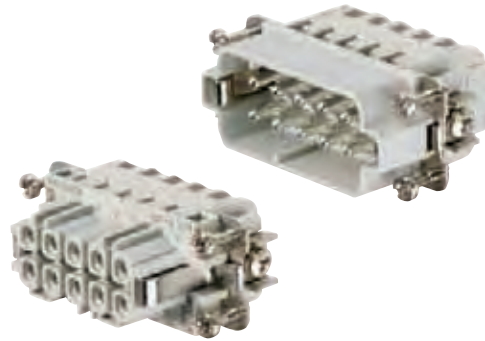


HA series – the slim connectors

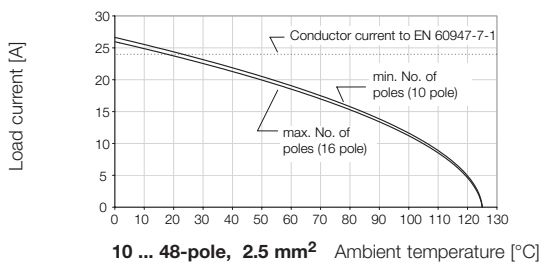
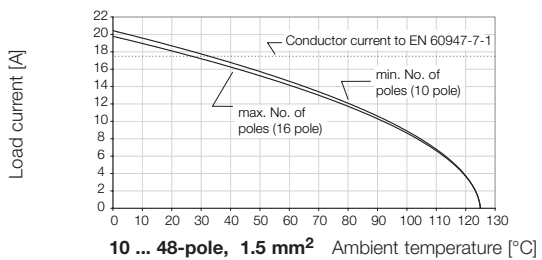
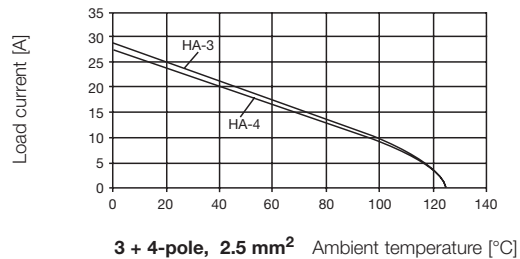
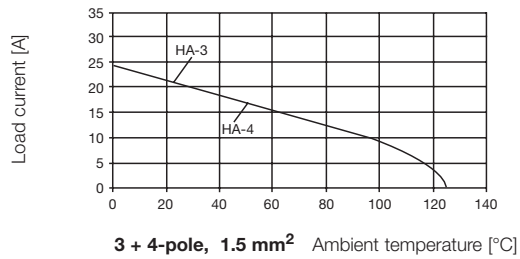
When space is tight, the small and narrow HA series comes into its own.



Technical data

Standards / approvals	
Standards	DIN EN 61984 DIN EN 60664-1
Approvals	UL/CSA
Inserts	
No. of poles	3, 4, 10, 16, 24, 32, 48
Rated voltage	250 V
Rated voltage to UL/CSA	600 V
Rated current	22 A (≥ 24 Poles 16 A)
Rated impulse withstand voltage	4 KV
Pollution severity	3
Insulation resistance	≥ 10 ¹⁰ Ω
Material	Glass-fibre reinforced PC (in UL list and approved for railway applications)
Temperature range	-40 °C ... +125 °C
Flammability to UL 94	V - 0
Mechanical service life	
- Plugging cycles Ag - Surface	≥ 500
- Plugging cycles Au - Surface	≥ 500
Contact resistance	
- Crimp connection	≤ 4 mΩ
- Screw tension clamp	≤ 2 mΩ
Contacts / Material	
Sockets and plug-in contact	Copper alloy
Surface	Passivated silver, or 0.8 µm gold on 2 µm nickel
Clamping unit / Screw connection	Copper alloy / Passivated silver
Clamping range / Stripping length	
- Crimp connection*	0.5 - 4 mm ² (AWG 20 ... 12) / 8 mm
- Screw connection	0.5 - 2.5 mm ² (AWG 20 ... 14) / 9 mm
- Tension clamp connection	0.5 - 2.5 mm ² (AWG 20 ... 14) / 8 mm
* The crimp is with flexible conductors.	
Clamping torque	
- Screw connection	0.5 - 0.55 Nm
SD blades	
- Screw connection	0.6 x 3.5 or PZ 0
- Push In	0.4 x 2.5
- Tension clamp connection	0.5 x 3 or 0.6 x 3.5
PE connection	
- Clamping range	0.5 ... 4 mm ²
- solid / stranded	0.5 ... 4 mm ² / 0.5 ... 4 mm ²
- flexible / flexible with wire end ferrule, DIN 46228 pt. 1	0.5 ... 4 mm ² / 0.5 ... 4 mm ²
- AWG conductor	AWG 20 ... 12
- Stripping length	10 mm
- Clamping torque	1.2 ... 1.5 Nm
- Blade dimensions	SD 0.8 x 4 mm or PZ 1
Note: HA 3 and HA 4: PE terminal max. 2.5 mm ² via socket and pin. Thread M3, torque range 0.5-0.55 Nm; * Crimp connection 2.5 mm ² = 24 A - 4 mm ² = 29 A; Switch off power supply before handling plug-in connectors.	

Derating curves



HA series - the slim connectors

250 V, 22 A, Size 1

3 + ⊕

Inserts



Screw connection



Insert	Designation	Order No.
Male	HDC HA 3 MS	1498100000
Female	HDC HA 3 FS	1498200000

Dimensions

Male

Female

Arrangement of contacts

Male

Female

**Selection of Housings RockStar® IP65
Size 1**



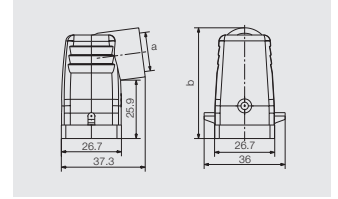
Hood

material: Diecast aluminium

Hood, Cable Entry sideways



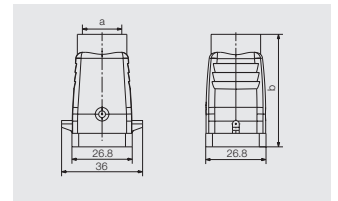
a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread		49,2	HDC 04A TWLU 1M20G	1788810000



Hood, Cable Entry at top



a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread		50	HDC 04A TOLU 1M20G	1788820000

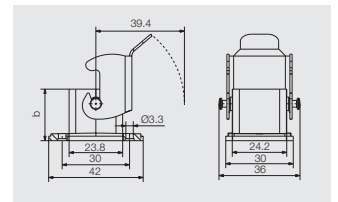


Base

Bulkhead housing



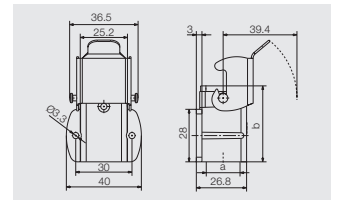
Version	Cover	b (mm)	Designation	Order No.
		23	HDC 04A ALU	1497600000



Base housing



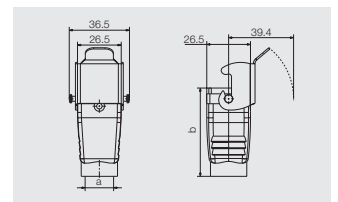
a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread		25,8	HDC 04A SLU 1M20G	1788830000



Coupling hood



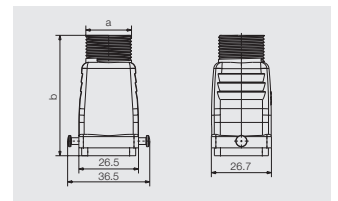
a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread		53,5	HDC 04A KOLU 1M20G	1788840000



Screw Mounting Housing



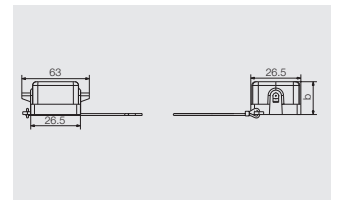
a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread		54	HDC 04A ELU 1M20G	1900320000
PG 13,5	with thread		54	HDC 04A ELU 1PG13G	1900330000
PG 13,5	with thread		54	HDC 04A ELU 1PG13G EXI	1900350000



Cover



Version	Designation	Order No.
for female insert	HDC 04A DMDL 2BO	1665750000
for male insert	HDC 04A DODL 2BO	1665740000



HA series - the slim connectors

250 V, 22 A, Size 1

4 + ⊕

Inserts

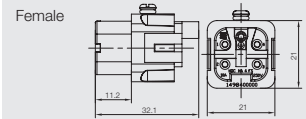
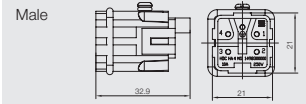


Screw connection



Insert	Designation	Order No.
Male	HDC HA 4 MS	1498300000
Female	HDC HA 4 FS	1498400000

Dimensions



Arrangement of contacts



**Selection of Housings RockStar® IP65
Size 1**



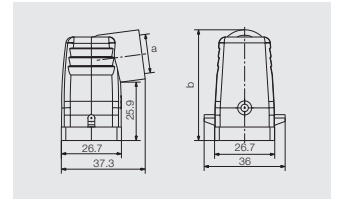
Hood

material: Diecast aluminium

Hood, Cable Entry sideways



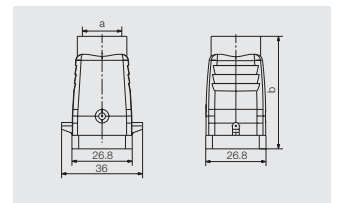
a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread		49,2	HDC 04A TWLU 1M20G	1788810000



Hood, Cable Entry at top



a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread		50	HDC 04A TOLU 1M20G	1788820000

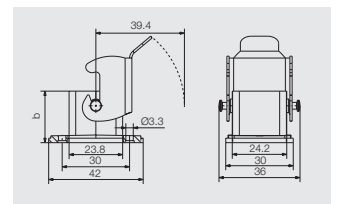


Base

Bulkhead housing



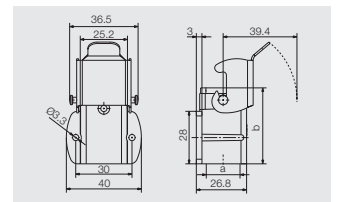
Version	Cover	b (mm)	Designation	Order No.
		23	HDC 04A ALU	1497600000



Base housing



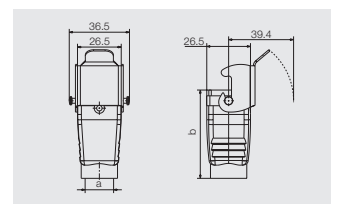
a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread		25,8	HDC 04A SLU 1M20G	1788830000



Coupling hood



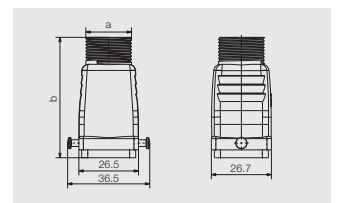
a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread		53,5	HDC 04A KOLU 1M20G	1788840000



Screw Mounting Housing



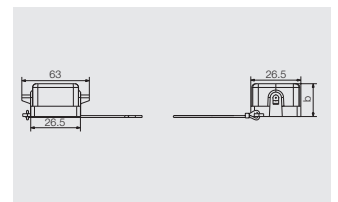
a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread		54	HDC 04A ELU 1M20G	1900320000
PG 13,5	with thread		54	HDC 04A ELU 1PG13G	1900330000
PG 13,5	with thread		54	HDC 04A ELU 1PG13G EXI	1900350000



Cover



Version	Designation	Order No.
for female insert	HDC 04A DMDL 2BO	1665750000
for male insert	HDC 04A DODL 2BO	1665740000



HA series - the slim connectors

250 V, 22 A, Size 2

10 + ⊕

Inserts



Tension clamp connection



Insert	Designation	Order No.
Male	HDC HA 10 MT	1896790000
Female	HDC HA 10 FT	1896780000

Screw connection



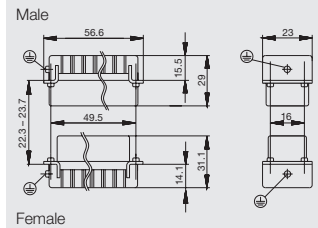
Insert	Designation	Order No.
Male	HDC HA 10 MS	1650610000
Female	HDC HA 10 FS	1650620000

Crimp connection

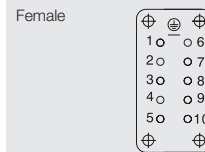
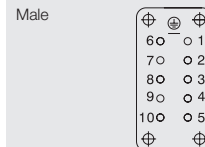


Insert	Designation	Order No.
Female	HDC HA 10 FC	1873860000
Male	HDC HA 10 MC	1873870000

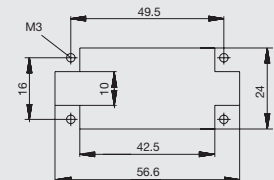
Dimensions



Arrangement of contacts



Mounting cut-out

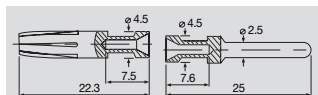


Accessories

Crimp contacts



Qty.	Male	Order No.	Female	Order No.
100	HDC-C-HE-SM0.5AG	1200500000	HDC-C-HE-BM0.5AG	1201100000
100	HDC-C-HE-SM0.75-1AG	1200600000	HDC-C-HE-BM0.75-1AG	1201200000
100	HDC-C-HE-SM1.5AG	1200700000	HDC-C-HE-BM1.5AG	1201300000
100	HDC-C-HE-SM2.5AG	1200800000	HDC-C-HE-BM2.5AG	1201400000
100	HDC-C-HE-SM4.0AG	1200900000	HDC-C-HE-BM4.0AG	1201500000
100	HDC-C-HE-SM0.5AU	1651420000	HDC-C-HE-BM0.5AU	1651470000
100	HDC-C-HE-SM0.75-1AU	1651430000	HDC-C-HE-BM0.75-1AU	1651480000
100	HDC-C-HE-SM1.5AU	1651440000	HDC-C-HE-BM1.5AU	1651490000
100	HDC-C-HE-SM2.5AU	1651450000	HDC-C-HE-BM2.5AU	1651500000
100	HDC-C-HE-SM4.0AU	1651460000	HDC-C-HE-BM4.0AU	1651510000



Single contacts

Conductor mm ²	AWG No.
0.50	20
0.75-1.00	18
1.50	16
2.50	14
4.00	12

Tools



Tool	Order No.
Crimping tool CTX CM 1.6/2.5	9018490000
Contact removal tool Removal Tool HE	1866750000

Selection of Housings RockStar® IP65
Size 2

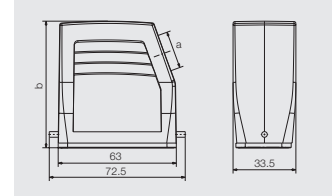


Hood

Hood, Cable Entry sideways



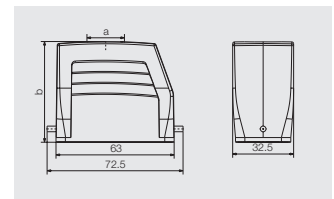
a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread		68	HDC 15A TSLU 1M20G	1788860000
M 25	with thread		68	HDC 15A TSLU 1M25G	1788850000



Hood, Cable Entry at top



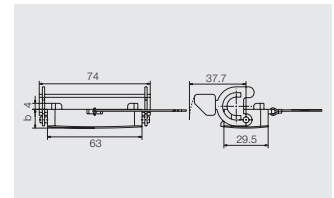
a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread		54	HDC 10A TOLU 1M20G	1788620000
M 25	with thread		54	HDC 10A TOLU 1M25G	1788610000



Cover



Version	Designation	Order No.
for hoods	HDC 10A DODL 1LB	1665890000

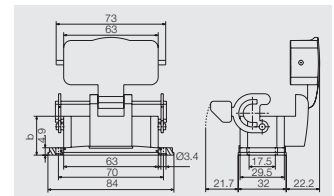


Base

Bulkhead housing



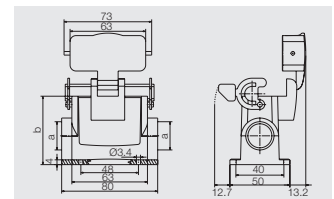
Version	Cover	b (mm)	Designation	Order No.
	with cover	37.5	HDC 10A ADLU	1664060000
		25	HDC 10A ALU	1664040000



Base housing



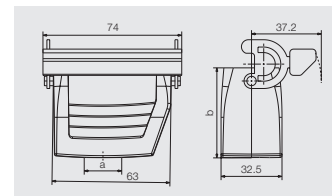
a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread	with cover	69.5	HDC 10A SDLU 2M20G	1788660000
M 25	with thread	with cover	69.5	HDC 10A SDLU 2M25G	1788650000
M 20	with thread		57	HDC 10A SLU 2M20G	1788640000
M 25	with thread		57	HDC 10A SLU 2M25G	1788630000



Coupling hood



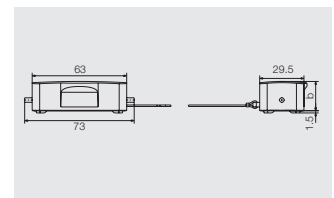
a	Version	Cover	b (mm)	Designation	Order No.
M 25	with thread		48	HDC 10A KLU 1M25G	1788670000



Cover



Version	Designation	Order No.
for bases	HDC 10A DMDL 2BO	1665880000



HA series - the slim connectors

250 V, 22 A, Size 5

16 + ⊕

Inserts



Tension clamp connection



Insert	Designation	Order No.
Male	HDC HA 16 MT	1896830000
Female	HDC HA 16 FT	1896800000

Screw connection



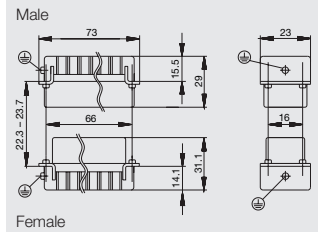
Insert	Designation	Order No.
Male	HDC HA 16 MS	1650770000
Female	HDC HA 16 FS	1650780000

Crimp connection

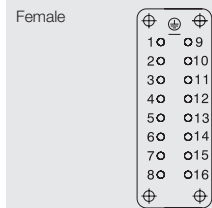
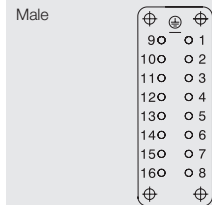


Insert	Designation	Order No.
Male	HDC HA 16 MC	1873890000
Female	HDC HA 16 FC	1873880000

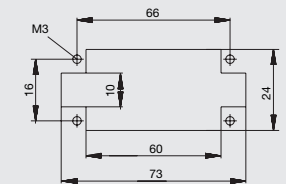
Dimensions



Arrangement of contacts



Mounting cut-out

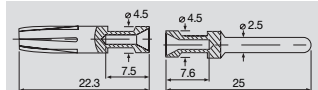


Accessories

Crimp contacts



Qty.	Male	Order No.	Female	Order No.
100	HDC-C-HE-SM0.5AG	1200500000	HDC-C-HE-BM0.5AG	1201100000
100	HDC-C-HE-SM0.75-1AG	1200600000	HDC-C-HE-BM0.75-1AG	1201200000
100	HDC-C-HE-SM1.5AG	1200700000	HDC-C-HE-BM1.5AG	1201300000
100	HDC-C-HE-SM2.5AG	1200800000	HDC-C-HE-BM2.5AG	1201400000
100	HDC-C-HE-SM4.0AG	1200900000	HDC-C-HE-BM4.0AG	1201500000
100	HDC-C-HE-SM0.5AU	1651420000	HDC-C-HE-BM0.5AU	1651470000
100	HDC-C-HE-SM0.75-1AU	1651430000	HDC-C-HE-BM0.75-1AU	1651480000
100	HDC-C-HE-SM1.5AU	1651440000	HDC-C-HE-BM1.5AU	1651490000
100	HDC-C-HE-SM2.5AU	1651450000	HDC-C-HE-BM2.5AU	1651500000
100	HDC-C-HE-SM4.0AU	1651460000	HDC-C-HE-BM4.0AU	1651510000



Single contacts

Conductor mm ²	AWG No.
0.50	20
0.75-1.00	18
1.50	16
2.50	14
4.00	12

Tools



Tool	Order No.
Crimping tool CTX CM 1.6/2.5	9018490000
Contact removal tool Removal Tool HE	1866750000

**Selection of Housings RockStar® IP65
Size 5**

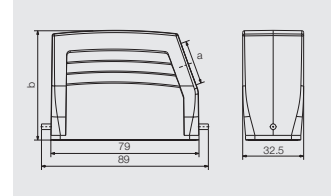


Hood

Hood, Cable Entry sideways



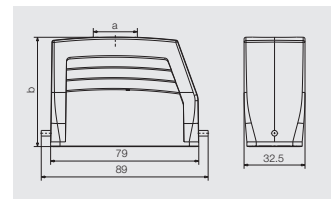
a	Version	Cover	b (mm)	Designation	Order No.
M 25	with thread		58	HDC 16A TSLU 1M25G	1788740000
M 20	with thread		72	HDC 25A TSLU 1M20G	1788680000
M 25	with thread		72	HDC 25A TSLU 1M25G	1788690000



Hood, Cable Entry at top



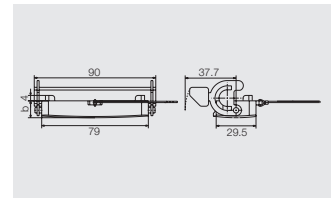
a	Version	Cover	b (mm)	Designation	Order No.
M 25	with thread		58	HDC 16A TOLU 1M25G	1788750000
M 20	with thread		72	HDC 25A TOLU 1M20G	1788710000
M 25	with thread		72	HDC 25A TOLU 1M25G	1788700000



Cover



Version	Designation	Order No.
for hoods	HDC 16A DODL 1LB	1665900000

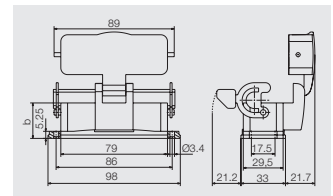


Base

Bulkhead housing



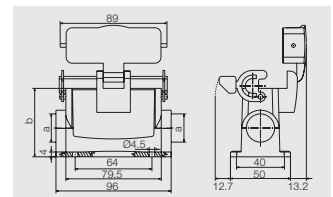
Version	Cover	b (mm)	Designation	Order No.
	with cover	44.5	HDC 16A ADLU	1664940000
		25	HDC 16A ALU	1664920000



Base housing



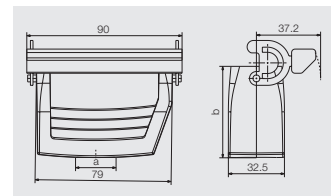
a	Version	Cover	b (mm)	Designation	Order No.
M 20	with thread	with cover	76.5	HDC 16A SDLU 2M20G	1788790000
M 25	with thread	with cover	76.5	HDC 16A SDLU 2M25G	1788780000
M 20	with thread		57	HDC 16A SLU 2M20G	1788770000
M 25	with thread		57	HDC 16A SLU 2M25G	1788760000



Coupling hood



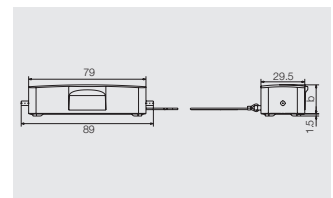
a	Version	Cover	b (mm)	Designation	Order No.
M 25	with thread		53	HDC 16A KLU 1M25G	1788800000



Cover



Version	Designation	Order No.
for bases	HDC 16A DMDL 2BO	1665910000



HA series - the slim connectors

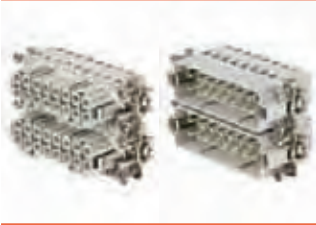
250 V, 16 A, Size 7

32 + ⊕

Inserts



Tension clamp connection



Insert	Designation	Order No.
Male	HDC HA 16 MT	1896830000
Female	HDC HA 16 FT	1896800000
Male	HDC HA 16 MT 17-32	1896840000
Female	HDC HA 16 FT 17-32	1896810000

Screw connection



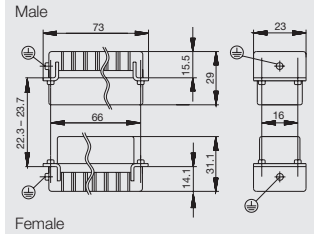
Insert	Designation	Order No.
Male	HDC HA 16 MS	1650770000
Female	HDC HA 16 FS	1650780000
Male	HDC HA 16 MS 17-32	1650880000
Female	HDC HA 16 FS 17-32	1650900000

Crimp connection

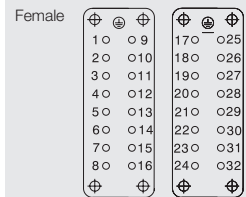
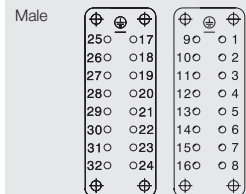


Insert	Designation	Order No.
Male	HDC HA 16 MC	1873890000
Female	HDC HA 16 FC	1873880000
Male	HDC HA 16 MC 17-32	1875620000
Female	HDC HA 16 FC 17-32	1876040000

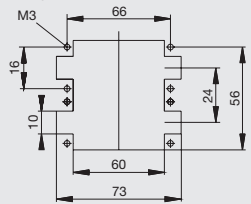
Dimensions



Arrangement of contacts



Mounting cut-out



Accessories

Crimp contacts

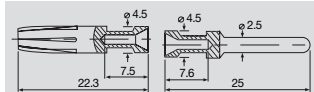
Surface silver



Surface gold



Qty.	Male	Order No.	Female	Order No.
100	HDC-C-HE-SM0.5AG	1200500000	HDC-C-HE-BM0.5AG	1201100000
100	HDC-C-HE-SM0.75-1AG	1200600000	HDC-C-HE-BM0.75-1AG	1201200000
100	HDC-C-HE-SM1.5AG	1200700000	HDC-C-HE-BM1.5AG	1201300000
100	HDC-C-HE-SM2.5AG	1200800000	HDC-C-HE-BM2.5AG	1201400000
100	HDC-C-HE-SM4.0AG	1200900000	HDC-C-HE-BM4.0AG	1201500000
100	HDC-C-HE-SM0.5AU	1651420000	HDC-C-HE-BM0.5AU	1651470000
100	HDC-C-HE-SM0.75-1AU	1651430000	HDC-C-HE-BM0.75-1AU	1651480000
100	HDC-C-HE-SM1.5AU	1651440000	HDC-C-HE-BM1.5AU	1651490000
100	HDC-C-HE-SM2.5AU	1651450000	HDC-C-HE-BM2.5AU	1651500000
100	HDC-C-HE-SM4.0AU	1651460000	HDC-C-HE-BM4.0AU	1651510000



Single contacts

Conductor mm ²	AWG No.
0.50	20
0.75-1.00	18
1.50	16
2.50	14
4.00	12

Tools



Tool	Order No.
Crimping tool CTX CM 1.6/2.5	9018490000
Contact removal tool Removal Tool HE	1866750000

Selection of Housings RockStar® IP65
Size 7

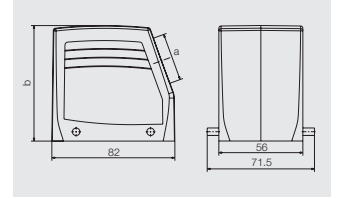


Hood

Hood, Cable Entry sideways



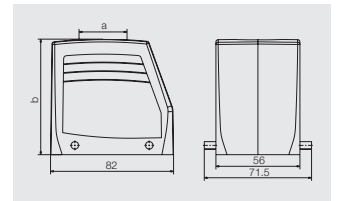
a	Version	Cover	b (mm)	Designation	Order No.
M 25	with thread		75	HDC 32A TSBU 1M25G	1787960000
M 32	with thread		75	HDC 32A TSBU 1M32G	1787950000



Hood, Cable Entry at top



a	Version	Cover	b (mm)	Designation	Order No.
M 32	with thread		75	HDC 32A TOBU 1M32G	1787990000

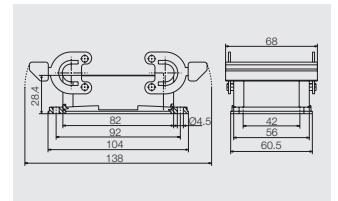


Base

Bulkhead housing



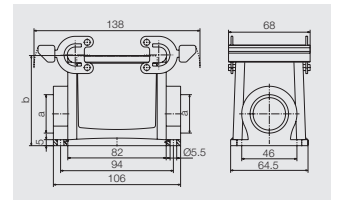
Version	Cover	b (mm)	Designation	Order No.
		25	HDC 32A ABU	1665860000



Base housing



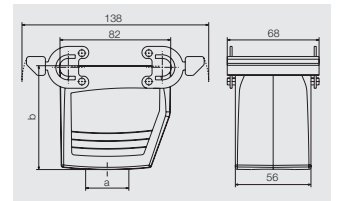
a	Version	Cover	b (mm)	Designation	Order No.
M 25	with thread		75	HDC 32A SBU 2M25G	1788040000



Coupling hood



a	Version	Cover	b (mm)	Designation	Order No.
M 25	with thread		76.5	HDC 32A KBU 1M25G	1788080000
M 32	with thread		76.5	HDC 32A KBU 1M32G	1788070000



HA series - the slim connectors

250 V, 16 A, Size 9

48 + ⊕

Inserts



Tension clamp connection



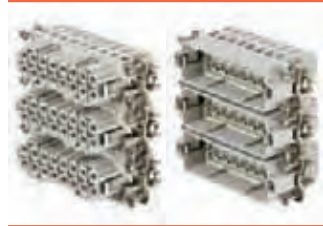
Insert	Designation	Order No.
Male	HDC HA 16 MT	1896830000
Female	HDC HA 16 FT	1896800000
Male	HDC HA 16 MT 17-32	1896840000
Female	HDC HA 16 FT 17-32	1896810000
Male	HDC HA 16 MT 33-48	1896850000
Female	HDC HA 16 FT 33-48	1896820000

Screw connection



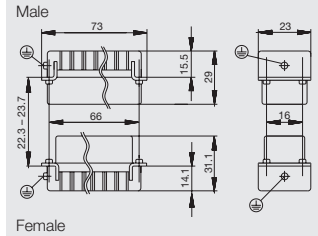
Insert	Designation	Order No.
Male	HDC HA 16 MS	1650770000
Female	HDC HA 16 FS	1650780000
Male	HDC HA 16 MS 17-32	1650880000
Female	HDC HA 16 FS 17-32	1650900000
Male	HDC HA 16 MS 33-48	1650990000
Female	HDC HA 16 FS 33-48	1651020000

Crimp connection

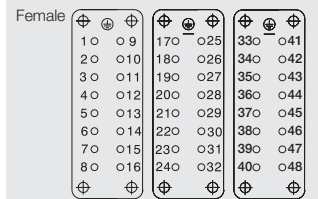
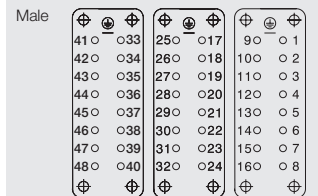


Insert	Designation	Order No.
Male	HDC HA 16 MC	1873890000
Female	HDC HA 16 FC	1873880000
Male	HDC HA 16 MC 17-32	1875620000
Female	HDC HA 16 FC 17-32	1876040000
Male	HDC HA 16 MC 33-48	1875630000
Female	HDC HA 16 FC 33-48	1875540000

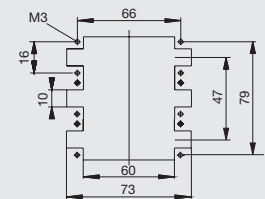
Dimensions



Arrangement of contacts



Mounting cut-out



Accessories

Crimp contacts

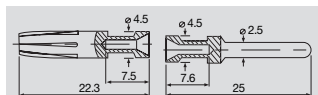
Surface silver



Surface gold



Qty.	Male	Order No.	Female	Order No.
100	HDC-C-HE-SM0.5AG	1200500000	HDC-C-HE-BM0.5AG	1201100000
100	HDC-C-HE-SM0.75-1AG	1200600000	HDC-C-HE-BM0.75-1AG	1201200000
100	HDC-C-HE-SM1.5AG	1200700000	HDC-C-HE-BM1.5AG	1201300000
100	HDC-C-HE-SM2.5AG	1200800000	HDC-C-HE-BM2.5AG	1201400000
100	HDC-C-HE-SM4.0AG	1200900000	HDC-C-HE-BM4.0AG	1201500000
100	HDC-C-HE-SM0.5AU	1651420000	HDC-C-HE-BM0.5AU	1651470000
100	HDC-C-HE-SM0.75-1AU	1651430000	HDC-C-HE-BM0.75-1AU	1651480000
100	HDC-C-HE-SM1.5AU	1651440000	HDC-C-HE-BM1.5AU	1651490000
100	HDC-C-HE-SM2.5AU	1651450000	HDC-C-HE-BM2.5AU	1651500000
100	HDC-C-HE-SM4.0AU	1651460000	HDC-C-HE-BM4.0AU	1651510000



Single contacts

Conductor mm ²	AWG No.
0.50	20
0.75-1.00	18
1.50	16
2.50	14
4.00	12

Tools



Tool	Order No.
Crimping tool CTX CM 1.6/2.5	9018490000
Contact removal tool Removal Tool HE	1866750000

Selection of Housings RockStar® IP65
Size 9

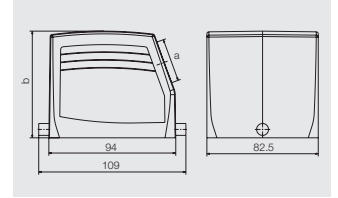


Hood

Hood, Cable Entry sideways



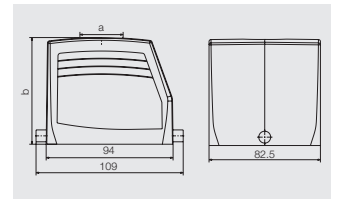
a	Version	Cover	b (mm)	Designation	Order No.
M 32	with thread		79	HDC 48A TSLU 1M32G	1788550000



Hood, Cable Entry at top



a	Version	Cover	b (mm)	Designation	Order No.
M 32	with thread		79	HDC 48A TOLU 1M32G	1788560000

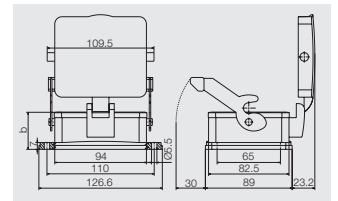


Base

Bulkhead housing



Version	Cover	b (mm)	Designation	Order No.
	with cover	53	HDC 48A ADLU	1666750000
		36	HDC 48A ALU	1666740000



Base housing



a	Version	Cover	b (mm)	Designation	Order No.
M 32	with thread		79	HDC 48A SLU 2M32G	1788570000

