20 A
Rated voltage (power)	400 V
Rated impulse voltage (power)	6 kV
Pollution degree (power)	3
Transmission characteristics	Cat. 5, Class D up to 100 MHz
Data rate	10 Mbit/s, 100 Mbit/s

## Technical characteristics


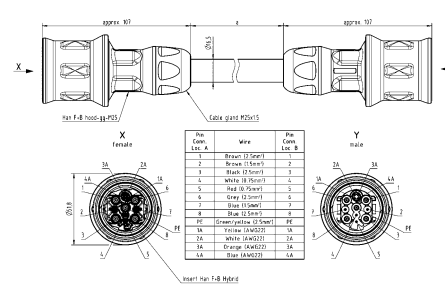
Limiting temperature	-40 ... +90 °C unmoved -30 ... +90 °C moved
Degree of protection acc. to IEC	IP69
60529	
Cable diameter	16.5 mm
Minimum bending radius	10x Cable diameter, (repeated bending)
Material (cable)	Polyolefin copolymer
Colour (cable)	Black

## Specifications and approvals

Ecolab Topactive 200  
Ecolab Topactive 500  
Ecolab Topax 66  
Ecolab Topax 990  
Ecolab Topactive OKTO

## Details

Other cable lengths on request!


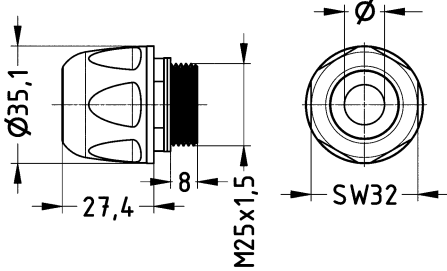

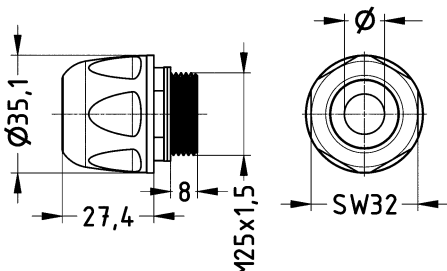
Identification	Cable length	Part number	Drawing (dimensions in mm)
<p>Han® F+B, Hybrid cable (copper/copper), Cable assemblies, Pre-assembled on both sides, IP69</p> 	<p>2.5 m 5 m 7.5 m 10 m</p>	<p>33 50 303 7140 025 33 50 303 7140 050 33 50 303 7140 075 33 50 303 7140 100</p>	

## Technical characteristics

Limiting temperature	-40 ... +100 °C
Degree of protection acc. to IEC 60529	IP67 / IP69
Colour (seal)	Blue
Material (cable glands)	Polyamide (PA)
Material (accessories)	VA 1.4305
Colour (accessories)	Black White
RoHS	compliant with exemption

## Specifications and approvals

Ecolab Topactive 200  
 Ecolab Topactive 500  
 Ecolab Topax 66  
 Ecolab Topactive OKTO  
 Ecolab Topax 990  
 FDA 21 CFR 177.1500  
 FDA 21 CFR 176.170 (c)  
 FDA 21 CFR 177.1390  
 FDA 21 CFR 177.1395  
 FDA 21 CFR 177.2600

Identification	Size	Clamping range (mm)	Part number	Drawing (dimensions in mm)
Han® F+B, Cable gland, Black, IP67 / IP69 Pack contents: With spacing washer 	M25 M25 M25	11 ... 13 13 ... 16 16 ... 18	19 15 503 5196 19 15 503 5197 19 15 503 5199	
Han® F+B, Cable gland, White, IP67 / IP69 Pack contents: With spacing washer 	M25 M25 M25	11 ... 13 13 ... 16 16 ... 18	19 15 523 5196 19 15 523 5197 19 15 523 5199	

Identification

Part number

Assembly tool,  
Han® F+B,  
Cable gland

09 99 000 0984



Removal tool,  
Han® F+B,  
for circular inserts

09 99 000 0997





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