Contents

	Page
Technical characteristics Han Hv E®	04.02
Technical characteristics Han® Hv ES	04.03
Contacts Han Hv E®	04.04
Han® 3 Hv E/ES	04.05
Hoods/Housings Han® 10 Hv E	04.06
Han® 6 Hv E/ES	04.07
Hoods/Housings Han® 16 Hv E	04.08
Han® 10 Hv E/ES	04.09
Hoods/Housings Han® 24 Hv E	04.10
Han® 16 Hv E	04.11
Han® 12 Hv E/ES	04.12
Han® 20 Hv E/ES	04.13
Han® 32 Hv E	04.14
Difference: Han Hv E® to Standard Hoods/Housings	04.15

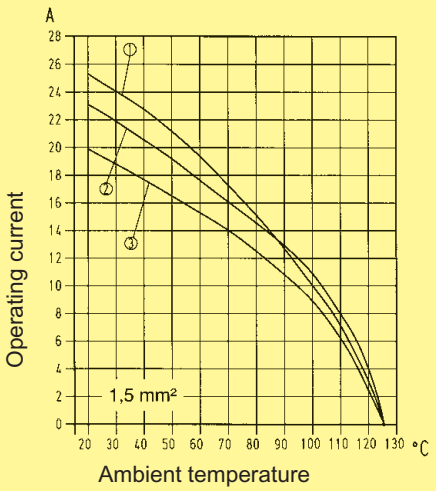
Features

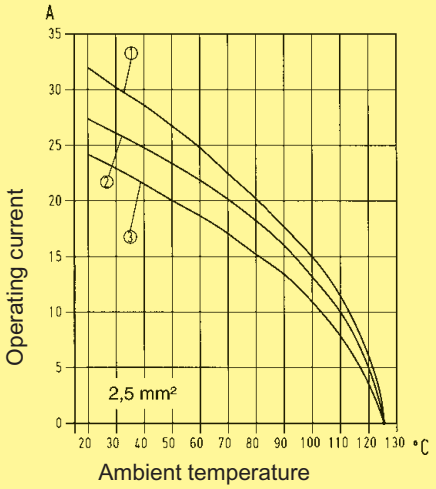
- Designed for application up to 830 V
- Available in several termination techniques
- No special tools required
- Han Hv E® screw require special Han Hv E® housings

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





① Han® 3 Hv E

② Han® 6 Hv E

③ Han® 10 Hv E / Han® 16 Hv E

Technical characteristics

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

Inserts

Number of contacts	3, 6, 10, 12 (2x6), 16, 20 (2x10), 32 (2x16) + PE + 2 additional contacts for safe high voltage connections
Electrical data acc. to DIN EN 61 984	
Han Hv E® 3, 6, 10, 12, 20 + PE	**16 A 830 kV 8 kV 3**
Rated current	16 A
Rated voltage	830 kV
Rated impulse voltage	8 kV
Pollution degree	3
Pollution degree 2 also	16 A 1000 V 8 kV 2
or	16 A 720/1250 V 8 kV 2
Relay contacts	16 A 500 V 6 kV 3
Han Hv E® 16, 32 + PE	**16 A 400/690 V 6 kV 3**
Rated current	16 A
Rated voltage conductor - ground	400 V
Rated voltage conductor - conductor	690 V
Rated impulse voltage	6 kV
Pollution degree	3
or	16 A 500 V 6 kV 3
Rated voltage acc. to UL/CSA	600 V
Relay contacts	250 V
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	
- hard-silver plated	3 µm Ag
Contact resistance	≤ 1 mΩ
Crimp terminal	
- Wire gauge[1)]	0.5 ... 4 mm²
- AWG	20 ... 12
Screw terminal	
- Wire gauge[1)]	2.5 mm²
- AWG	14
- Tightening/test torque	0.5 Nm

Hoods/Housings

Technical characteristics	see page 04.03

Accessories

Crimping tools	chapter 99
Cable clamps	chapter 40
Coding of hoods/housings	chapter 40
Label acc. to CSA-approval	chapter 40
Han-Snap®	chapter 11

[1)] geometric wire gauge

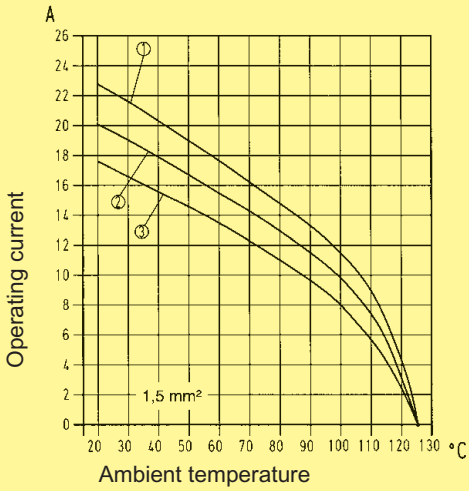
Features

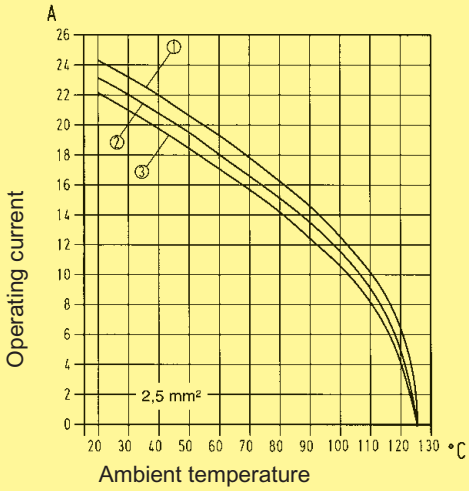
- Designed for application up to 830 V
- Reliable cage clamp termination
- No special tools required
- Vibration prooved
- Not plug compatible to Han Hv E® screw/crimp terminal

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





① Han® 3 Hv ES

② Han® 6 Hv ES

③ Han® 10 Hv ES

Technical characteristics

Specifications	DIN EN 61 984 DIN EN 60 664-1
Approvals	UL, SEV, CSA

Inserts

Number of contacts	3, 6, 10, 12 (2x6), 20 (2x10) + 2 additional contacts for safe high voltage connections
Electrical data acc. to DIN EN 61 984	**16 A 830 V 8 kV 3**
Rated current	16 A
Rated voltage	830 V
Rated impulse voltage	8 kV
Pollution degree	3
Pollution degree 2 also	16 A 1000 V 8 kV 2
or	16 A 720/1250 V 8 kV 2
Relay contacts	16 A 500 V 6 kV 3
Rated voltage acc. to UL/CSA	600 V
Relay contacts	250 V
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	
- hard-silver plated	3 µm Ag
Contact resistance	≤ 3 mΩ
Cage clamp terminal	
- Wire gauge[1)]	0.14 ... 2.5 mm²
- AWG	26 ... 14

Hoods/Housings

Material	aluminium die-cast
Surface	powder-coated RAL 7037
Locking element	Han-Easy Lock®
Hoods/Housings sealing	NBR
Limiting temperatures	-40 °C ... +125 °C
Degree of protection acc. to DIN EN 60 529 for coupled connector	IP 65

Further selection of hoods/housings see chapter 30 / chapter 31

Accessories

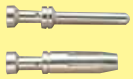
Cable clamps	chapter 40
Coding of hoods/housings	chapter 40
Label acc. to CSA-approval	chapter 40
Han-Snap®	chapter 11

[1)] geometric wire gauge

Identification	Wire gauge (mm²)	Part number Male contacts	Part number Female contacts	Drawing	Dimensions in mm

Crimp contacts

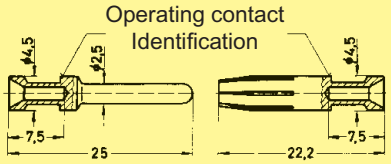
Operating contacts silver plated



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**

Relay contact

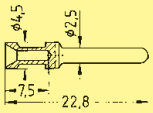
0.75-1	09 33 000 6109	
1.5	09 33 000 6110	
2.5	09 33 000 6111	



Crimp contact identification

Identification	Wire gauge		Stripping length
no groove	0.5 mm²	AWG 20	7.5 mm
1 groove*	0.75 mm²	AWG 18	7.5 mm
1 groove	1 mm²	AWG 18	7.5 mm
2 grooves	1.5 mm²	AWG 16	7.5 mm
3 grooves	2.5 mm²	AWG 14	7.5 mm
wide groove	3 mm²	AWG 12	7.5 mm
no groove	4 mm²	AWG 12	7.5 mm

* on the back crimp collar



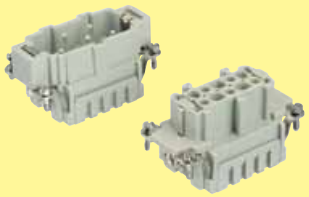
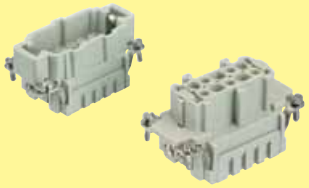
For a fully equipped crimp connector the following contacts are required:

Type	Female contacts	Operating contacts	Relay contacts
Han® 3 Hv E	5	3	2
Han® 6 Hv E	8	6	2
Han® 10 Hv E	12	10	2
Han® 12 Hv E	16	12	4
Han® 20 Hv E	24	20	4

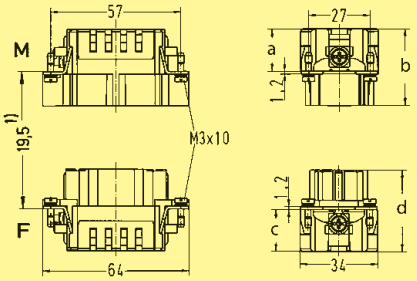
Number of contacts

3 + ⏚

+ 2 additional contacts for safe high voltage connections

Identification	Series	Part number Male insert (M)	Part number Female insert (F)
Cage clamp terminal	Han® Hv ES		
	1-3	09 34 003 2616	09 34 003 2716
not plug compatible to screw/crimp terminal			
Screw terminal	Han Hv E®		
	1-3	09 34 003 2601	09 34 003 2701
Crimp terminal	Han Hv E®		
	1-3	09 34 003 2602	09 34 003 2702
Order crimp contacts separately (see page 04.04)			

Drawing

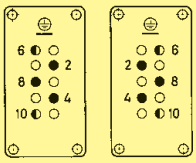


	a	b	c	d
Cage clamp terminal	18,4	33,4	18,4	35,6
Screw terminal Crimp terminal	18,5	33,5	18	34,5

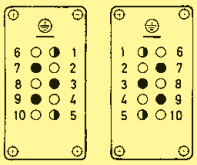
1) Distance for contact max. 21 mm

Contact arrangement (view from termination side)

Han® 3 Hv ES

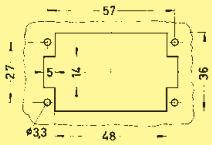


Han® 3 Hv E



- ● Working contact
- ◐ Relay contact
- ○ Without contact

Panel cut out for inserts for use without hoods/housings



Han Hv E

Crimp terminal could also be used with 10 B standard hood/housing

Stock items in bold type

Hoods/Housings, metal with 2 levers on the housing

Identification	Part number	M	Drawing	Dimensions in mm
Hoods side entry	19 34 003 0520	20		
Hoods top entry	19 34 003 0420 **19 34 003 0421**	20 25		
Protection covers plastic/metal	09 30 010 5401 **09 30 010 5423**		a 75,1; b 78,6; c 28,5	

Identification	Part number	M	Drawing	Dimensions in mm
Housings bulkhead mounting	09 34 003 0301		Panel cut out 60 x 35 mm	
Housings surface mounting side entry	19 34 003 0270	20		
Protection covers for housings plastic/metal	**09 30 010 5407** **09 30 010 5425**		a 75,1; b 78,5	
Hoods cable to cable top entry	19 34 003 0730 19 34 003 0730	20 25		
Protection covers for hoods cable to cable metal	**09 30 010 5427**		b 78,5; c 28,5	

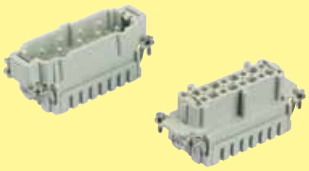
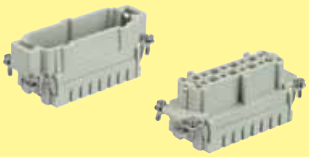
Han Hv E

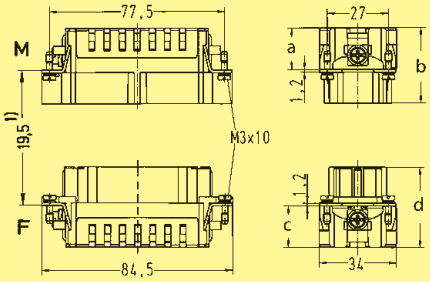
Stock items in bold type

Number of contacts

6 + ⏚

+ 2 additional contacts for safe high voltage connections

Identification	Series	Part number Male insert (M)	Part number Female insert (F)	Drawing / Dimensions in mm
Cage-clamp terminal  not plug compatible to screw/crimp terminal	Han® Hv ES 1-6	09 34 006 2616	09 34 006 2716	
Screw terminal 	Han Hv E® 1-6	09 34 006 2601	09 34 006 2701	
Crimp terminal  Order crimp contacts separately (see page 04.04)	Han Hv E® 1-6	09 34 006 2602	09 34 006 2702	

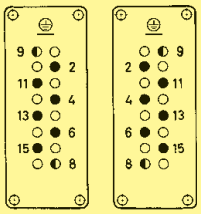


	a	b	c	d
Cage clamp terminal	18,4	33,4	18,4	35,6
Screw terminal	18,5	32,4	18	34,6
Crimp terminal	18,5	34,2	18	37

1) Distance for contact max. 21 mm

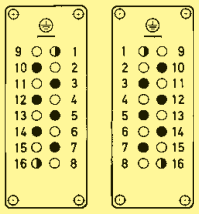
Contact arrangement (view from termination side)

Han® 6 Hv ES



M F

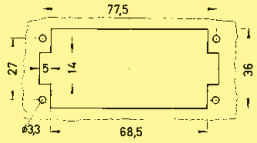
Han® 6 Hv E



M F

- ● Working contact
- ◐ Relay contact
- ○ Without contact

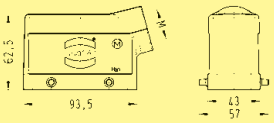
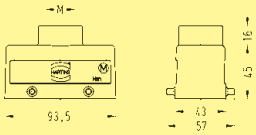
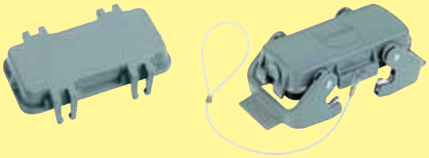
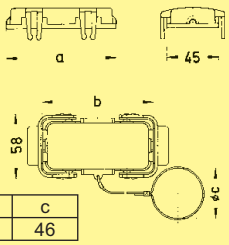
Panel cut out for inserts for use without hoods/housings

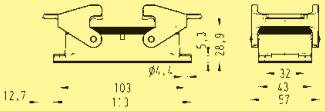
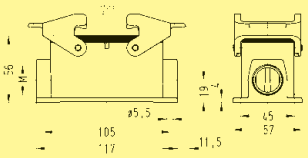
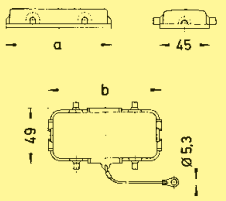
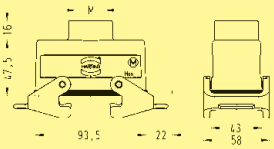
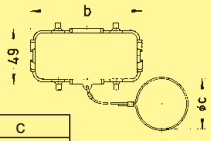


Crimp terminal could also be used with 16 B standard hood/housing

Stock items in bold type

Hoods/Housings, metal with 2 levers on the housing

Identification	Part number	M	Drawing / Dimensions in mm
Hoods top entry	19 34 006 0521	25	
Hoods side entry	19 34 006 0421	25	
Protection covers plastic/metal 	09 30 016 5401 **09 30 016 5422**		 a 96, b 99,1, c 46

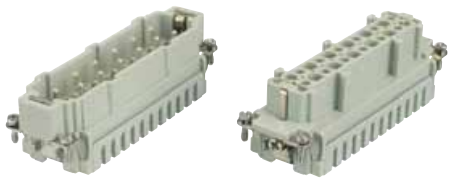
Identification	Part number	M	Drawing / Dimensions in mm
Housings bulkhead mounting	09 34 006 0301		Panel cut out 82 x 35 mm 
Housings surface mounting side entry	19 34 006 0271	25	
Protection covers for housings plastic/metal	**09 30 016 5405** **09 30 016 5425**		 a 96, b 99
Hoods cable to cable top entry	**19 34 006 0731** 19 34 006 0732	25 32	
Protection covers metal	**09 30 016 5426**		 b 99, c 44

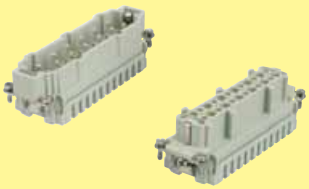
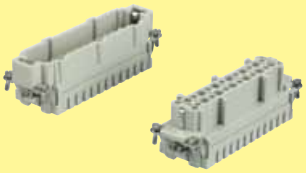
Stock items in bold type

Number of contacts

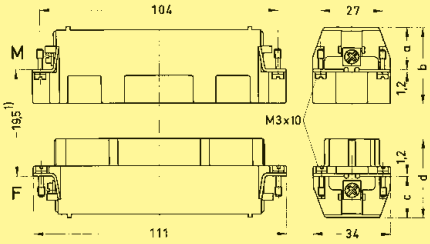
10 + ⏚

+ 2 additional contacts for safe high voltage connections



Identification	Series	Part number Male insert (M)	Part number Female insert (F)
Cage-clamp terminal	Han® Hv ES		
	1-10	09 34 010 2616	09 34 010 2716
not plug compatible to screw/crimp terminal			
Screw terminal	Han Hv E®		
	1-10	09 34 010 2601	09 34 010 2701
Crimp terminal	Han Hv E®		
	1-10	09 34 010 2602	09 34 010 2702
Order crimp contacts separately (see page 04.04)			

Drawing — Dimensions in mm

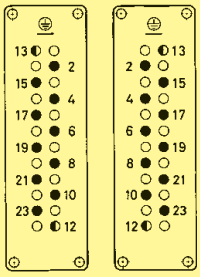


	a	b	c	d
Cage clamp terminal	18,4	33,4	18,4	35,6
Screw terminal	18,5	35	18,5	35
Crimp terminal	18,5	35	18,5	35

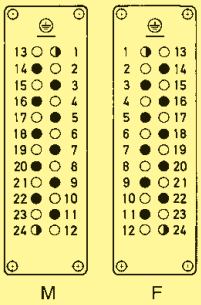
1) Distance for contact max. 21 mm

Contact arrangement (view from termination side)

Han® 10 Hv ES

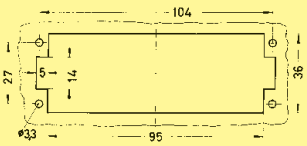


Han® 10 Hv E



- ● Working contact
- ◐ Relay contact
- ○ Without contact

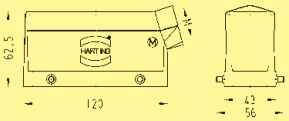
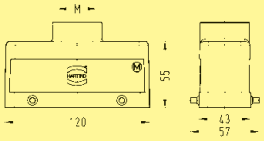
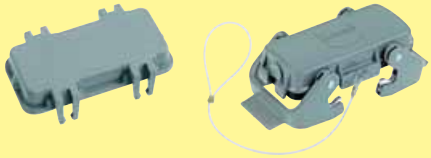
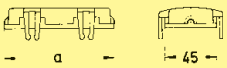
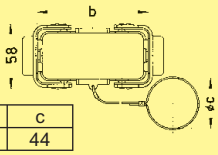
Panel cut out for inserts for use without hoods/housings



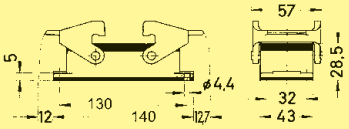
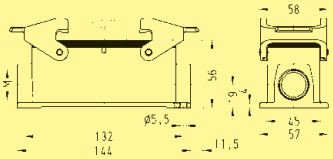
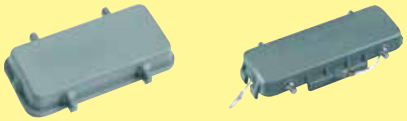
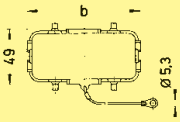
Crimp terminal could also be used with 24 B standard hood/housing

Stock items in bold type

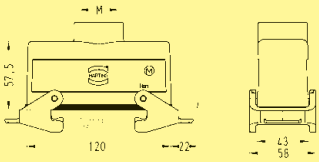
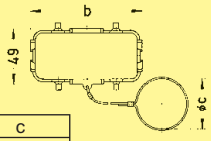
Hoods/Housings, metal with 2 levers on the housing

Identification	Part number	M	Drawing / Dimensions in mm
Housings surface mounting side entry	19 34 010 0521	25	
Hoods top entry	19 34 010 0422	32	
Protection covers plastic/metal 	**09 30 024 5401** **09 30 024 5422**		 

a	b	c
122,5	125,6	44

Identification	Part number	M	Drawing / Dimensions in mm
Housings bulkhead mounting	**09 34 010 0301**		Panel cut out 108 x 35 mm 
Housings surface mounting top entry	19 34 010 0271	25	
Protection covers for housings plastic/metal 	**09 30 024 5405** **09 30 024 5425**		

a	b
122,5	125,5

Identification	Part number	M	Drawing / Dimensions in mm
Hoods cable to cable top entry	19 34 010 0732	32	
Protection covers metal	09 30 024 5426		

b	c
125,5	44

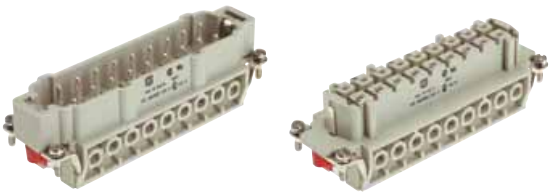
Han Hv E

Stock items in bold type

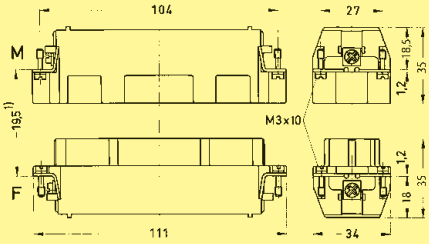
Number of contacts

16 + ⏚

+ 2 additional contacts for safe high voltage connections



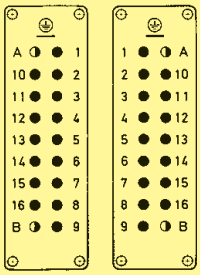
Identification	Series	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Screw terminal	Han Hv E®				
	1-16	**09 34 016 2601**	**09 34 016 2701**		



1) Distance for contact max. 21 mm

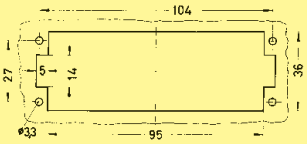
Contact arrangement (view from termination side)

Han® 16 Hv E



- ● Working contact
- ◐ Relay contact
- ○ Without contact

Panel cut out for inserts for use without hoods/ housings

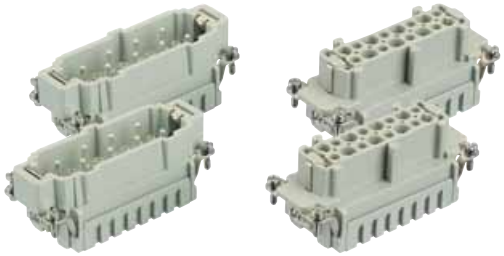


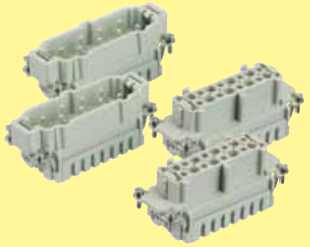
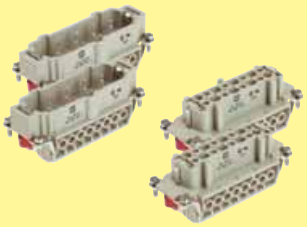
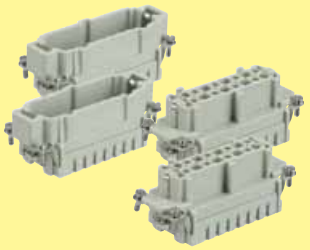
Stock items in bold type

Number of contacts

12 + ⏚

+ 4 additional contacts for safe high voltage connections



Identification	Series	Part number Male insert (M)	Part number Female insert (F)
Cage-clamp terminal	Han® Hv ES		
	1-6	09 34 006 2616	09 34 006 2616
	1-6	09 34 006 2616	09 34 006 2616
not plug compatible to screw/crimp terminal			
Screw terminal	Han Hv E®		
	1-6	09 34 006 2601	09 34 006 2601
	1-6	09 34 006 2601	09 34 006 2601
Crimp terminal	Han Hv E®		
	1-6	09 34 006 2602	09 34 006 2702
	1-6	09 34 006 2602	09 34 006 2702
Order crimp contacts separately (see page 04.04)			

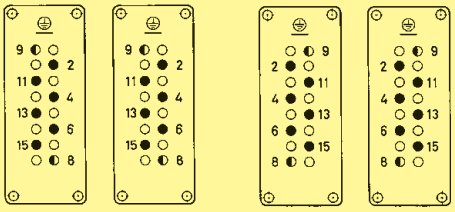
Drawing

Dimensions in mm

Dimensions for inserts see page 04.07

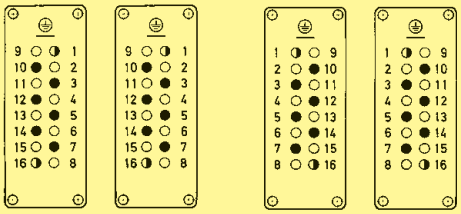
Contact arrangement (view from termination side)

Han® 12 Hv ES



M F

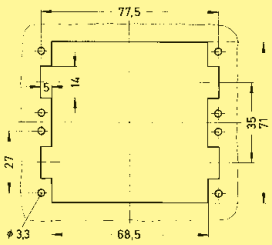
Han® 12 Hv E



M F

- ● Working contact
- ◐ Relay contact
- ○ Without contact

Panel cut out for inserts for use without hoods/ housings

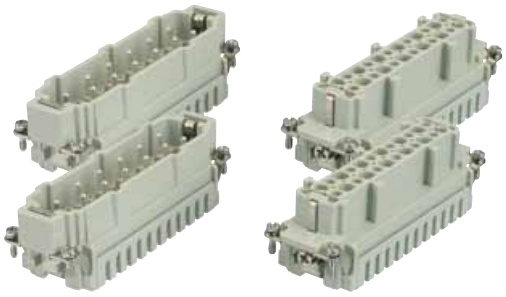


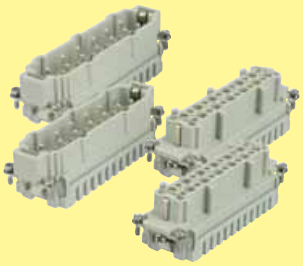
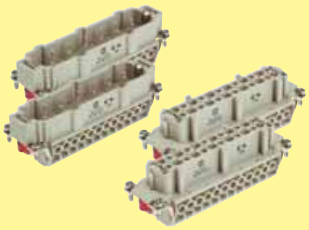
Stock items in bold type

Number of contacts

20 + ⏚

+ 4 additional contacts for safe high voltage connections



Identification	Series	Part number Male insert (M)	Part number Female insert (F)
Cage clamp terminal	Han® Hv ES		
	1-10	09 34 010 2616	09 34 010 2716
	1-10	09 34 010 2616	09 34 010 2716
not plug compatible to screw/crimp terminal			
Screw terminal	Han Hv E®		
	1-10	09 34 010 2601	09 34 010 2701
	1-10	09 34 010 2601	09 34 010 2701
Crimp terminal	Han Hv E®		
	1-10	09 34 010 2602	09 34 010 2702
	1-10	09 34 010 2602	09 34 010 2702
Order crimp contacts separately (see page 04.04)			

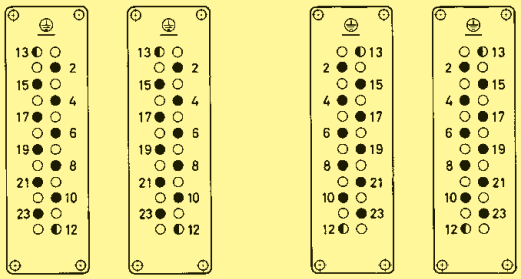
Dimensions in mm

Han Hv E

Dimensions for inserts see page 04.09

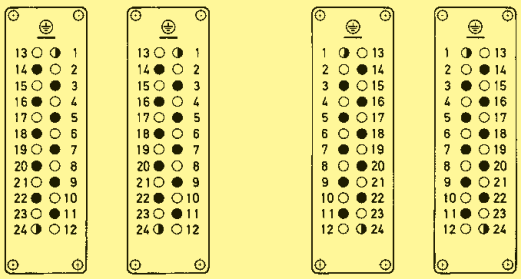
Contact arrangement (view from termination side)

Han® 20 Hv ES



M F

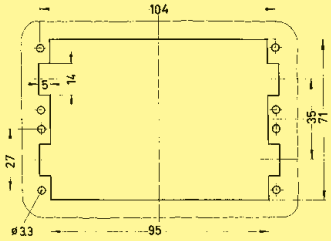
Han® 20 Hv E



M F

- ● Working contact
- ◐ Relay contact
- ○ Without contact

Panel cut out for inserts for use without hoods/ housings

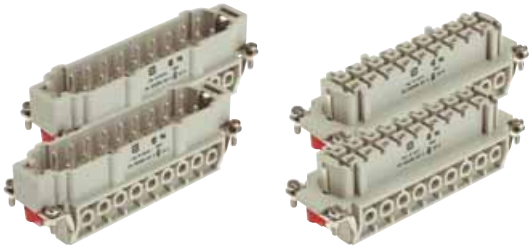


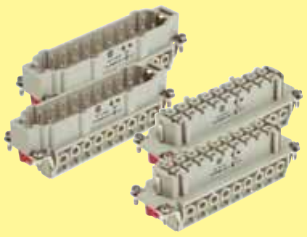
Stock items in bold type

Number of contacts

32 + ⏚

+ 4 additional contacts for safe high voltage connections

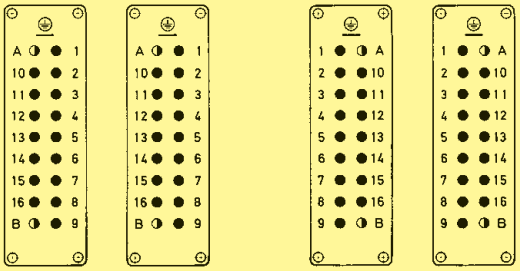


Identification	Series	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Screw terminal	Han Hv E®				
	1-16	**09 34 016 2601**	**09 34 016 2601**		
	1-16	**09 34 016 2601**	**09 34 016 2601**		

Dimensions for inserts see page 04.11

Contact arrangement (view from termination side)

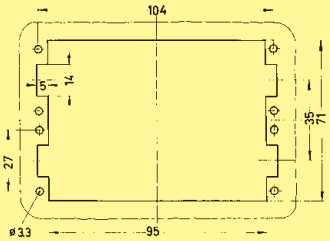
Han® 32 Hv E



M F

- ● Working contact
- ◐ Relay contact
- ○ Without contact

Panel cut out for inserts for use without hoods/ housings



Stock items in bold type

Standard Hoods/Housings Han® B

Suitable for inserts
Han® Hv ES cage-clamp terminal
and Han Hv E® crimp terminal

Special hood/housing Han Hv E®

Han Hv E® inserts may be used
together with the corresponding
Han Hv E® hoods/housings only

Biaxally oriented film die. Cloeren Inc., Orange (TX), USA