Contents

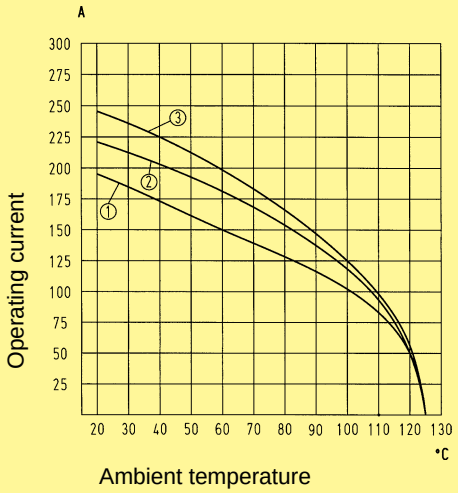
Features

- Only to be used with Han® 24 HPR special hoods and housings (see page 14.04)
- The ideal connector for transmission of high currents requiring little space
- The vertical and angled versions offer solutions for almost all applications
- The angled versions offer a space-saving 90° cable wiring

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 according to DIN EN 60 512-5-2



① Wire gauge 35 mm²

② Wire gauge 50 mm²

③ Wire gauge 70 mm²

Technical characteristics

Specifications	DIN EN 61 984 DIN EN 60 664-1

Inserts

Number of contacts	3, 3/2 + PE
Electrical data acc. to EN 61 984	
Power area	**200 A 1150/2000 V 8 kV 3**
Rated current	200 A
Rated voltage conductor - ground	1150 V
Rated voltage conductor - conductor	2000 V
Rated impulse voltage	8 kV
Pollution degree	3
Pollution degree 2 also	200 A 2000 V 12 kV 2
Signal area	**16 A 400 V 6 kV 3**
Rated current	16 A
Rated voltage	400 V
Rated impulse voltage	6 kV
Pollution degree	3
Pollution degree 2 also	16 A 500 V 6 kV 2
Insulation resistance	≥ 10^{10} Ω
Material	polycarbonate
Limiting temperatures	-40 °C ... +125 °C
Flammability acc. to UL 94	V 0
Mechanical working life	
- mating cycles	≥ 500

Contacts

Material	copper alloy
Surface	silver
Contact resistance	≤ 0.2 mΩ
Axial screw termination	
Power contacts	
- Wire gauge[1)]	35 ... 70 mm²
- AWG	2 ... 00
- Hexagonal driver	SW 5, 09 99 000 0371, Page 99.13
- Stripping length	22 mm
- Tightening torque	

mm²	35	50	70
Nm	8	9	10

PE contact (only Han® K 3/2)	
- Wire gauge[1)]	16 ... 35 mm²
- AWG	5 ... 2
- Hexagonal driver	SW 4, 09 99 000 0370, Page 99.13
- Stripping length	14 mm
- Tightening torque	6 Nm
Signal contact (only Han® K 3/2)	
- Wire gauge[1)]	2.5 mm²
- AWG	14
- Stripping length	7 mm
- Tightening torque	0.5 Nm

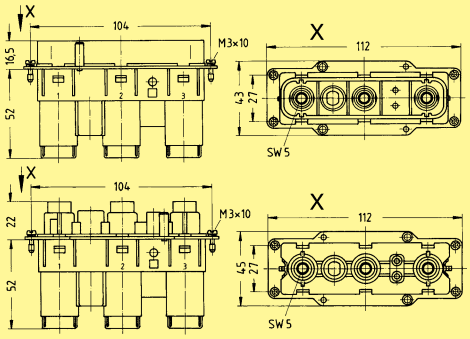
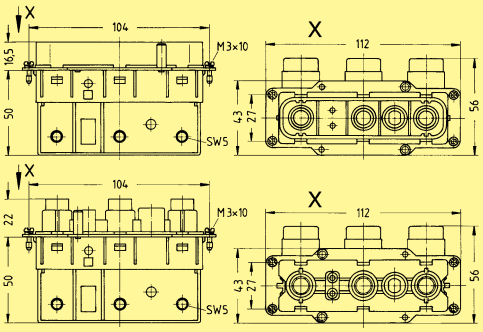
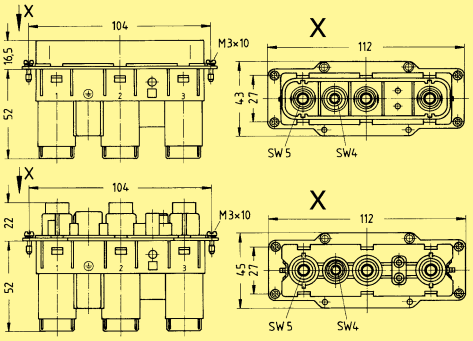
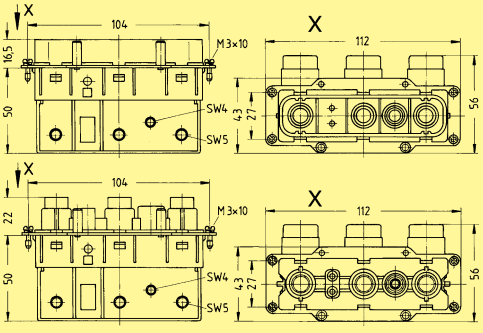
Hoods/Housings

For technical details see chapter 31

[1)] geometric wire gauge

Number of contacts

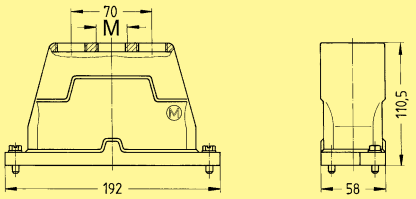
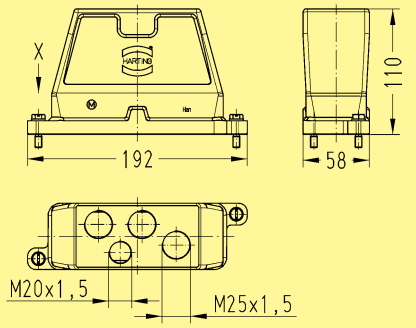
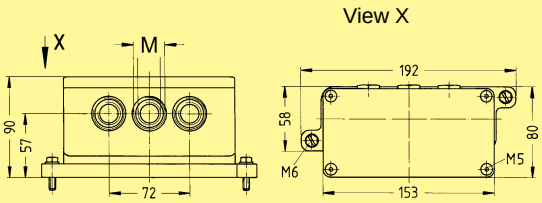
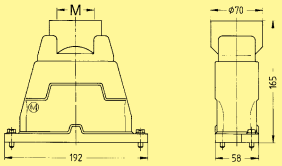
3/0 without ⏚
3/2 with ⏚

Identification	Series	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Axial screw terminal straight	Han® K				
	3/0	09 38 005 2621	09 38 005 2721		
angled					
	3/0	09 38 005 2622	09 38 005 2722		Distance for contact max. 21 mm
Axial screw terminal straight	Han® K				
	3/2	09 38 005 2601	09 38 005 2701		
angled					
	3/2	09 38 005 2602	09 38 005 2702		Distance for contact max. 21 mm

Han HC Modular

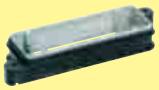
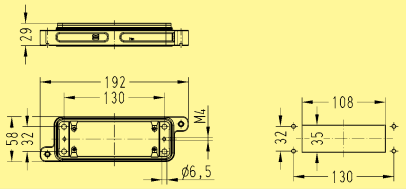
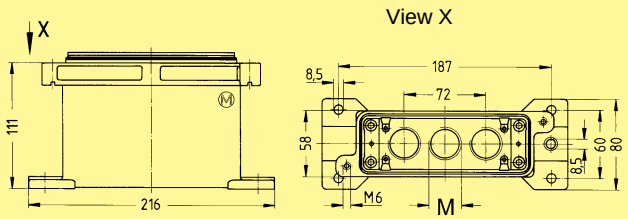
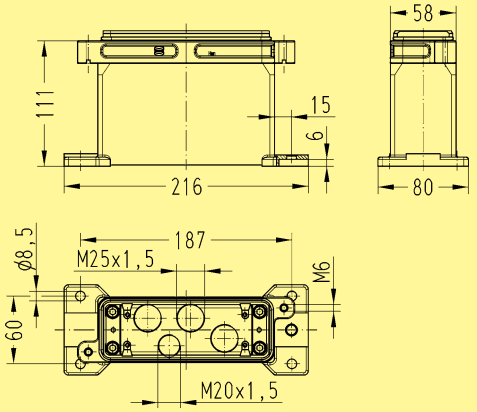
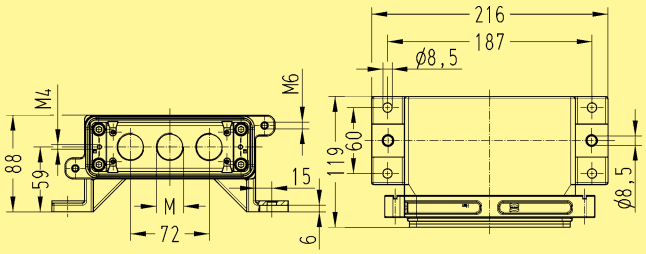
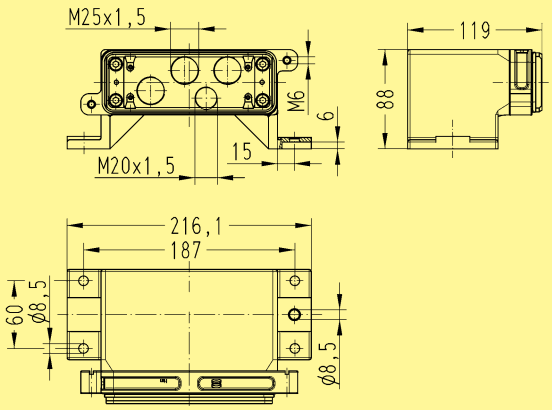
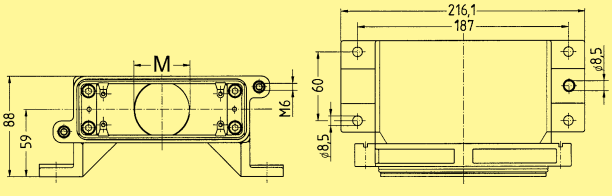
Stock items in bold type

Special hood/housing for Han® K 3/0, Han® K 3/2

Identification	Part number	M	Drawing	Dimensions in mm
Hoods top entry 	19 40 024 0461	3 x 25		
top entry 	19 40 024 0471	3 x 25 1 x 20		
angled entry 	19 40 024 0631	3 x 25		
top entry 	19 40 024 0420	1 x 63		

Stock items in bold type

Special hood/housing for Han® K 3/0, Han® K 3/2

Identification	Part number	M	Drawing	Dimensions in mm
Housings, bulkhead mounting 	**09 40 024 0311**			
Housings, surface mounting straight version 	19 40 024 1231	3 x 25		
straight version 	19 40 024 1271	3 x 25 1 x 20		
horizontal version 	**19 40 024 0931**	3 x 25		
horizontal version 	**19 40 024 0971**	3 x 25 1 x 20		
horizontal version 	19 40 024 0914	1 x 50		

Han HC Modular

Stock items in bold type

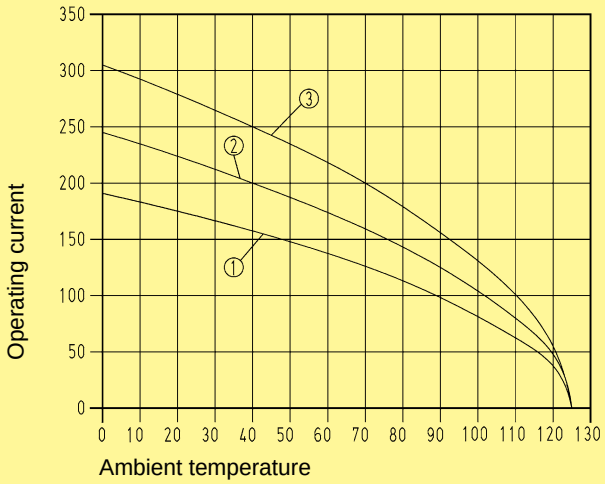
Features

- Crimp termination
- Designed for thick cable insulations
- For crimp dies acc. to DIN 46 235
- For crimping tools with 13 t pressing force

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 according to DIN EN 60 512-5-2



① Wire gauge 35 mm²
② Wire gauge 50 mm²
③ Wire gauge 70 mm²

Technical characteristics

Specifications	DIN EN 60 664-1 DIN EN 61 984 EN 50 124-1

Inserts

Electrical data acc. to DIN EN 61 984	
Rated current	250 A
Rated voltage	2000 V
Rated impulse voltage	12 kV
Pollution degree	3
Insulation resistance	≥ 10^{10} Ω
Material	polycarbonate
Limiting temperatures	-40 °C ... +125 °C
Flammability acc. to UL 94	V 0
Mechanical working life	≥ 500 mating cycles

Contacts

Power contacts	
Material	Copper alloy
Surface	
- hard-silver plated	3 µm Ag
Contact resistance	≤ 0.3 mΩ
Crimp terminal	
- mm²	35 … 70 mm²
Max. insulation diameter	18 mm
Crimp dies	acc. to DIN 46 325
Pressing force requirement	130 kN

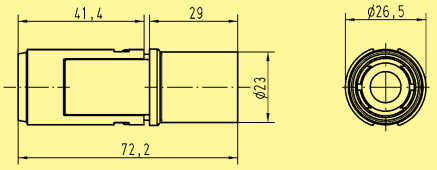
Hoods/Housings

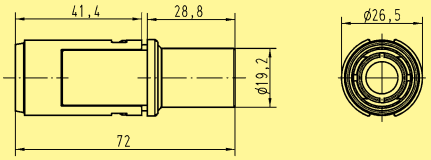
For technical details see chapter 31

Frame

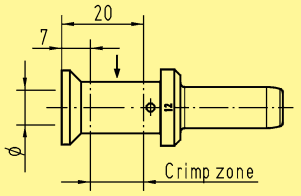
Tightening torque of the fixing screws	0.5 Nm
Material	stainless steel

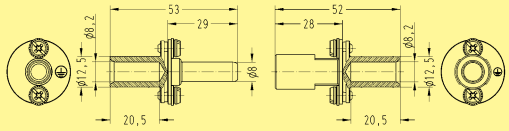
Identification	Part-Number Male insert (M)	Part-Number Female insert (F)	Drawings	Dimensions in mm
Han® HC Modular 250 Crimp terminal	09 11 001 3021	09 11 001 3121	M F	





Identification	Wire gauge mm²	Part-Number Male contacts (M)	Part-Number Female contacts (F)	Drawings	Dimensions in mm
Crimp contacts* Silver plated	35	09 11 000 6127	09 11 000 6227		
	50	09 11 000 6128	09 11 000 6228		
	70	09 11 000 6129	09 11 000 6229		
PE crimp contacts	35	09 11 000 6104	09 11 000 6204		
Tools		09 99 000 0332	09 99 000 0332		

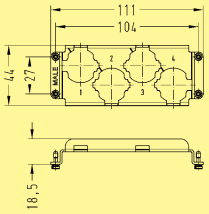
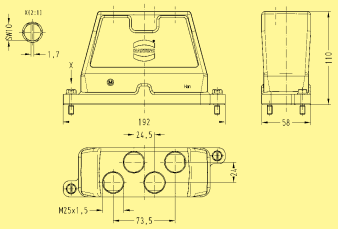
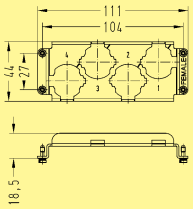
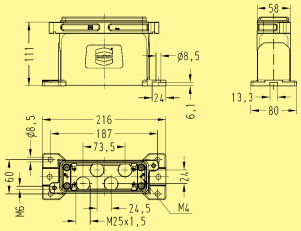
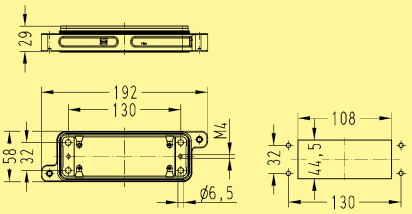
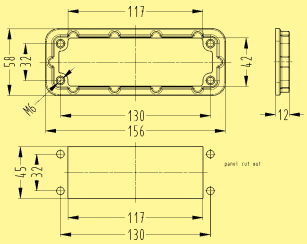




Wire gauge	Tool identification	Stripping length	Ø
35 mm² 50 mm² 70 mm²	12 14 16	22 mm 22 mm 22 mm	8,45 mm 10,25 mm 11,75 mm
* for stranded wire acc. to IEC 60 228 class 5			

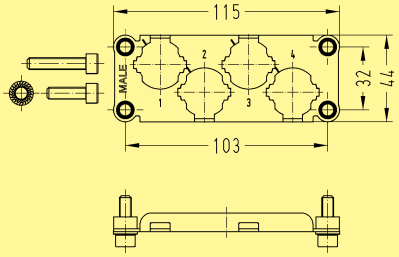
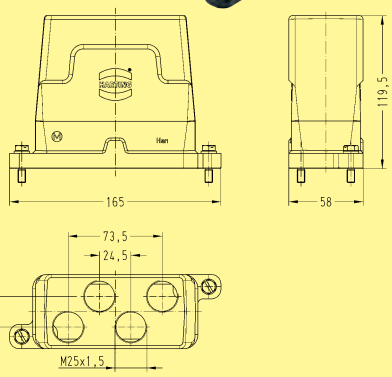
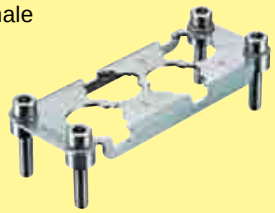
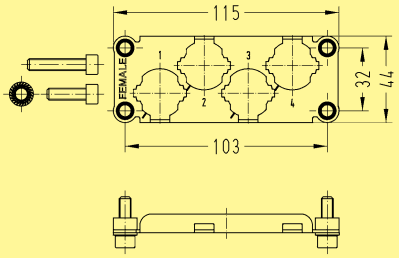
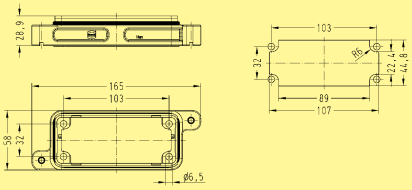
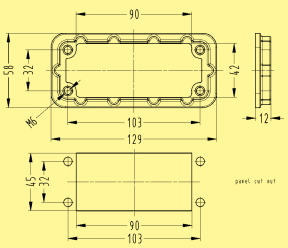
Han HC Modular

* Crimp zone acc. to DIN EN 46 235

Frame	Part number	Hoods/Housings	M	Part number
4 poles, male  	09 11 000 9925	Hoods Han® HPR 24 B  	4 x 20 4 x 25	19 40 024 0473 19 40 024 0474
4 poles, female  	09 11 000 9926	Housings, surface mounting Han® HPR 24 B  	4 x 25	**19 40 024 1242**
		Housings, bulkhead mounting* Han® HPR 24 B  	–	**09 40 024 0311**
Mounting frame Han® HPR 24 B  	**09 40 000 9955**			

* HPR mounting frames of appropriate size from chapter 31 are not fitting for compatibility

Stock items in bold type

Frame	Part number	Hoods/Housings	M	Part number
4 poles, male  	09 11 000 9937	Hood Han® 16 HPR enlarged  	4 x 25	19 40 016 0478
4 poles, female  	09 11 000 9938	Housing, bulkhead mounting* Han® 16 HPR enlarged  	–	09 40 016 0368
Mounting frame Han® 16 HPR  	**09 40 000 9956**			

* HPR mounting frames of appropriate size from chapter 31 are not fitting for compatibility

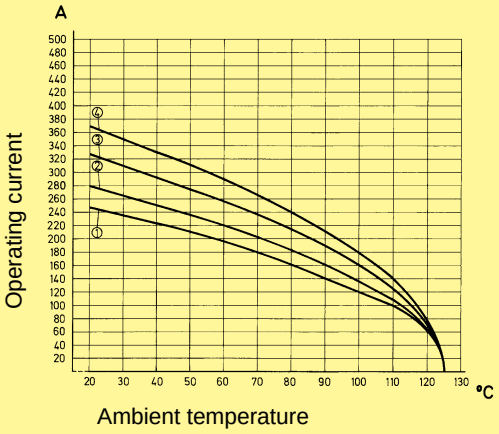
Stock items in bold type

Current carrying capacity

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 according to DIN EN 60 512-5-2



① Wire gauge 50 mm²
② Wire gauge 70 mm²
③ Wire gauge 95 mm²
④ Wire gauge 120 mm²

three contacts in Han® 24 HPR

Technical characteristics

Specifications	DIN EN 60 664-1 DIN EN 61 984
Approvals	,

Inserts

Number of contacts	1, 2, 3 or 3 + PE
Electrical data acc. to EN 61 984	
without adapter	**350 A 2000 V 12 kV 3**
Rated current	350 A
Rated voltage	2000 V
Rated impulse voltage	12 kV
Pollution degree	3
with adapter	**350 A 4000 V 18 kV 3**
Rated current	350 A
Rated voltage	4000 V
Rated impulse voltage	18 kV
Pollution degree	3
Insulation resistance	≥ 10^{10} Ω
Material	polyamide
Limiting temperatures	-40 °C ... +125 °C
Flammability acc. to UL 94	V 0
Mechanical working life	
- mating cycles	≥ 500

Contacts

Material	copper alloy
Surface	silver
Contact resistance	≤ 0.2 mΩ
Axial screw termination	
- Wire gauge[1)]	35 ... 120 mm²
- AWG	1 ... 0000
- Stripping length	19 ... 20 mm
- Max. cable diameter	19.5 mm

mm²	35	50	70	95	120
Nm	8	10	12	14	16

- Tightening torque

Screw terminal	
- Thread	M 10
- Wrench size	SW 17
- Tightening torque	14 Nm

Hoods/Housings

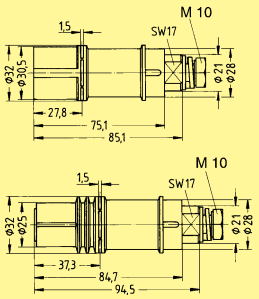
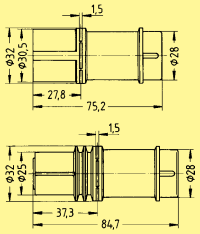
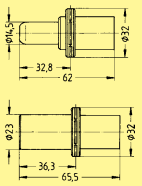
For technical details see chapter 31

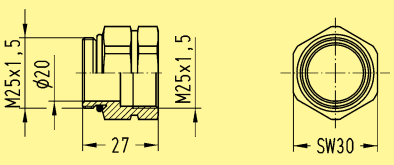
Frame

Tightening torque of the fixing screws	0.5 Nm
Tightening torque of the cross-tying screws on the frame for 4 poles	1.5 Nm
Material	stainless steel

[1)] geometric wire gauge

Modular
High Current Connector System

Identification	Part number Male contact	Female contact	Wire gauge	Drawing	Dimensions in mm
Contacts with Screw terminal for housing bulkhead mounting	09 11 001 2655	**09 11 001 2755**	for cable lug up to max. 120 mm²		
with Axial screw termination	**09 11 001 2651** **09 11 001 2652**	**09 11 001 2751** 09 11 001 2752	35 ... 70 mm² 95 ... 120 mm²		
PE contact with Axial screw termination	09 11 000 6156	09 11 000 6256	35 ... 70 mm²		
Hexagonal driver Adapter (SW 5)	**09 99 000 0371**				

Identification	Part number	M	SW	Drawing	Dimensions in mm
Hexagonal adapter metal version with O-Ring	19 36 000 5134 19 36 000 5135	25 32	30 40		

Han HC Modular

Stock items in bold type

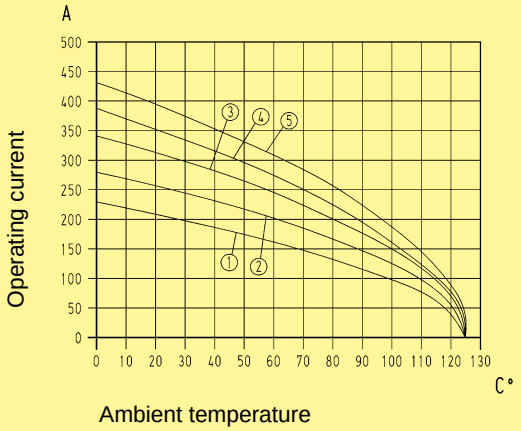
Features

- Crimp termination
- Compatible to Han® HC Modular 350 axial screw termination
- Designed for thick cable insulations
- For crimp dies according to DIN 46 235

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 according to DIN EN 60 512-5-2



Wire gauge

① 35 mm²
② 50 mm²
③ 70 mm²
④ 95 mm²
⑤ 120 mm²

Technical characteristics

Specifications	DIN EN 60 664-1 DIN EN 61 984
Approvals	GL

Inserts

Number of contacts	1, 2, 3 or 3 + PE
Electrical data acc. to EN 61 984	
without adapter	**350 A 2000 V 12 kV 3**
Rated current	350 A
Rated voltage	2000 V
Rated impulse voltage	12 kV
Pollution degree	3
with adapter	**350 A 4000 V 18 kV 3**
Rated current	350 A
Rated voltage	4000 V
Rated impulse voltage	18 kV
Pollution degree	3
Insulation resistance	≥ 10^{10} Ω
Material	polyamide
Limiting temperatures	-40 °C ... +125 °C
Flammability acc. to UL 94	V 0
Mechanical working life	
- mating cycles	≥ 500

Contacts

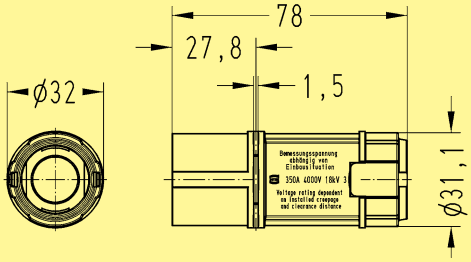
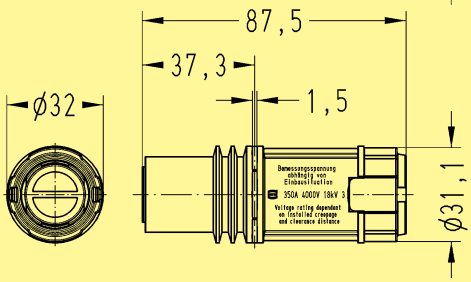
Material	copper alloy
Surface	
- hard-silver plated	3 µm Ag
Contact resistance	≤ 0,3 mΩ
Crimp terminal	
- mm²	35 ... 120 mm²
Max. insulation diameter	22 mm
Crimp dies	acc. to DIN 46 235
Pressing force requirement	130 kN

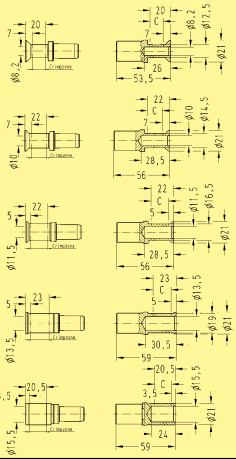
Hoods/Housings

For technical details see chapter 31

Frame

Tightening torque of the fixing screws	0,5 Nm
Tightening torque of the cross-tying screws on the frame for 4 poles	1,5 Nm
Material	stainless steel

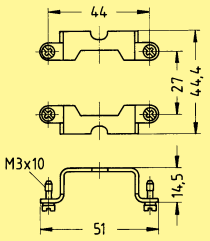
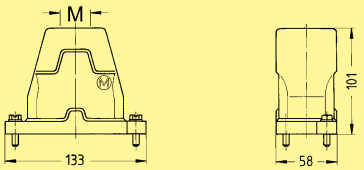
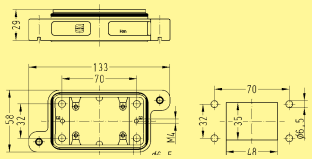
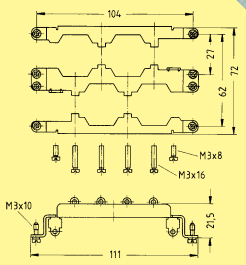
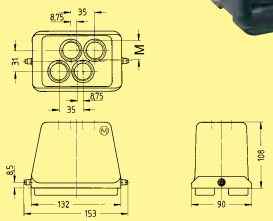
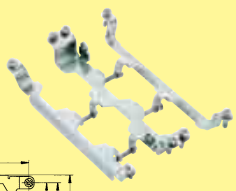
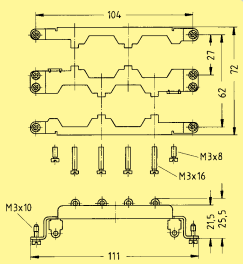
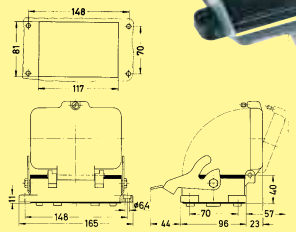
Identification	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Han® HC Modular 350 Crimp terminal 	**09 11 001 3001**	**09 11 001 3101**	M  F 	

Identification	Wire gauge (mm²)	Part number Male contact	Part number Female contact	Drawing	Dimensions in mm
Crimp contacts* silver plated					
	35	**09 11 000 6140**	**09 11 000 6240**		
	50	**09 11 000 6141**	**09 11 000 6241**		
	70	**09 11 000 6142**	**09 11 000 6242**		
	95	**09 11 000 6143**	**09 11 000 6243**		
	120	**09 11 000 6144**	**09 11 000 6244**		

Wire gauge	∅	Stripping length
35 mm²	8,2	26 mm
50 mm²	10	28 mm
70 mm²	11,5	28 mm
95 mm²	13,5	30 mm
120 mm²	15,5	24 mm
for stranded wire according to IEC 60 228 Class 5		

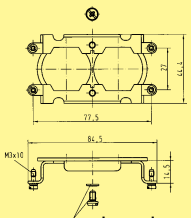
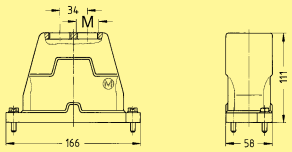
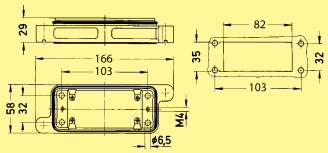
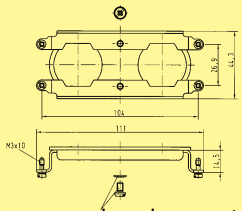
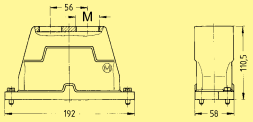
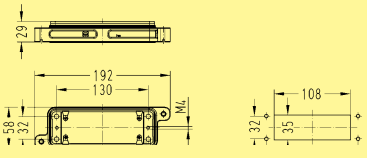
* Crimp zone acc. to EN 46 235

Stock items in bold type

Frame	Part number	Hoods/Housings	M	Part number
1 pole  	09 11 000 9951	Hoods Han® HPR 6 B  	25 32	**19 40 006 0411** **19 40 006 0412**
		Housings, bulk-head mounting Han® HPR 6 B  		**09 40 006 0311**
4 poles  	09 11 000 9954	Hoods Han® M 48 B  	4 x 25	**19 37 048 0401**
4 poles  	09 11 000 9955	Housings, bulk-head mounting Han® M 48 B  		**09 37 048 0301**

Han HC Modular

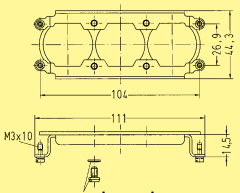
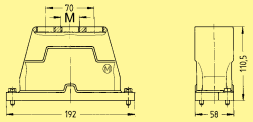
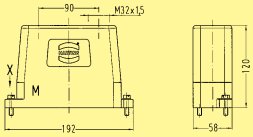
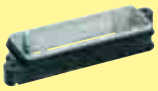
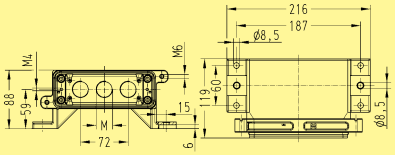
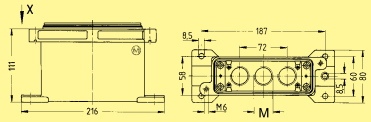
Stock items in bold type

Frame	Part number	Hoods/Housings	M	Part number
2 poles   enclosed separately	09 11 000 9952	Hoods Han® HPR 16 B  	2 x 25	19 40 016 0431
		Housings, bulk-head mounting Han® HPR 16 B  		**09 40 016 0311**
2 poles   enclosed separately	09 11 000 9956	Hoods Han® HPR 24 B  	2 x 32	**19 40 024 0432**
		Housings, bulk-head mounting Han® HPR 24 B  		**09 40 024 0311**

Han HC Modular

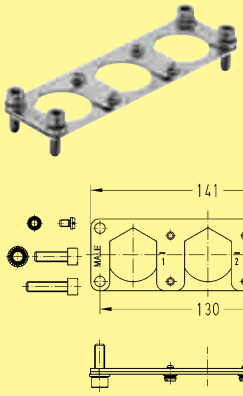
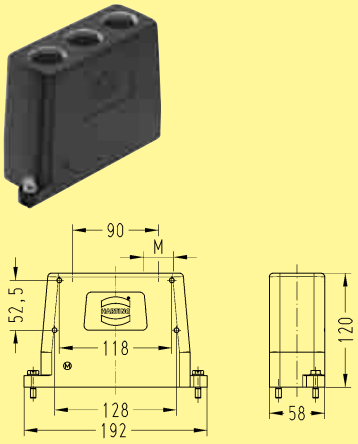
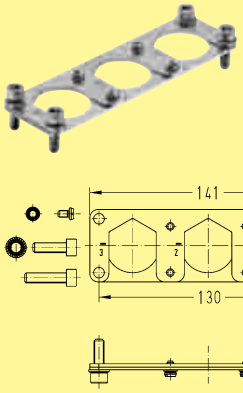
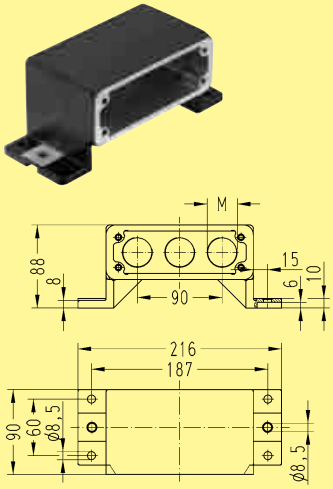
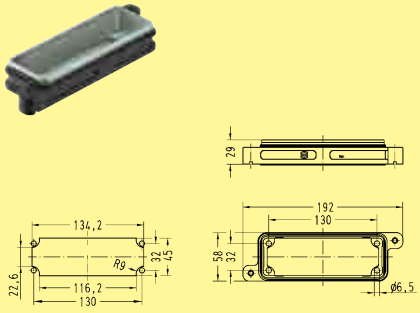
* A working voltage of 4000 V is only possible to realize by using a hexagonal adapter and the HARTING cable gland, in order to realize the clearance and creepage distance according to DIN EN 60 664-1.

Stock items in bold type

Frame	Part number	Hoods/Housings	M	Part number
3 poles   enclosed separately	09 11 000 9963	Hoods Han® HPR 24 B  	3 x 25	**19 40 024 0461**
		Hoods Han® HPR 24 B  	3 x 32	19 40 024 0467
		Housings, bulkhead mounting Han® HPR 24 B  Drawing see page 14.17		**09 40 024 0311**
		Housings, surface mounting Han® HPR 24 B horizontal version  	3 x 25	**19 40 024 0931**
		Housings, surface mounting Han® HPR 24 B straight version  	3 x 25	19 40 024 1231

* A working voltage of 4000 V is only possible to realize by using a hexagonal adapter and the HARTING cable gland, in order to realize the clearance and creepage distance according to DIN EN 60 664-1.

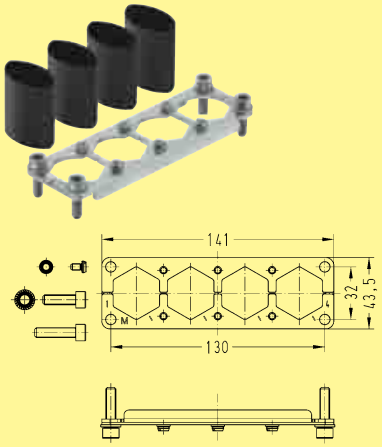
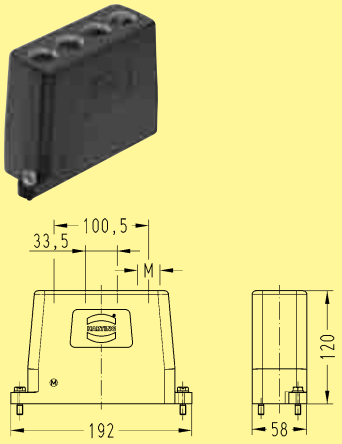
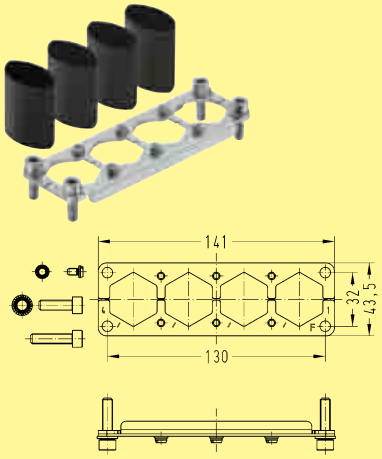
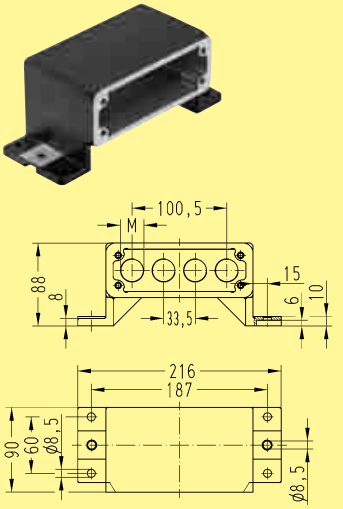
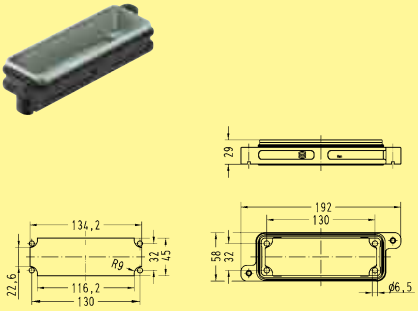
Stock items in bold type

Frame	Part number	Hoods/Housings	M	Part number
3 poles, male 	09 11 000 9957	Hoods* Han® 24 HPR enlarged 	3x 32	19 40 024 0468
3 poles, female 	09 11 000 9958	Housings, surface mounting Han® 24 HPR enlarged, horizontal version  Required housing, bulkhead mounting, 09 40 024 0368 not included, must be ordered separately	3x 32	19 40 024 0968
		Housings, bulkhead mounting Han® 24 HPR enlarged 		09 40 024 0368

Han HC Modular

* A working voltage of 4000 V is only possible to realize by using a hexagonal adapter and the HARTING cable gland, in order to realize the clearance and creepage distance according to DIN EN 60 664-1.

Stock items in bold type

Frame	Part number	Hoods/Housings	M	Part number
4 poles, male 	09 11 000 9964	Hoods* Han® 24 HPR enlarged 	4x 25	19 40 024 0478
4 poles, female 	09 11 000 9965	Housings, surface mounting Han® 24 HPR enlarged, horizontal version  Required housing, bulkhead mounting, 09 40 024 0368 not included, must be ordered separately	4x 25	19 40 024 0978
		Housings, bulkhead mounting Han® 24 HPR enlarged 		09 40 024 0368

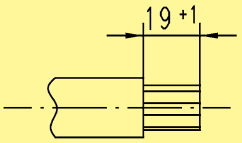
Han HC Modular

* A working voltage of 4000 V is only possible to realize by using a hexagonal adapter and the HARTING cable gland, in order to realize the clearance and creepage distance according to DIN EN 60 664-1.

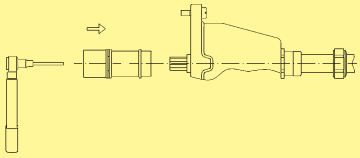
Stock items in bold type

Assembly instructions

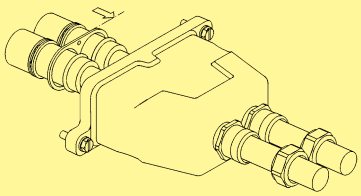
Remarks on the axial screw termination see chapter 00



Step 1: The outer diameter of the cable must not exceed 19.5 mm.
Strip the cable by 19 mm.

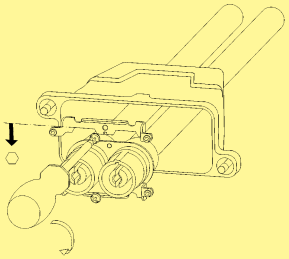


Insert the cable through hood.



Step 2: Press the Han NC contact on the cable strand and apply tightening torque according table 1 by using a tightening torques tool. Take care that all cable strands fit completely inside the contact termination cavity. During assembling adhere the cable and the contact to minimise axial movement or twisting.

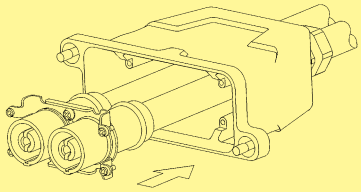
Step 3: Move the perforated plate D across the HC contacts.

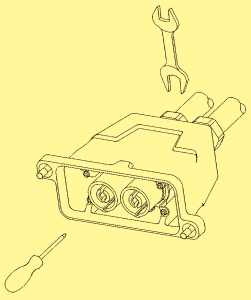


Step 4: Fit frame E onto the hexagon shape of the HC contact. Coding can be arranged by turning the contact within 60° steps. Bolt the frame E together with perforated plate D.

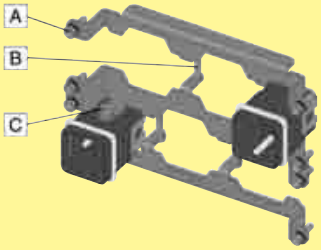
Step 5: Push back the packet inside the good.

Step 6: Tighten the four M3 (tightening torque 0.5 Nm) screws and the cable gland according manufacturer recommendation.





During the assembly of the frame for 4 poles the following tightening torques have to be taken into consideration:
A = 0.5 Nm
B = 1.5 Nm
C = 0.25 Nm

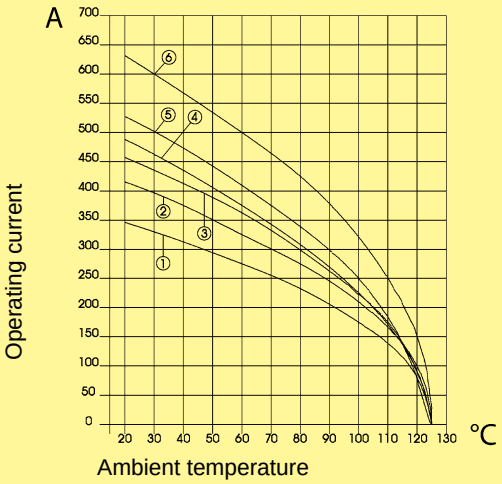


Current carrying capacity

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 according to DIN EN 60 512-5-2



① Wire gauge 70 mm²
② Wire gauge 95 mm²
③ Wire gauge 120 mm²
④ Wire gauge 150 mm²
⑤ Wire gauge 185 mm²
⑥ Wire gauge 240 mm²

with cable SHXAFO1x240, 4 kV

Technical characteristics

Specifications	DIN EN 60 664-1 DIN EN 61 984
Approvals	

Inserts

Number of contacts	1, 2
Electrical data acc. to EN 61 984	**650 A 4000 V 18 kV 3**
Rated current	650 A
Rated voltage	4000 V
Rated impulse voltage	18 kV
Pollution degree	3
Insulation resistance	≥ 10^{10} Ω
Material	polyamide
Limiting temperatures	-40 °C ... +125 °C
Flammability acc. to UL 94	V 0
Mechanical working life	
- mating cycles	≥ 500

Contacts

Material	copper alloy
Surface	silver
Contact resistance	≤ 0.2 mΩ
Axial screw termination	
- Wire gauge[1)]	70 ... 185 mm²
- MCM	138 ... 350
- Stripping length	23 ... 25 mm
- Max. cable diameter	26.5 mm

mm²	70	95	120	150	185
Nm	12	14	16	17	18

- Tightening torque

Screw terminal	
- Thread	M 12
- Tightening torque	16 ... 18 Nm

Hoods/Housings

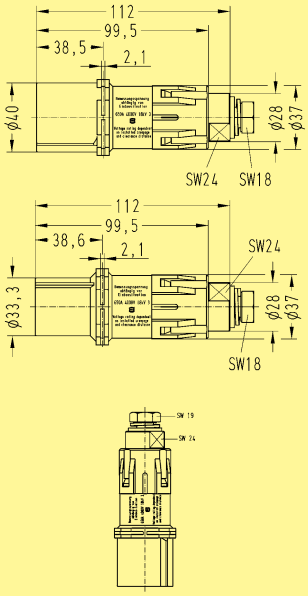
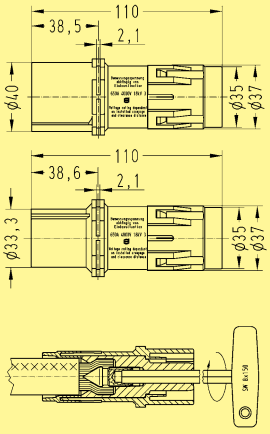
For technical details see chapter 31

Frame

Tightening torque of the fixing screws	0.5 Nm
Material	stainless steel

[1)] geometric wire gauge

Modular
High Current Connector System

Identification	Part number Male contact	Female contact	Wire gauge	Drawing	Dimensions in mm
Contacts with screw terminal for housing bulkhead mounting	09 11 001 2675	09 11 001 2775	70 ... 240 mm²		
				Please ensure to hold up the contact with a wrench size 24 to apply the tightening torque	
with axial screw terminal	09 11 001 2671 09 11 001 2672	09 11 001 2771 09 11 001 2772	70 ... 120 mm² 150 ... 185 mm²		
				min. length of wrench: 60 mm	
Hexagonal driver Adapter (SW 8)	**09 99 000 0372**				

Stock items in bold type

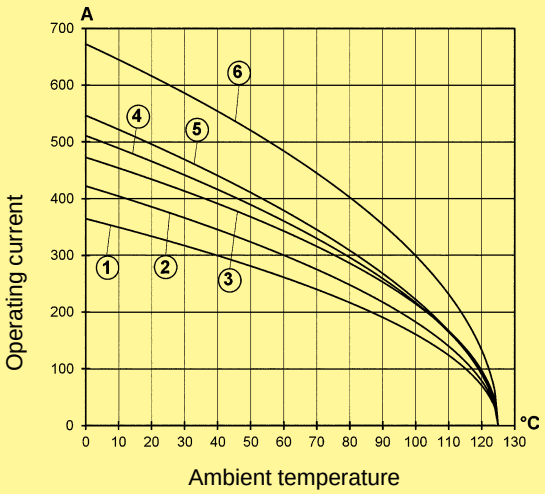
Features

- Crimp termination
- Plug compatible to Han® HC Modular 650 with axial screw terminal
- Contact in one piece

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 according to DIN EN 60 512-5-2



① Wire gauge 70 mm²
② Wire gauge 95 mm²
③ Wire gauge 120 mm²
④ Wire gauge 150 mm²
⑤ Wire gauge 185 mm²
⑥ Wire gauge 240 mm²
three contacts in Han® 24 HPR

Technical characteristics

Specifications	DIN EN 61 984 DIN EN 60 664-1

Inserts

Number of contacts	1 or 2
Electrical data acc. to EN 61 984	
without adapter	**650 A 2000 V 12 kV 3**
Rated current	650 A
Rated voltage	2000 V
Rated impulse voltage	12 kV
Pollution degree	3
with adapter	**650 A 4000 V 18 kV 3**
Rated current	650 A
Rated voltage	4000 V
Rated impulse voltage	18 kV
Pollution degree	3
Insulation resistance	≥ 10^{10} Ω
Material	polyamide
Limiting temperatures	-40 °C ... +125 °C
Flammability acc. to UL 94	V 0
Mechanical working life	
- mating cycles	≥ 500

Contacts

Material	copper alloy
Surface	
- hard-silver plated	3 µm Ag
Contact resistance	≤ 0,3 mΩ
Crimp terminal	
- mm²	240 mm²
Max. insulation diameter	
Crimp die acc. to DIN 46 235	
Pressing force requirement	130 kN

Hoods/Housings

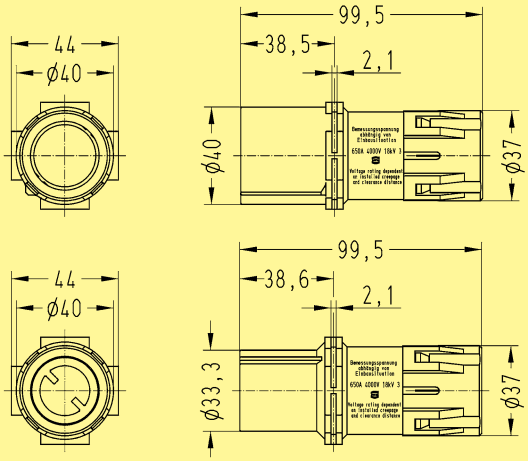
For technical details see chapter 31

Frame

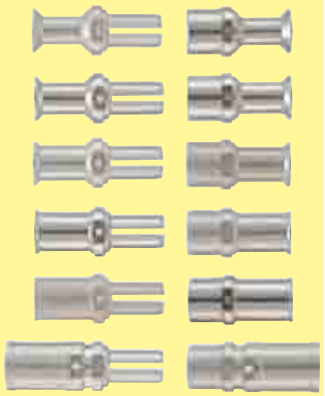
Tightening torque of the fixing screws	0,5 Nm
Material	stainless steel

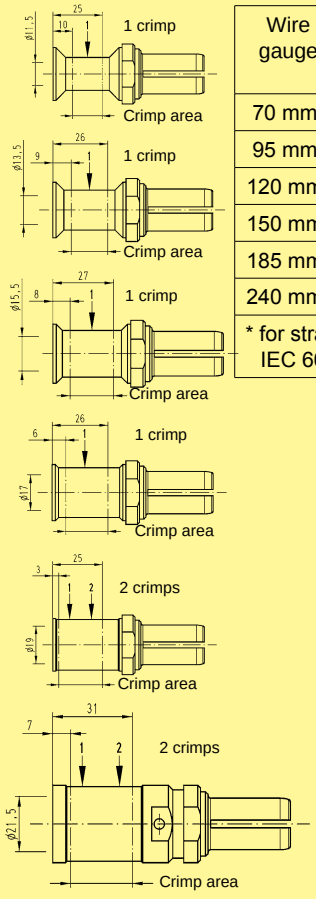
Modular High Current Connector System

Identification	Part-Number Male insert (M)	Part-Number Female insert (F)	Drawings	Dimensions in mm
Han® HC module 650 Crimp terminal	09 11 001 3012	09 11 001 3112	M F	



Identification	Wire gauge mm²	Part-Number Male contacts (M)	Part-Number Female contacts (F)	Drawings	Dimensions in mm
Crimp contacts* Silver plated	70	09 11 000 6161	09 11 000 6261	1 crimp, Crimp area	
	95	09 11 000 6162	09 11 000 6262	1 crimp, Crimp area	
	120	09 11 000 6163	09 11 000 6263	1 crimp, Crimp area	
	150	09 11 000 6164	09 11 000 6264	1 crimp, Crimp area	
	185	09 11 000 6165	09 11 000 6265	2 crimps, Crimp area	
	240	09 11 000 6168	09 11 000 6268	2 crimps, Crimp area	





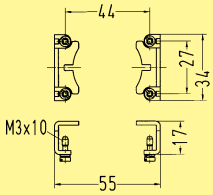
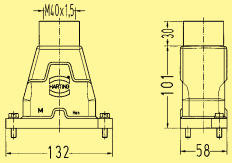
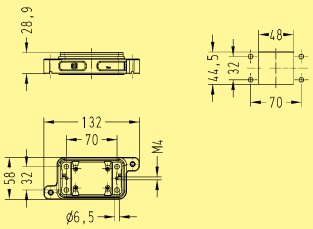
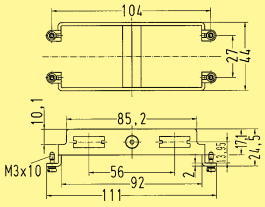
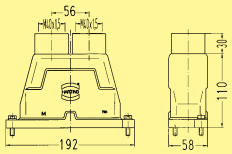
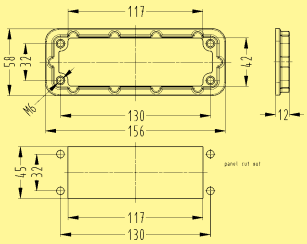
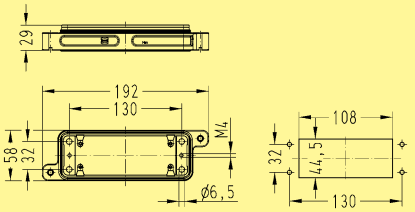
Wire gauge	ø in mm	Stripping length
70 mm²	11.5	42 mm
95 mm²	13.5	42 mm
120 mm²	15.5	42 mm
150 mm²	17	42 mm
185 mm²	19	42 mm
240 mm²	21.5	46 mm

* for stranded wire acc. to IEC 60 228 class 5

Han HC Modular

* Crimp area acc. to DIN EN 46 235

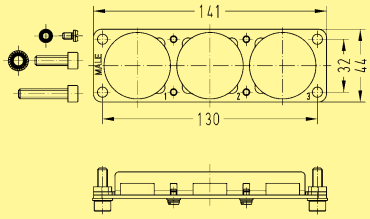
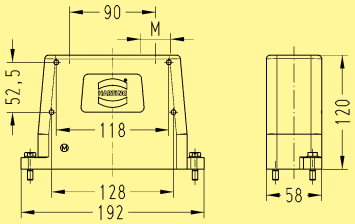
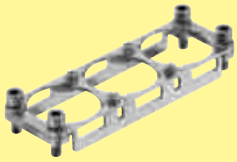
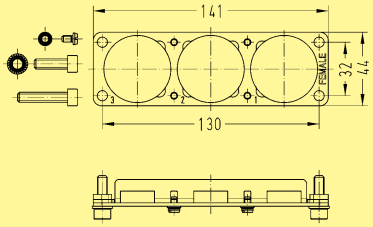
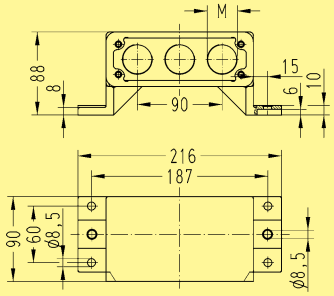
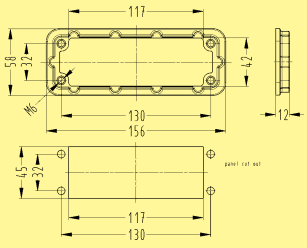
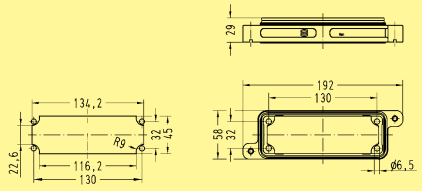
Stock items in bold type

Frame	Part number	Hoods/Housings	M	Part number
1 pole  	09 11 000 9971	Hood Han® HPR 6 B  	40	19 40 006 0418
		Housings bulk-head mounting* Han® HPR 6 B  		09 40 006 0314
2 poles  	09 11 000 9972	Hood Han® HPR 24 B  	2 x 40	19 40 024 0438
Mounting frame Han® HPR 24 B  	**09 40 000 9955**	Housings bulk-head mounting* Han® HPR 24 B  		**09 40 024 0311**

Han HC Modular

* HPR mounting frames of appropriate size from chapter 31 are not fitting for compatibility

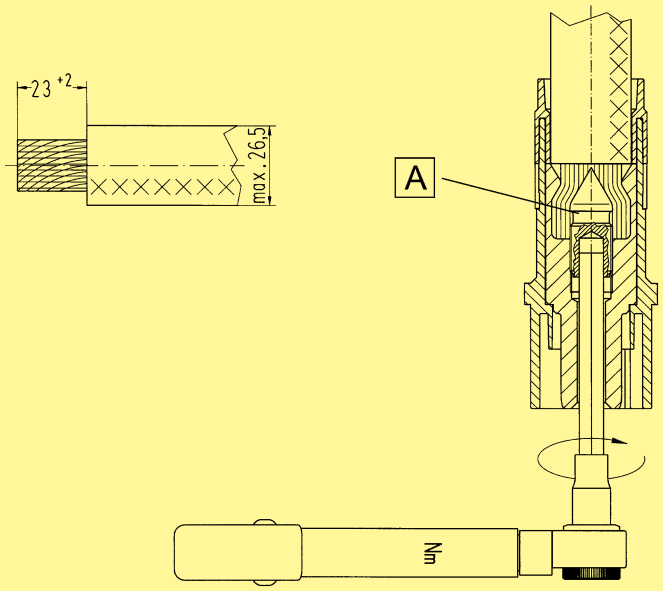
Stock items in bold type

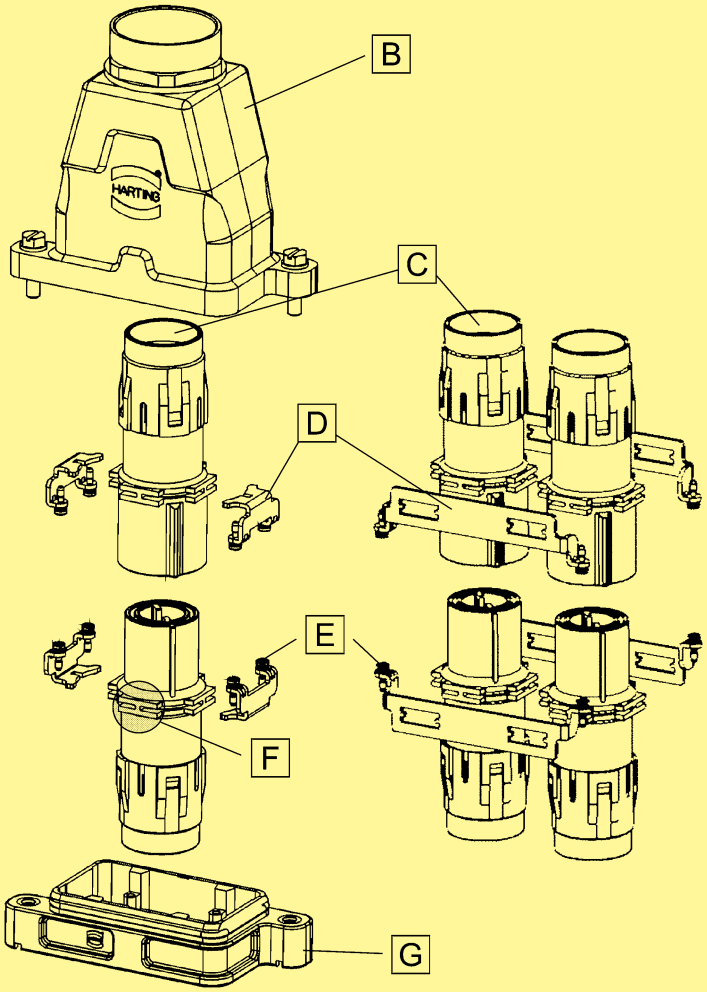
Frame	Part number	Hoods/Housings	M	Part number
3 pins, male  	09 11 000 9973	Hoods** Han® 24 HPR enlarged  	3x 32	19 40 024 0468
3 pins, female  	09 11 000 9974	Housings, surface mounting** Han® 24 HPR enlarged, horizontal version   Required housing, bulkhead mounting, 09 40 024 0368 not included, must be ordered separately	3x 32	19 40 024 0968
Mounting frame Han® HPR 24 B  	**09 40 000 9955**	Housings, bulkhead mounting* Han® 24 HPR enlarged  		09 40 024 0368

** A working voltage of 4000 V is only possible to realize by using a hexagonal adapter and the HARTING cable gland, in order to realize the clearance and creepage distance according to DIN EN 60 664-1.

Stock items in bold type

Assembly instructions





1. Strip cable to 23+2 mm.

2. Push conductor through the cable gland and the housing. Push the stripped end of the conductor into the termination entry of the module until the insulation touches the contact.

3. To tighten the axial screw, a hexagonal wrench size 8 is needed. Insert the hexagonal wrench on the mating side of the contact. At the same time, push the conductor over the axial screw.The locking screw has to be tightened with the recommended tightening torque that is determined by the conductor's cross section.

4. Once the modules are terminated, they are mounted into the housing by using two metal frames (tightening torque of the fixing screws = 0.5 Nm). The modules have 4 pegs formed by 2 parallel ribs (each peg shapes like a "H"). Each rib takes 1 pole frame, where the lateral link has to go into the relief of the frame. The 2 pole frames have 2 cutouts on the wall which get fitted to the "H"-shaped pegs (see figure). The heads of the screws have to face the mating direction of the module. Coding can be established by rotating the contact by 90 degrees. Therefore it is important that the corresponding modules are assembled in the correct position otherwise mating is not possible.

5. After assembling the modules in the housing, the tightening torque of the locking screw can be checked and corrected if necessary.

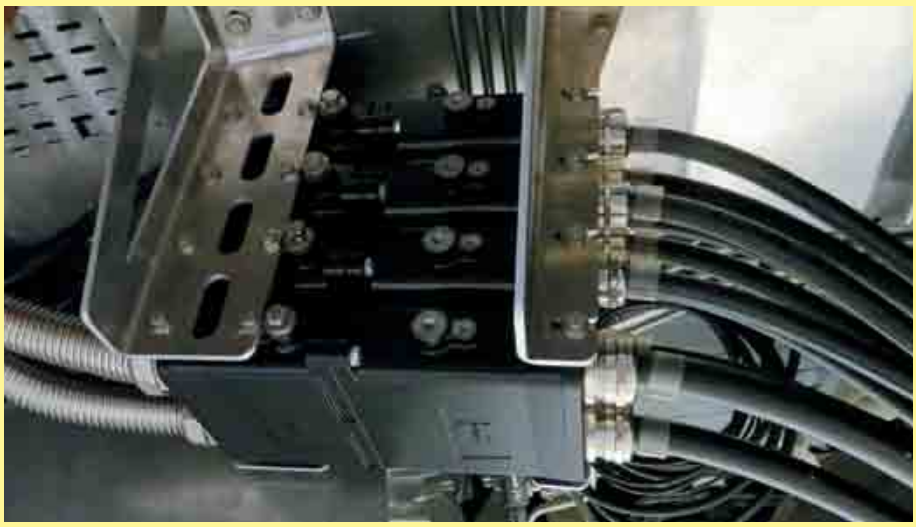
6. After final assembly of the contacts, the user should ensure that the cable is adequately strain reliefed to protect the contact from radial stress.

A - Axialscrew, B - Hood, C - Termination entry, D - Frame, E - Fixing screws, F - parallel ribs with H-shape, G - Housings bulkhead mounting,

Innovative High Current Connectors for Power Transmission on Trains

Source: Stadtwerke München, Munich

The Split hood and housing “open system” of the Han® 24HPR EasyCon with the innovative concept for shielded cables is an excellent solution for the versatile power requirements and the rapid moving operational cycle on Trains.
In use are the approved Han® HC Modular 350A and 650A Crimp-Contacts.



General description

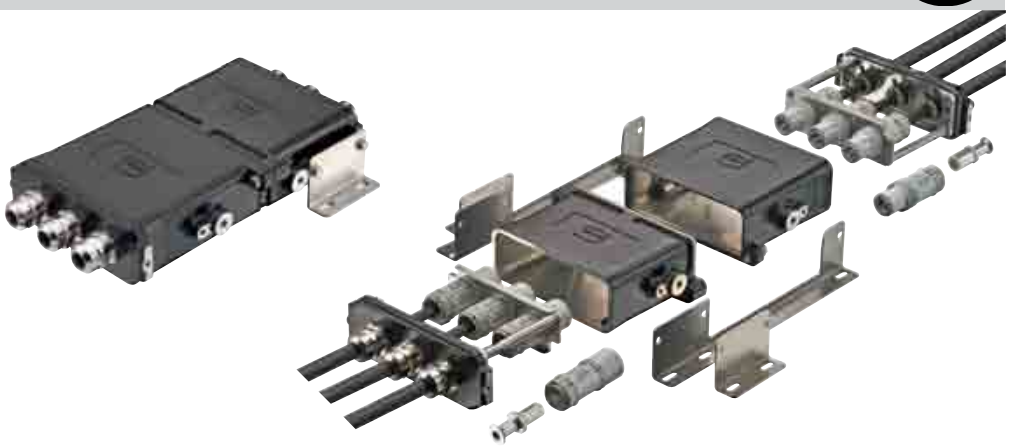
- High current connector for motor applications in the field of Railway rolling stock
- Robust and compact design
- Easy assembly due to split hood and surface mounted housing
- High EMC resistance
- Large space for cables

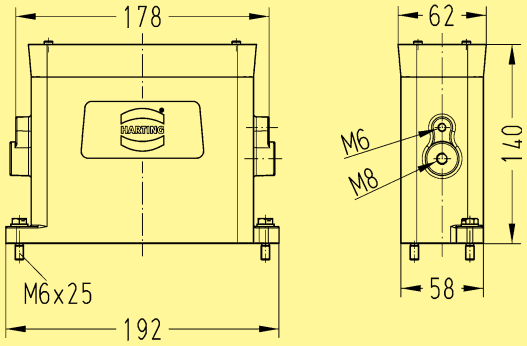
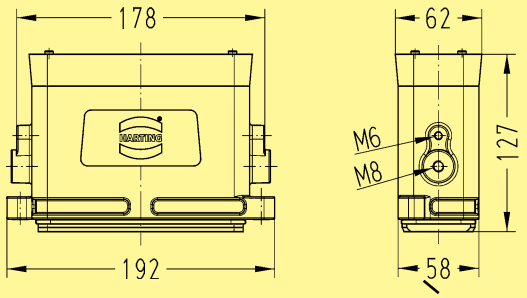
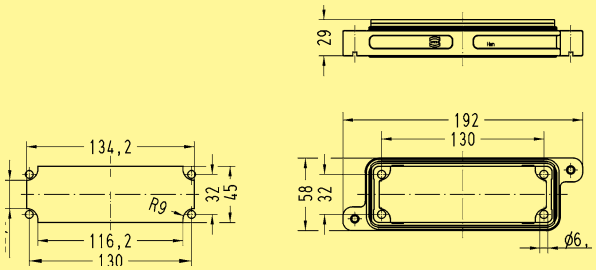
Features

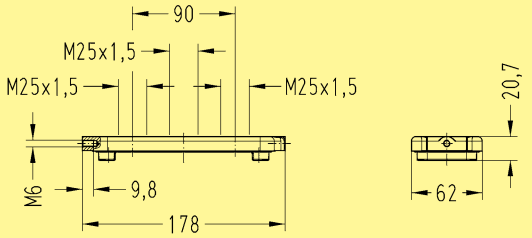
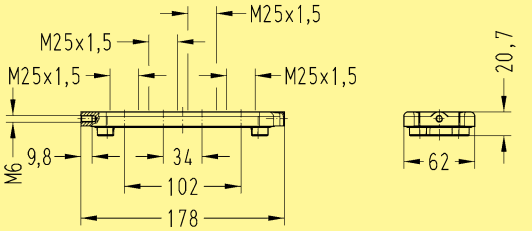
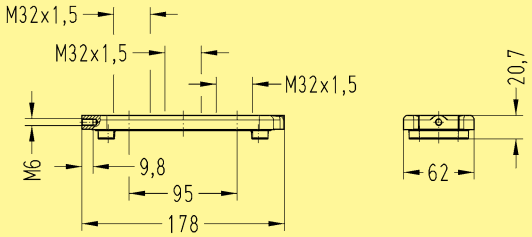
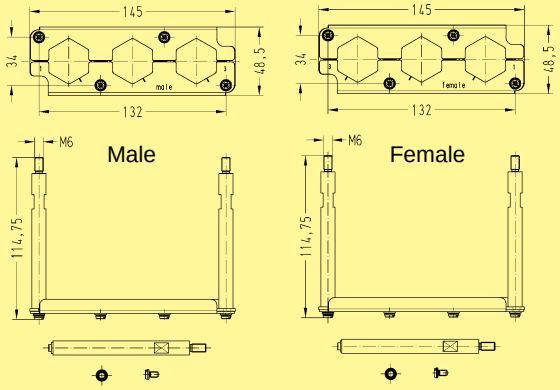
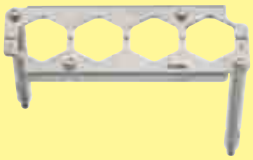
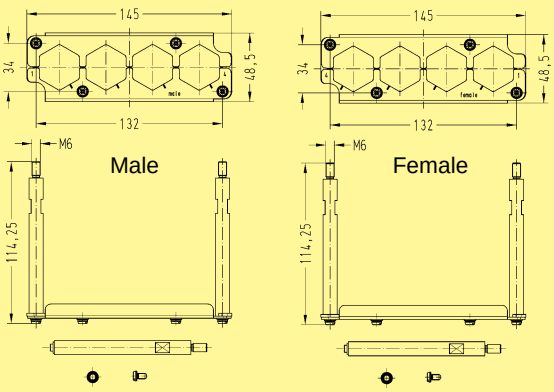
- Suitable for extreme environmental conditions
- Many assembly possibilities due to separate assembly panels
- External termination of PE termination on hood and surface mounted housing
- New cable gland for secure and a visible connection of screening braid of shielded cables.

Technical characteristics

Material	Aluminium die-cast
Surface	Powder-coated, RAL 9005 (black)
Limiting temperatures	-40 °C ... 125 °C
Locking	Screw locking, M6 stainless steel
Frame	3 and 4 contacts for Han® HC Modular 350 stainless steel
	3 contacts for Han® HC Modular 650 stainless steel
Frames	Short and long version stainless steel
Cable gland	Special cable gland with self tightening clamp for shielded cables
Degree of protection acc. to EN 60 529 in locked position	IP 68



Identification	Part-Number	Drawing	Dimensions in mm
Hood 	09 40 024 0451		
Housing, surface mounting 	09 40 024 0951		
Housing, bulkhead mounting Han® HPR enlarged 	09 40 024 0368		

Identification		Part-Number	Drawing	Dimensions in mm
Covers for Han® 24 HPR EasyCon hood and surface mounting housing				
	3 x M25	19 40 024 9901		
	4 x M25	19 40 024 9902		
	3 x M32	19 40 024 9903		
Frames for 3 x Han® HC Modular 350 in Han® 24 HPR EasyCon hood and surface mounting housing			Included in kit: 2 x distance bolt (SW 7) 4 x M4 screw 4 x washer SK S4	
	Male	09 40 024 9911		
	Female	09 40 024 9912		
for 4 x Han® HC Modular 350 in Han® 24 HPR EasyCon hood and surface mounting housing			Included in kit: 2 x distance bolt (SW 7) 4 x M4 screw 4 x washer SK S4 4 x heat shrink tube	
	Male	09 40 024 9913		
	Female	09 40 024 9914		

Identification	Part-Number	Drawing	Dimensions in mm

Frames

for 3 x Han® HC Modular 650
in Han® 24 HPR EasyCon hood and surface mounting housing

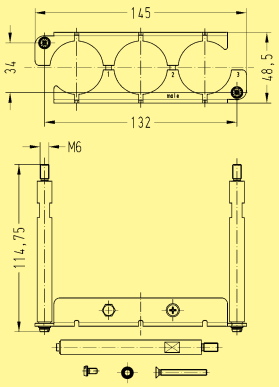
Included in kit:

2 x distance bolt (SW 7)
2 x M4 screw
2 x washer SK S4
2 x M4 Countersunk screw

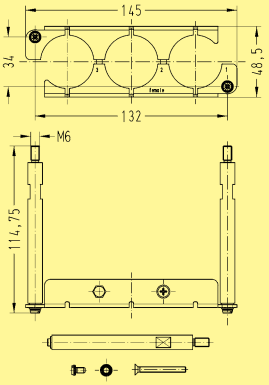
Male — 09 40 024 9921

Female — 09 40 024 9922

Male



Female



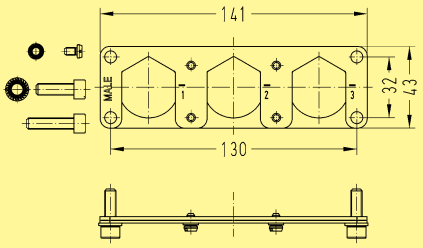
Frames

for 3 x Han® HC Modular 350
in Han® 24 HPR enlarged bulkhead mounting housing

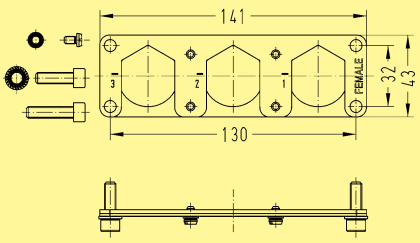
Included in kit:

4 x M4 screw
4 x washer SK S4
4 x washer SK S6
4 x cheese-head screw M6 x 20
4 x cheese-head screw M6 x 25

Male — 09 11 000 9957



Female — 09 11 000 9958



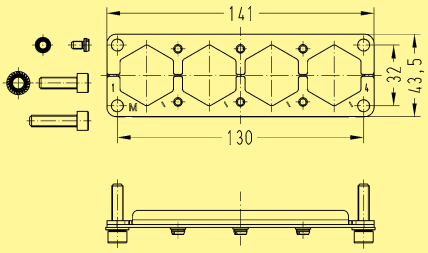
Identification		Part-Number	Drawing	Dimensions in mm

Frames

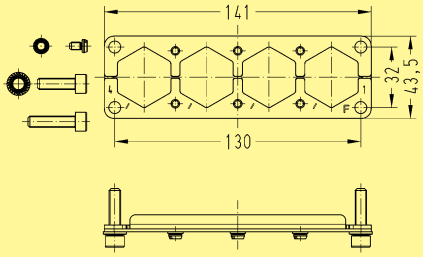
for 4 x Han® HC Modular 350
in Han® 24 HPR enlarged
bulkhead mounting housing

Included in kit:
4 x M4 screw
4 x washer SK SK S4
4 x washer SK SK S6
4 x cheese-head screw M6 x 20
4 x cheese-head screw M6 x 35
4 x heat shrink tube

Male — 09 11 000 9964



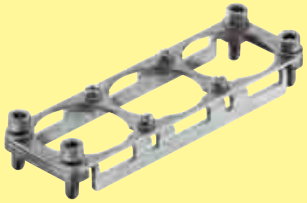
Female — 09 11 000 9965



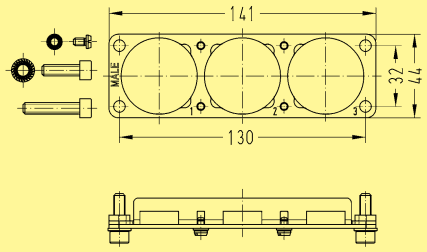
Frames

for 3 x Han® HC Modular 650
in Han® 24 HPR enlarged
bulkhead mounting housing

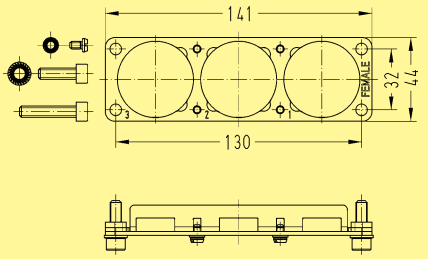
Included in kit:
4 x M4 screw
4 x washer SK SK S4
4 x washer SK SK S6
4 x cheese-head screw M6 x 20
4 x cheese-head screw M6 x 35

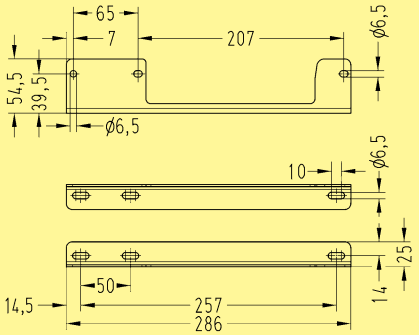
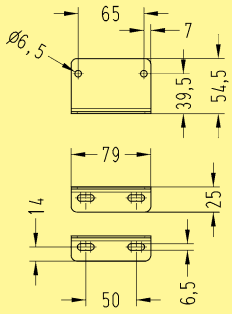


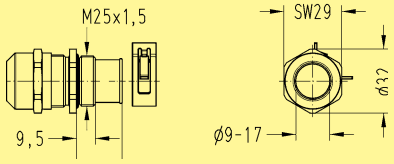
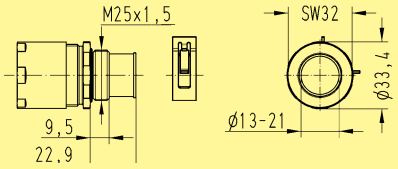
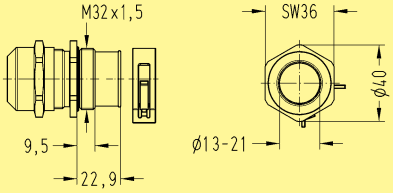
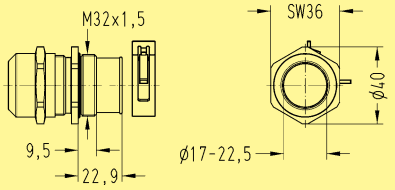
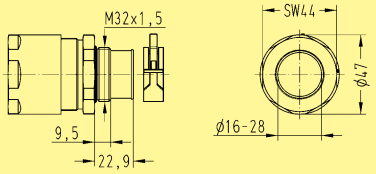
Male — 09 11 000 9973



Female — 09 11 000 9974



Identification	Part-Number	Drawing	Dimensions in mm
Mounting panels for Han® 24 HPR EasyCon hood and surface mounting housing Long version 	09 40 000 9925	Included in kit: 6 x washer M6 6 x M6 screw 	
Short version 	09 40 000 9926	Included in kit: 4 x washer M6 4 x M6 screw 	

Identification	Part-Number	Drawing	Dimensions in mm
Cable glands			
M25			
 For cable Ø 9 - 17 mm	19 00 000 5013		
 For cable Ø 13 - 21 mm	19 00 000 5019		
M32			
 For cable Ø 13 - 21 mm	19 00 000 5014		
For cable Ø 17 - 22.5 mm	19 00 000 5015		
 For cable Ø 16 - 28 mm	19 00 000 5022		
Assembly tool for shielding clamp			
	09 99 000 0334		

Features

- Easy assembly
- Good EMC features
- Secure termination, easy to control
- Vibration resistant acc. to DIN EN 61 373 Category 1B (Category 2 possible with usage of M6 distance bolts)
- Ideal motor / drive connector for transportation sector

Technical characteristics

Han® HPR Hoods/Housings

Material	aluminium die-cast, corrosion resistant
Surface	
- Top coat	Epoxy powder paint RAL 9005
Locking element	Stainless steel
Tightening torque	4 Nm
Sealing	NBR
Limiting temperatures	-40 °C ... +125 °C
Degree of protection acc. to DIN EN 60 529	
for coupled connector	IP 68

Technical characteristics

Specifications	DIN EN 60 664-1 DIN EN 61 984

Inserts

Number of contacts	i. e. 4, 5, 6, 10 depending on the frame
Electrical data acc. to EN 61 984	**350/650 A 4000 V 18 kV 3**
Rated current	350/650 A
Rated voltage	4000 V
Rated impulse voltage	18 kV
Pollution degree	3
Insulation resistance	≥ 10^{10} Ω
Material	polyamide
Limiting temperatures	-40 °C ... +125 °C
Flammability acc. to UL 94	V 0
Mechanical working life	
- mating cycles	≥ 500

Contacts Han® HC Modular 350

Material	copper alloy
Surface	silver
Contact resistance	≤ 0.2 mΩ
Axial screw termination	
- Wire gauge[1)]	35 ... 120 mm²
- AWG	1 ... 0000
- Stripping length	19 ... 20 mm
- Max. cable diameter	19.5 mm

- Tightening torque	mm²	35	50	70	95	120
	Nm	8	10	12	14	16

Contacts Han® HC Modular 650

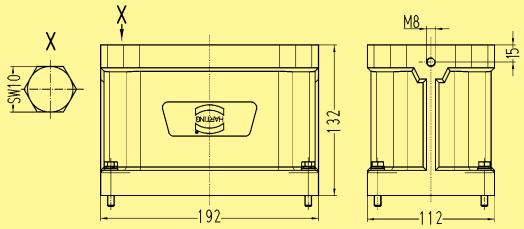
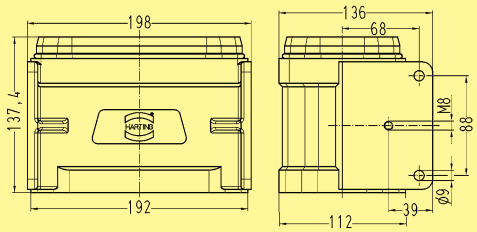
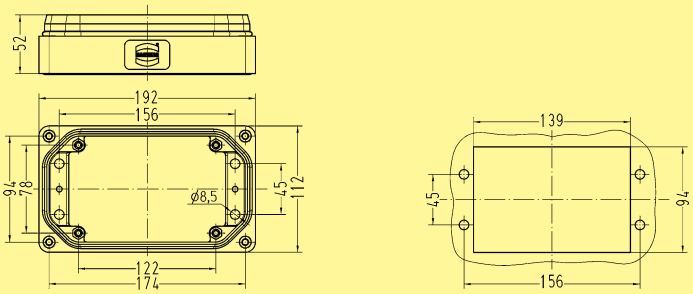
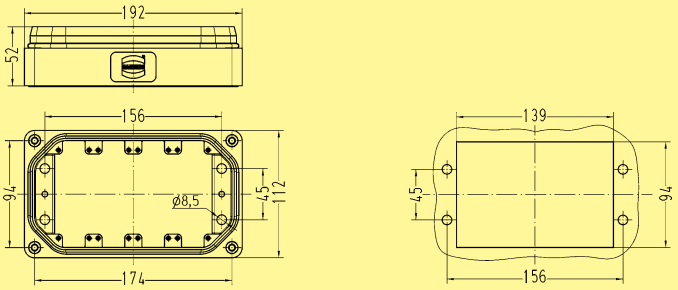
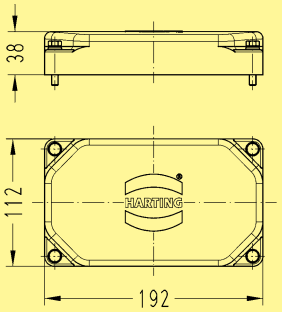
Material	copper alloy
Surface	silver
Contact resistance	≤ 0.2 mΩ
Axial screw termination	
- Wire gauge[1)]	70 ... 185 mm²
- MCM	138 ... 350
- Stripping length	23 ... 25 mm
- Max. cable diameter	26.5 mm

- Tightening torque	mm²	70	95	120	150	185
	Nm	12	14	16	17	18

Frame

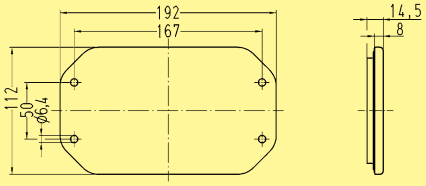
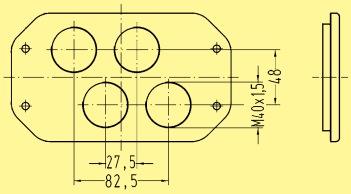
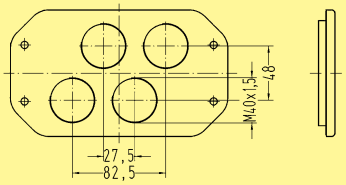
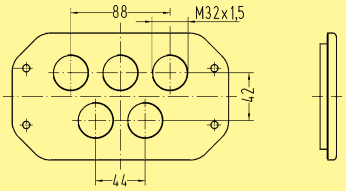
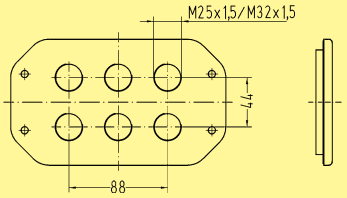
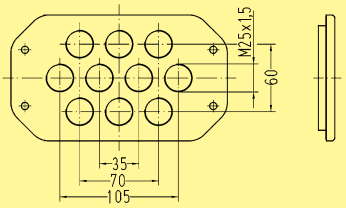
Tightening torque of the fixing screws	2 Nm
Material	stainless steel

[1)] geometric wire gauge

Identification	Part number	Drawing	Dimensions in mm
Hoods 	09 40 048 0451		
Housings, surface mounting 	09 40 048 0951		
Housings, bulkhead mounting 	**09 40 048 0311**		
Housings, bulkhead mounting for 4 inserts size 16 B 	09 40 048 0331		
Protection covers 	09 40 048 5401		

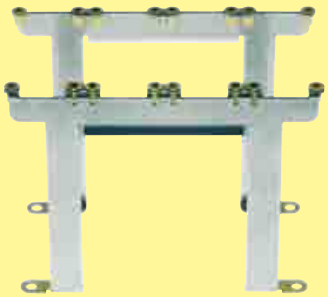
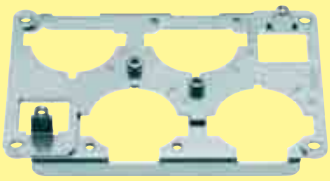
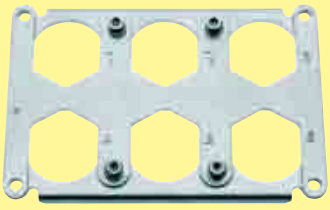
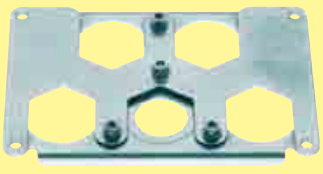
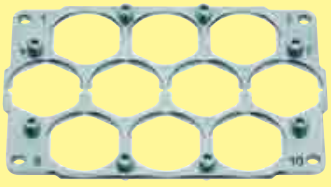
Han HC Modular

Stock items in bold type

Identification	Part number	M	Drawing	Dimensions in mm
Cover* without cable entry 	09 40 048 9801 (Distance bolt M 6) 09 40 048 9803 (Distance bolt M 5)			
Cover* for male inserts 	19 40 048 9801 (Distance bolt M 5)	4 x 40		
Cover* for female inserts 	19 40 048 9901 (Distance bolt M 5)	4 x 40		
Cover* 	19 40 048 9812 (Distance bolt M 6)	5 x 32		
Cover* 	19 40 048 9820 (Distance bolt M 6) 19 40 048 9822 (Distance bolt M 6)	6 x 25 6 x 32		
Cover* 	19 40 048 9860 (Distance bolt M 6)	10 x 25		

* Included in delivery range: 4 distance pieces, 4 screws M6, 4 washers

Stock items in bold type

Identification		Part number male	Part number female
Frame for 4 inserts size 16 B suitable for hoods and surface mounted housings in conjunction with cover 09 40 048 9803/ 19 40 048 9801/ 19 40 048 9901 only		09 40 048 9912	09 40 048 9912
Frame for 4 x HC 350 contacts + 2 x Han® Q 5/0		**09 40 048 9810**	**09 40 048 9910**
Frame for 4 x HC 650 contacts + 2 x Han® Q 5/0		**09 40 048 9811**	**09 40 048 9911**
Frame for 6 x HC 350 contacts		**09 40 048 9806**	**09 40 048 9906**
Frame for 4 x HC 350 contacts + PE		**09 40 048 9809**	**09 40 048 9909**
Frame for 10 x HC 350 contacts		**09 40 048 9860**	**09 40 048 9960**

Stock items in bold type