

SPPC-HK Connectors - Introduction

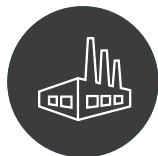
Single Pole Power Connector up to 400A



HOOK series offers new opportunities of using the electrical connection even in applications where in the past this was not possible due to low cost requirements and without renouncing to a complete range of features concerning robustness, reliability and safety.

APPLICATIONS:

- Power distribution
- Utilities
- Electric Vehicles
- Railway Equipment
- Military Field Power
- Mobile Generators
- Loadbanks
- Back-up Power Systems



KEY CHARACTERISTICS

- brass contacts for current up to 250A and cable section from 16 to 70 mm² or from 4 to 2/0AWG
- copper contacts for current up to 400A and cable section from 95 to 120 mm² or for 4/0AWG
- 500 mating cycles minimum
- IP67 sealed when mated
- EN/ESI compliant creepage and clearance distances
- UL 94V0 flame retardant insulating material
- EN/CE compliant metric cable glands
- Cable sizes from 16 to 120 mm² or from 4 to 4/0 AWG
- Set screw and crimp contact versions
- Multi-louver contact version
- CE compliant

Drain cable connectors are typically used as the live or supply side of the circuit. They are finger protected in the un-mated condition to meet the requirements IP2X. They protect the user from accidental contact with any live elements.

Source cable connectors are typically used as the load side of the circuit.

The cable connectors are either available:

- With set screw terminal (with or without crimping sleeves) for cable section from 16 to 70 mm² or from 4 to 2/0AWG
- With crimp termination for cable sections up to 120 mm² or for 4/0AWG

A plastic water tight strain relief is supplied to provide IP67 sealing.

Drain panel connector are typically used as the live or supply side of the circuit. They are finger protected in the un-mated condition to meet the requirements IP2X.

Source panel connectors are typically used as the load side of the circuit.

Panel connectors can be either front or rear mounted on equipment while maintaining EN/ESI creepage and clearance distances, and are supplied in brass material (up to 250A) or in copper material (up to 400A) versions. These connectors have M12 threaded post termination and are supplied with pre-installed contacts.

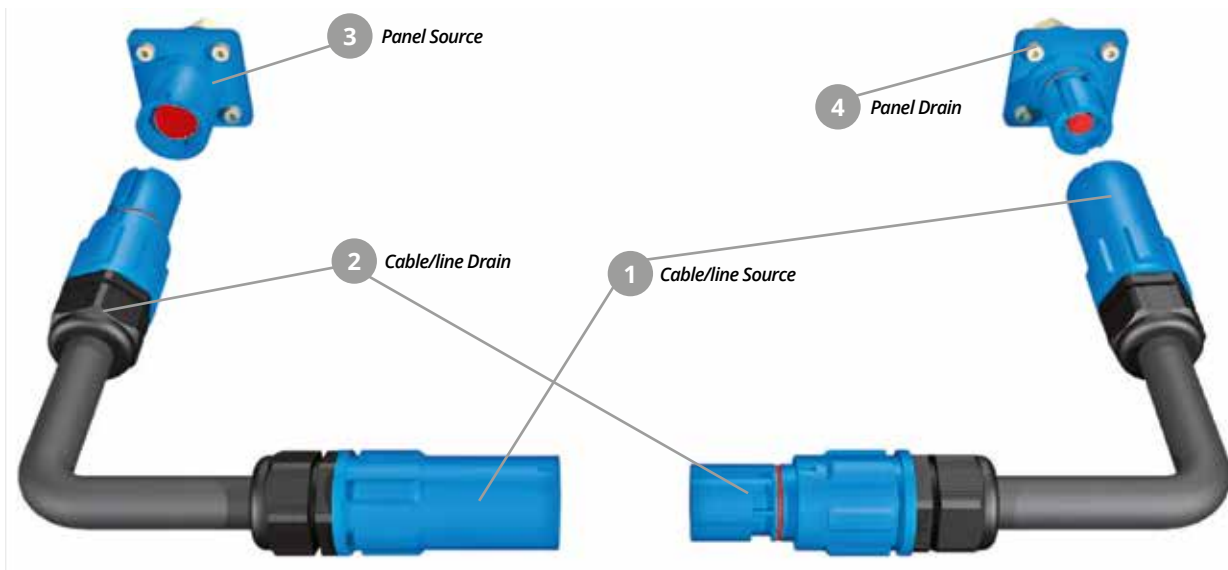
SPPC-HK Connectors - Introduction

Single Pole Power Connector up to 400A

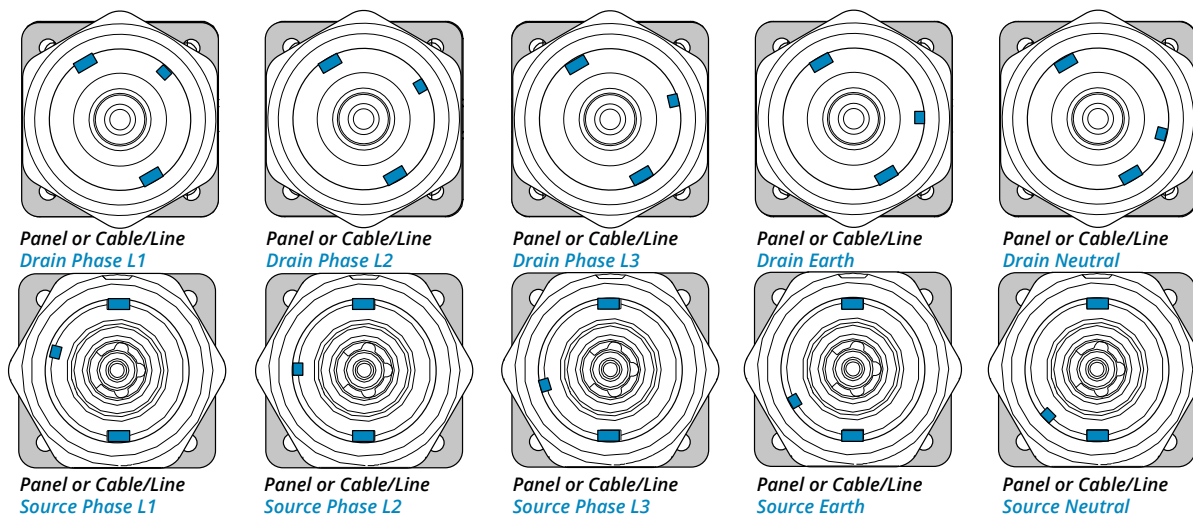
POWER CONNECTORS TYPES:

- **Source: Socket** connector is the source of the power, it receives and holds the Pin connector.
- **Drain: Pin** connectors receives and holds the Socket connector.
- **Cable/line: source (1) or drain (2)** is a moveable connectors fitted to a cable. The contacts are available in crimp or screw terminal.
- **Panel: source (3) or drain (4)** receptacle connectors to be fixed to a panel.

Power connectors cannot be mated/unmated under voltage or underloaded.



MECHANICALLY KEYED TO PREVENT CONNECTION ERRORS



COLOUR CODING.

Standard	Phase L1	Phase L2	Phase L3	Earth	Neutral
Europe	Brown (BR)	Black (BK)	Grey (GY)	Green (GN)	Blue (BU)

SPPC-HK Connectors - Part number explanation



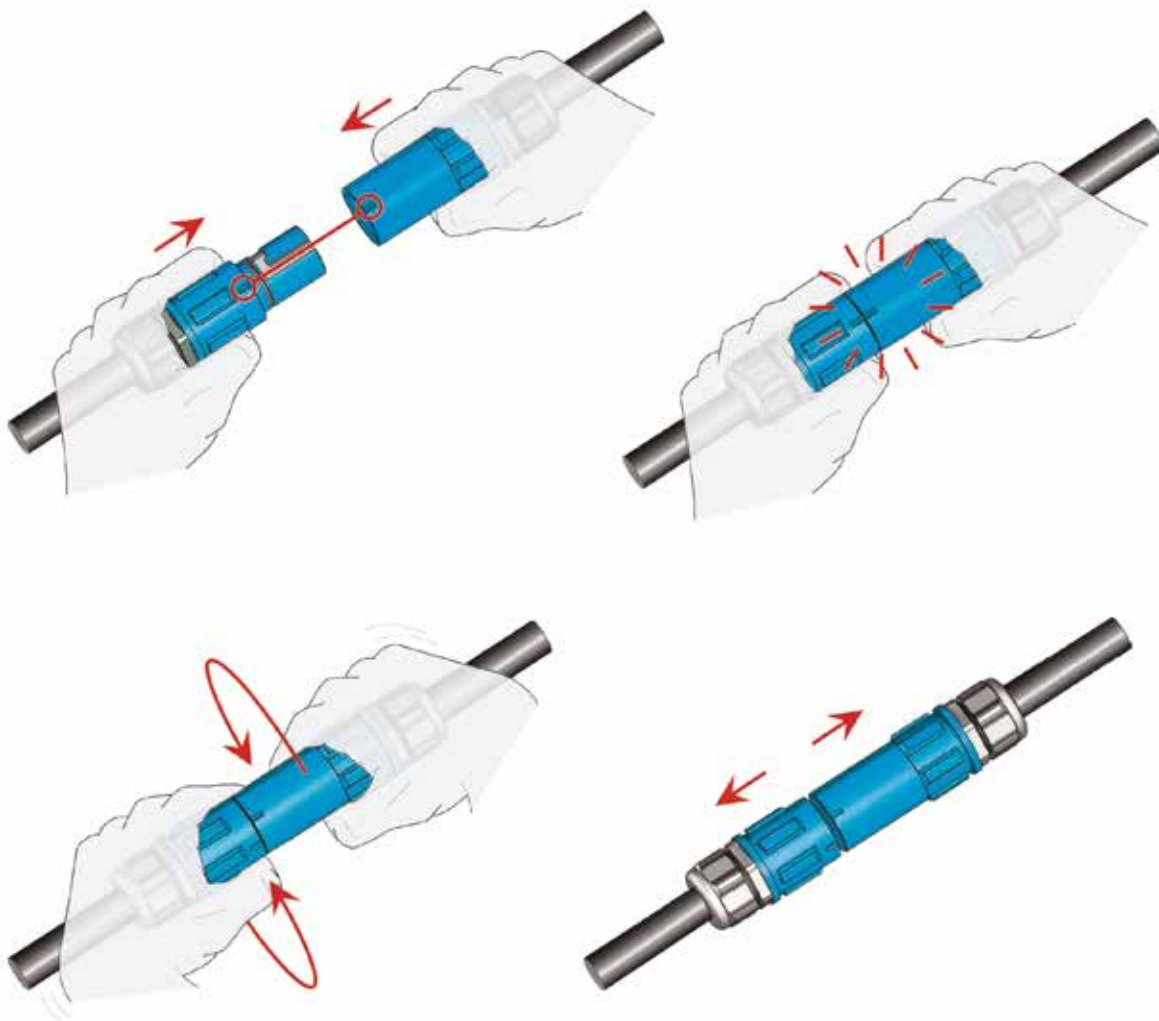
P/N Sample: SPPC-HK-LS-L1-BR-C-120-M

SPPC-HK	Series Code	SPPC-HK	Single Pole Power Connectors
LS	Connector Type	LS	Cable/Line Source
		LD	Cable/Line Drain
		PS	Panel Source
		PD	Panel Drain
L1	Key Position	E	Earth
		N	Neutral
		L1	Phase 1
		L2	Phase 2
		L3	Phase 3
BR	Insulator Color	BR	Brown
		BK	Black
		GY	Grey
		BU	Blue
		GN	Green
C-240	Contact Termination	M12-T2	M12 Threaded post – 250A
		M12-T4	M12 Threaded post – 400A
		S-70	Screw terminal – 250A up to 70mm ²
		C-70	Crimp contacts – 250A 70mm ²
		C-120	Crimp contacts – 400A 95mm ² - 120mm ²
M	Cable External diameter	S	7mm – 15mm
		M	11mm – 21mm
		OS	18mm – 25mm
	Microswitch	-	without microswitch
		SW	with normally open microswitch
		SWC	with normally closed microswitch
	Customization		

SPPC-HK Connectors - Introduction

Hook Mating System: a faster and more reliable connection

- Position major key alignment arrows
- Firmly push the Pin and Socket connectors together
- Rotate the Pin and Socket connectors in opposite direction until the padlock symbol is in alignment with the arrow symbol
- Release the connectors and they spring into the locked position.
- To unlock, push the connectors firmly together, rotate in opposite directions and pull apart



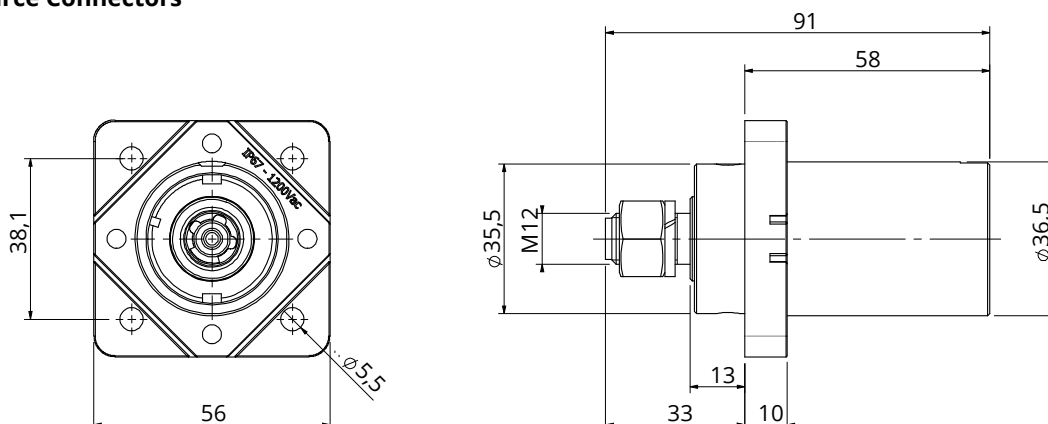
Unwanted uncoupling prevention: a simple cable tie makes the system safer.

The connectors can only be separated by removing it with a suitable tool.

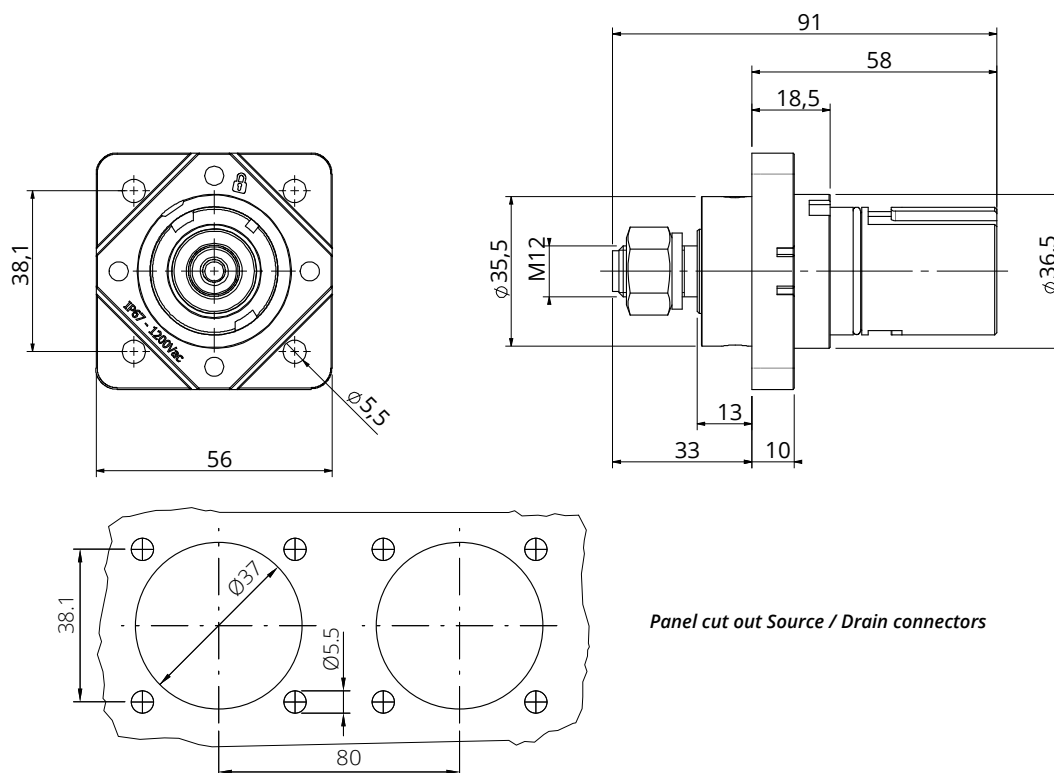


SPPC-HK Connectors - Dimensions

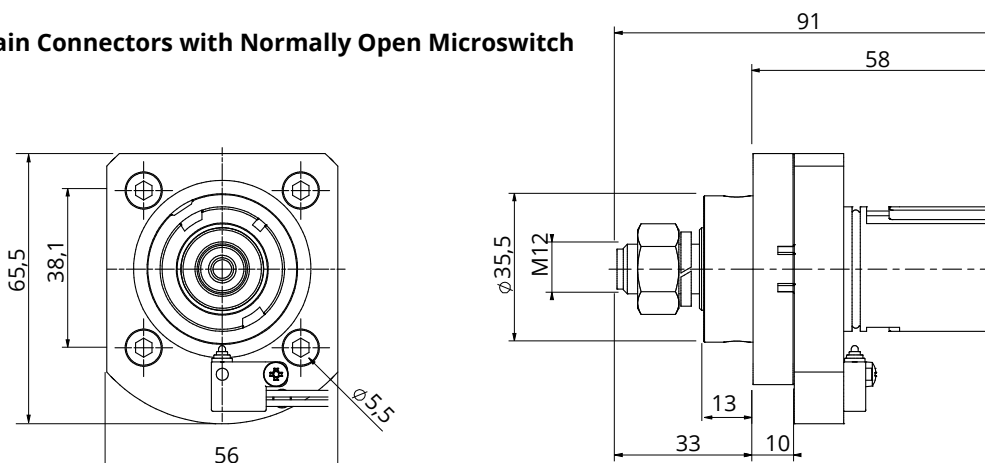
Panel Source Connectors



Panel Drain Connectors

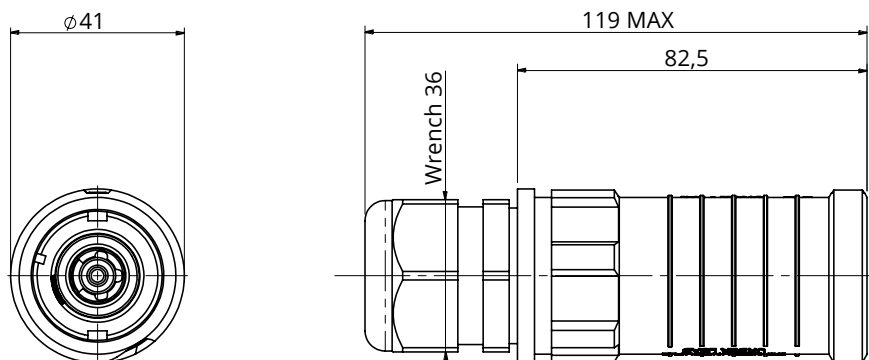


Panel Drain Connectors with Normally Open Microswitch

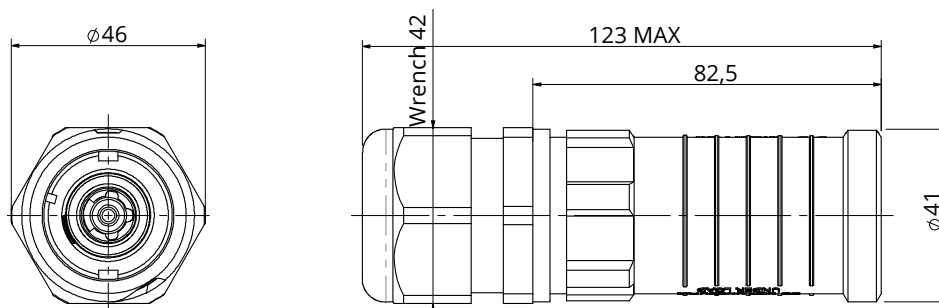


SPPC-HK Connectors - Dimensions

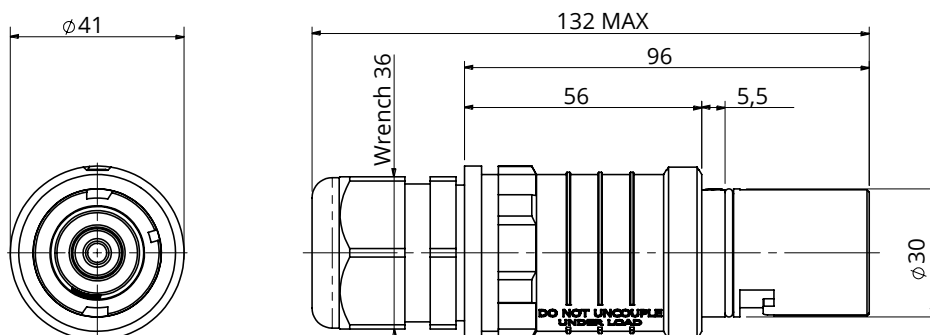
Cable/Line Source Connectors S/M (SPPC-HK-LS-xx-xx-x-xx-S / SPPC-HK-LS-xx-xx-x-xx-M)



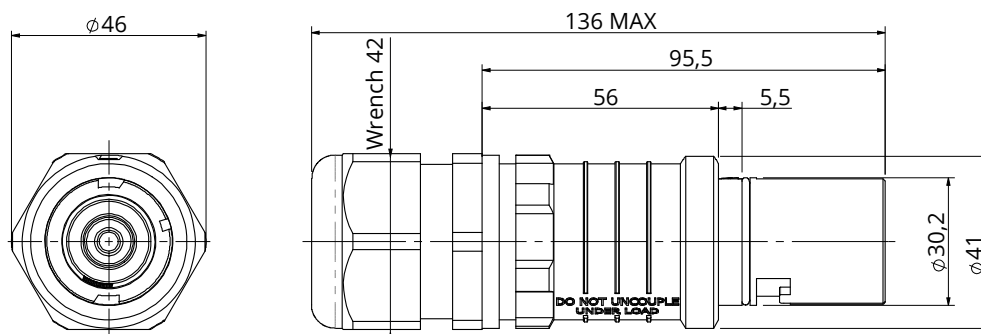
Cable/Line Source Connectors OS (SPPC-HK-LS-xx-xx-x-xx-OS)



Cable/Line Drain Connectors S/M (SPPC-HK-LD-xx-xx-x-xx-S / SPPC-HK-LD-xx-xx-x-xx-M)



Cable/Line Drain Connectors OS (SPPC-HK-LD-xx-xx-x-xx-OS)








SPPC-HK Connectors - Cable/Line Connectors - 1200V - 250/400A

Cable/Line Source Connectors





Sleeves included, for cable conductor size - 16 mm² - 25 mm² - 35 mm² - 50 mm² - 70 mm² (for 16 mm² - 25 mm² see page 46)



250A - Screws terminal for conductor up to 70mm²

Color*	Short Description	Part Number
 Brown - Phase L1	SPPC-HK-LS-L1-BR-S-70-M	VS440075
 Black - Phase L2	SPPC-HK-LS-L2-BK-S-70-M	VS440055
 Grey - Phase L3	SPPC-HK-LS-L3-GY-S-70-M	VS440076
 Blue - Neutral	SPPC-HK-LS-N-BU-S-70-M	VS440077
 Green - Earth	SPPC-HK-LS-E-GN-S-70-M	VS440078

400A - Crimp contacts 95mm² - 120mm²





Color*	Short Description	Part Number
 Brown - Phase L1	SPPC-HK-LS-L1-BR-C-120-OS	VS440056
 Black - Phase L2	SPPC-HK-LS-L2-BK-C-120-OS	VS440057
 Grey - Phase L3	SPPC-HK-LS-L3-GY-C-120-OS	VS440062
 Blue - Neutral	SPPC-HK-LS-N-BU-C-120-OS	VS440064
 Green - Earth	SPPC-HK-LS-E-GN-C-120-OS	VS440063

Cable/Line Drain Connectors

Sleeves included, for cable conductor size - 16 mm² - 25 mm² - 35 mm² - 50 mm² - 70 mm² (for 16 mm² - 25 mm² see page 46)



250A - Screws terminal for conductor up to 70mm²

Color*	Short Description	Part Number
 Brown - Phase L1	SPPC-HK-LD-L1-BR-S-70-M	VS440002
 Black - Phase L2	SPPC-HK-LD-L2-BK-S-70-M	VS440054
 Grey - Phase L3	SPPC-HK-LD-L3-GY-S-70-M	VS440073
 Blue - Neutral	SPPC-HK-LD-N-BU-S-70-M	VS440074
 Green - Earth	SPPC-HK-LD-E-GN-S-70-M	VS440036

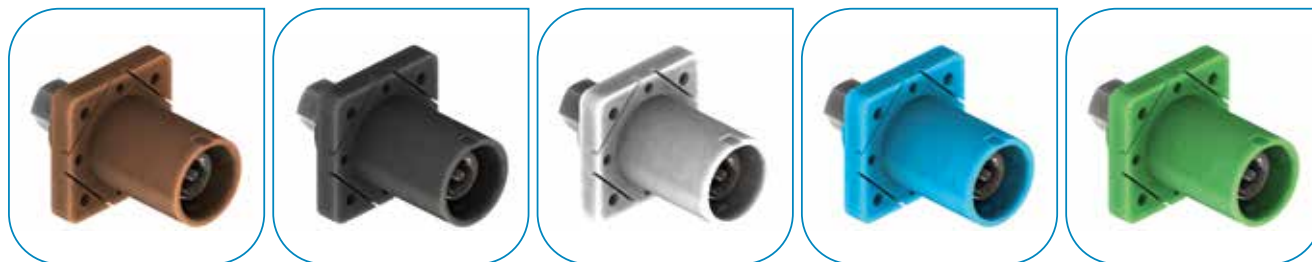
400A - Crimp contacts 95mm² - 120mm²

Color*	Short Description	Part Number
 Brown - Phase L1	SPPC-HK-LD-L1-BR-C-120-OS	VS440028
 Black - Phase L2	SPPC-HK-LD-L2-BK-C-120-OS	VS440029
 Grey - Phase L3	SPPC-HK-LD-L3-GY-C-120-OS	VS440030
 Blue - Neutral	SPPC-HK-LD-N-BU-C-120-OS	VS440027
 Green - Earth	SPPC-HK-LD-E-GN-C-120-OS	VS440026

*European Harmonized Color Set, others colors set on request

SPPC-HK Connectors - Panel Connectors - 1200V - 250/400A

Panel Source Connectors



250A - M12 Threaded post for conductor up to 70mm²

Color*	Short Description	Part Number
Brown - Phase L1	SPPC-HK-PS-L1-BR-M12-T2	VS440004
Black - Phase L2	SPPC-HK-PS-L2-BK-M12-T2	VS440017
Grey - Phase L3	SPPC-HK-PS-L3-GY-M12-T2	VS440071
Blue - Neutral	SPPC-HK-PS-N-BU-M12-T2	VS440072
Green - Earth	SPPC-HK-PS-E-GN-M12-T2	VS440018

400A - M12 Threaded post for conductor up to 120mm²

Color*	Short Description	Part Number
Brown - Phase L1	SPPC-HK-PS-L1-BR-M12-T4	VS440033
Black - Phase L2	SPPC-HK-PS-L2-BK-M12-T4	VS440034
Grey - Phase L3	SPPC-HK-PS-L3-GY-M12-T4	VS440035
Blue - Neutral	SPPC-HK-PS-N-BU-M12-T4	VS440032
Green - Earth	SPPC-HK-PS-E-GN-M12-T4	VS440031

Panel Drain Connectors



250A - M12 Threaded post for conductor up to 70mm²

Color*	Short Description	Part Number
Brown - Phase L1	SPPC-HK-PD-L1-BR-M12-T2	VS440024
Black - Phase L2	SPPC-HK-PD-L2-BK-M12-T2	VS440025
Grey - Phase L3	SPPC-HK-PD-L3-GY-M12-T2	VS440069
Blue - Neutral	SPPC-HK-PD-N-BU-M12-T2	VS440070
Green - Earth	SPPC-HK-PD-E-GN-M12-T2	VS440001

400A - M12 Threaded post for conductor up to 120mm²






Color*	Short Description	Part Number
Brown - Phase L1	SPPC-HK-PD-L1-BR-M12-T4	VS440011
Black - Phase L2	SPPC-HK-PD-L2-BK-M12-T4	VS440065
Grey - Phase L3	SPPC-HK-PD-L3-GY-M12-T4	VS440066
Blue - Neutral	SPPC-HK-PD-N-BU-M12-T4	VS440068
Green - Earth	SPPC-HK-PD-E-GN-M12-T4	VS440067

*European Harmonized Color Set, others colors set on request






SPPC-HK Connectors - Panel Drain Connectors - 1200V - 250/400A with Normally Open Microswitch



250A - M12 Threaded post for conductor up to 70mm²

Color*	Short Description	Part Number
 Brown – Phase L1	SPPC-HK-PD-L1-BR-M12-T2-SW	on request
 Black – Phase L2	SPPC-HK-PD-L2-BK-M12-T2-SW	on request
 Grey – Phase L3	SPPC-HK-PD-L3-GY-M12-T2-SW	on request
 Blue – Neutral	SPPC-HK-PD-N-BU-M12-T2-SW	on request
 Green – Earth	SPPC-HK-PD-E-GN-M12-T2-SW	on request

400A - M12 Threaded post for conductor up to 120mm²

Color*	Short Description	Part Number
 Brown – Phase L1	SPPC-HK-PD-L1-BR-M12-T4-SW	on request
 Black – Phase L2	SPPC-HK-PD-L2-BK-M12-T4-SW	on request
 Grey – Phase L3	SPPC-HK-PD-L3-GY-M12-T4-SW	on request
 Blue – Neutral	SPPC-HK-PD-N-BU-M12-T4-SW	on request
 Green – Earth	SPPC-HK-PD-E-GN-M12-T4-SW	on request

**European Harmonized Color Set, others colors set on request*

SPPC-HK Connectors - Crimping Tool

It is recommended to apply multiple crimp compressions in accordance with the above table to obtain optimum mechanical and electrical performance.

The correct sequence of compressions is shown in Fig.2.

Use the following tool:

- Hand operated crimp tool: HT120

Due to the numerous cable types available, it is recommended to contact our Customer Service to confirm cable & crimp suitability.

Cable Size	Up to 70mm ²	95mm ²	120mm ² AWG 4/0
Insulation Strip (dim L)	26mm	20mm	20mm
Recommended Number of Crimps	N/A (set screw)	2	2
Hand Operated Crimp Tool	N/A	HT120	HT120
Crimp Die Set	N/A	ME24-C	ME29-C
Contact Removal Tool	VS750070	VS750070	VS750070

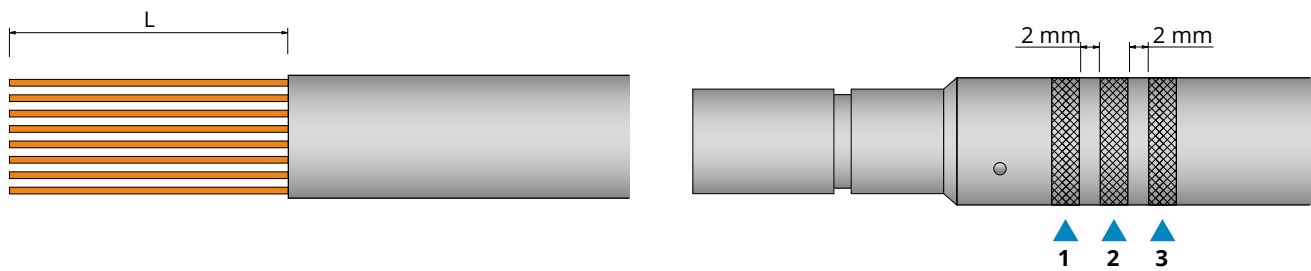


Fig.2

Hand Operated Crimp Tool HT120



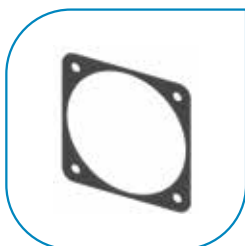
SPPC-HK Connectors - Accessories



Cable Gland - for Cable/Line Connectors

Type	Short Description	Part Number
M32 threaded 7mm – 15mm	SPPC-HK-M32-S	VS750061
M32 threaded 11mm-21mm	SPPC-HK-M32-M	VS750060
M32 threaded 15mm-25mm	SPPC-HK-M32-OS	*

** On request*



Panel Gasket

Type	Short Description	Part Number
Neoprene Gaskets	SPPC-HK-PG	750032

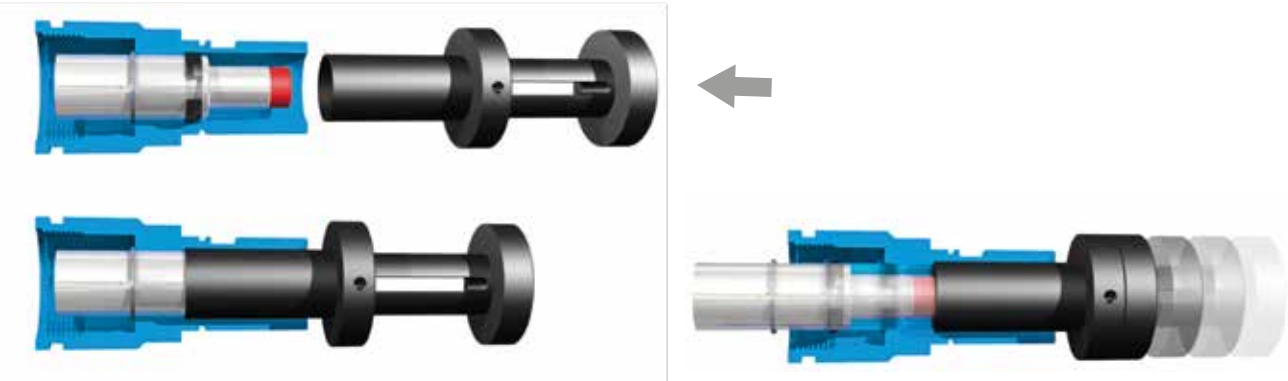


Sleeve For Screw Terminal for cable conductor size - 16 mm² - 25 mm²

Type	Short Description	Part Number
Sleeve	SPPC-HK-SL1625	VS750064

It is mandatory to use the bolts supplied with the kit

SPPC-HK Connectors - Contact Removal Tool



The contacts are inserted from the rear and snap into position within the insulator with no requirements for any cotter/dowel pin or assembly tool. The contacts are removed from the insulator by using a simple tool to release the retaining clip.

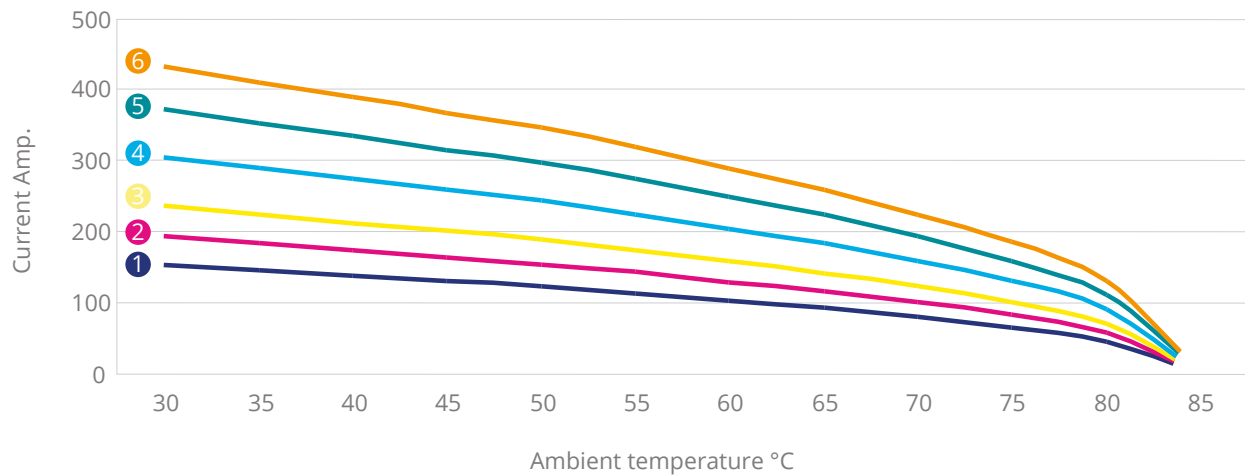
- Improved mechanical insulator strength
- Reliable sealing
- Improved electrical integrity of the insulator
- Reduced assembly times
- The contacts can be removed and replaced

No replacement parts (cotter/dowel pins) are required.

Type	Short Description	Part Number
Crimp and Screw contacts	SPPC-HK-RT	VS750070

SPPC-HK Connectors

Derating data for 85°C rubber insulated cables



① 25mm² ② 35mm² ③ 50mm² ④ 70mm² ⑤ 95mm² ⑥ 120mm²

Characteristics

Operating Voltage	1200V AC or DC
Maximum panel thickness to guarantee insulation	6mm
Panel contact tightening torque	30Nm Max
Screws tightening torque (in-line connectors)	12Nm
Contact retention in Insulator	400N axial load
Inline contact retention	Plastic Clip
Panel mount contact retention	Dowel Pin
Contact release	Front
M32 Clamping range	7mm ÷ 25mm
Flammability	UL94 V0
Environmental sealing (when mated)	IP67
Connector protection (unmated)	IP2X
Rated voltage to Earth	1750Vac, panel thickness<4mm 1200Vac, panel thickness>4mm
Contact resistance	<0.1mΩ
Short circuit current	11KA - 1 seconds
Short circuit current	4KA - 3 seconds
Surge current (din VDE 0102/1.90)	45KA - 10 mseconds
Temperature range	-30°C/+120°C