



# SEK 18 male standard solder and wire-wrap



## General information

|                                     |                                                                     |                                            |                  |
|-------------------------------------|---------------------------------------------------------------------|--------------------------------------------|------------------|
| Design                              | IEC 60603-13                                                        |                                            |                  |
| No. of contacts                     | 6, 10, 14, 16, 20, 24 (only for solder), 26, 30, 34, 40, 50, 60, 64 |                                            |                  |
| Contact spacing                     | 2,54 mm x 2,54 mm                                                   |                                            |                  |
| Test voltage Ur.m.s                 | 1 kV                                                                |                                            |                  |
| Working voltage                     | 500 V for pollution degree 1                                        |                                            |                  |
| Contact resistance                  | max. 20mOhm                                                         |                                            |                  |
| Insulation resistance               | min. 10 <sup>9</sup> Ohm                                            |                                            |                  |
| Working current acc. to IEC 60512-2 | See derating diagram                                                |                                            |                  |
| Temperature range                   | -55°C ... +125°C                                                    |                                            |                  |
| Termination technology              | solder, wire wrap                                                   |                                            |                  |
| Clearance & creepage distance       | min. 0,5 mm clearance, min. 0,56 creepage                           |                                            |                  |
| Insertion and withdrawal forces     | 6-pole max. 12N for PL1-2 / 18N for PL3                             | 30-pole max. 60N for PL1-2 / 90N for PL3   |                  |
|                                     | 10-pole max. 20N for PL1-2 / 30N for PL3                            | 34-pole max. 68N for PL1-2 / 102N for PL3  |                  |
|                                     | 14-pole max. 28N for PL1-2 / 42 for PL3                             | 40-pole max. 80N for PL1-2 / 120N for PL3  |                  |
|                                     | 16-pole max. 32N for PL1-2 / 48N for PL3                            | 50-pole max. 100N for PL1-2 / 150N for PL3 |                  |
|                                     | 20-pole max. 40N for PL1-2 / 60N for PL3                            | 60-pole max. 120N for PL1-2 / 180N for PL3 |                  |
|                                     | 24-pole max. 48N for PL1-2 / 72N for PL3 (only for solder)          | 64-pole max. 128N for PL1-2 / 192N for PL3 |                  |
|                                     | 26-pole max. 52N for PL1-2 / 78N for PL3                            |                                            |                  |
| Mating cycles                       | S4 surface treatment                                                | Au over PdNi (min. 0,76 µm)                |                  |
|                                     | PL 1 acc. to IEC 60603-13                                           | 500 mating cycles                          | 10 days gas test |
|                                     | PL 2 acc. to IEC 60603-13                                           | 250 mating cycles                          | 4 days gas test  |
|                                     | PL 3 acc. to IEC 60603-13                                           | 50 mating cycles                           | No gas test      |
| UL file                             | E 102079                                                            |                                            |                  |
| RoHS - compliant                    | Yes                                                                 |                                            |                  |
| Leadfree                            | Yes                                                                 |                                            |                  |
| Hot plugging                        | No                                                                  |                                            |                  |

## Insulator material

|                                 |                                                     |
|---------------------------------|-----------------------------------------------------|
| Material                        | PBT (thermoplastics, glass fiber reinforcement 30%) |
| Color                           | Black (RAL 7001) or grey (RAL 7032)                 |
| UL classification               | UL94-V0                                             |
| Material group acc. IEC 60664-1 | IIIa (175 < CTI < 400)                              |
| NF F 16-101 classification      | I3, F3                                              |

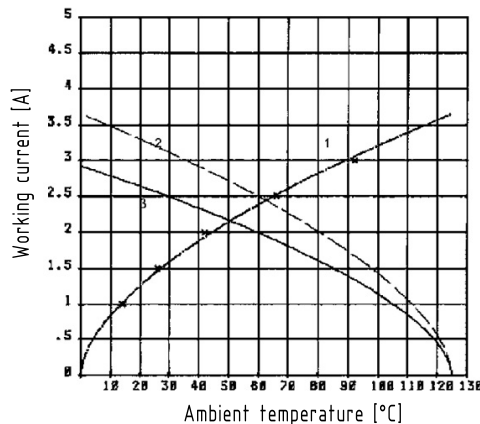
## Contact material

|                          |                                      |
|--------------------------|--------------------------------------|
| Contact material         | Copper alloy                         |
| Plating termination zone | Sn over Ni                           |
| Plating contact zone     | PL 1, 3: Au / PL 2, S4: Au over PdNi |

## Derating diagram acc to IEC 60512-2 (Current carrying capacity)

The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals.  
The current capacity-curve is valid for continuous, not interrupted current-loaded contacts of connectors when simultaneous power on all contacts is given without exceeding the maximum temperature.  
Control and test procedures according to DIN IEC 60512.

- 1) Temperature rise
- 2) Derating
- 3) Derating curve at I max x 0.8(IEC 60512-2)



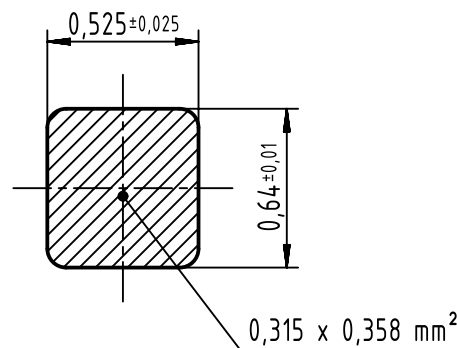
## Soldering instructions

The connectors should be protected when being soldered in a dip, flow or film soldering baths. Otherwise, they might become contaminated as a result of soldering operations or deformed as a result of overheating.

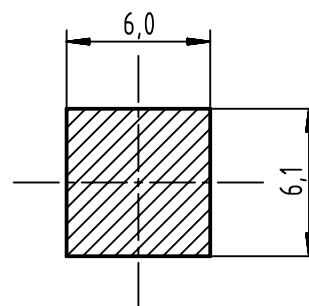
(1) For prototypes and short runs protect the connectors with an industrial adhesive tape, e.g. Tesaband 4331 ([www.tesa.de](http://www.tesa.de)). Cover the underside of the connector moulding and the adjacent parts of the pcb as well as the open sides of the connector. This will prevent heat and gases of the soldering apparatus from damaging the connector. About 140 + 5 mm of the tape should suffice.

(2) For large series a jig is recommended. Its protective cover with a fast action mechanical locking device shields the connectors from gas and heat generated by the soldering apparatus. As an additional protection a foil can be used for covering the parts that should not be soldered.

## Cross section of solder terminations



## Cross section of wire wrap terminations



## Packaging material (only for plastic tray)

|                 |                                                         |
|-----------------|---------------------------------------------------------|
| Material        | Polystyrol                                              |
| Color           | Yellow                                                  |
| Standardization | acc. to DIN EN / IEC 61340-5-1 and ANSI / ESD S541-2003 |

- Safe protection for electronic components against electrostatic charges

|                                                                                       |  |                                                    |  |                       |  |                       |  |                             |  |                    |  |                                                          |  |
|---------------------------------------------------------------------------------------|--|----------------------------------------------------|--|-----------------------|--|-----------------------|--|-----------------------------|--|--------------------|--|----------------------------------------------------------|--|
|  |  | All Dimensions in mm<br>Original Size DIN A3       |  | Scale<br>1:1          |  | Free size tol.        |  | Ref.                        |  |                    |  |                                                          |  |
|                                                                                       |  |                                                    |  |                       |  |                       |  | Sub.                        |  |                    |  |                                                          |  |
|  |  | All rights reserved                                |  | Created by<br>STORCK  |  | Inspected by<br>TADJE |  | Standardisation<br>HOFFMANN |  | Date<br>2018-01-18 |  | State<br>Final Release                                   |  |
|                                                                                       |  | Department EC PD - DE                              |  |                       |  |                       |  |                             |  |                    |  |                                                          |  |
| HARTING Electronics GmbH<br><br>D-32339 Espelkamp                                     |  | Title<br>SEK 18 male standard solder and wire-wrap |  |                       |  |                       |  |                             |  |                    |  | Doc-Key / ECM-Nr.<br>100554638/UGD/001/F<br>500000130127 |  |
|                                                                                       |  | Type<br>DS                                         |  | Number<br>09181200001 |  |                       |  |                             |  |                    |  | Rev.<br>F                                                |  |

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