



**CALUS**

The connectors should be protected when being soldered in a dip, flow or film soldering bath. 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.

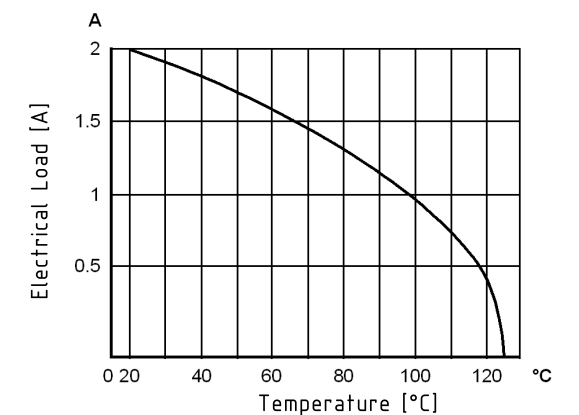
(2) For large series a jig is recommended. Its protective cover with a fast action mechanical locking device shields the connectors from gas and heat generated by the soldering apparatus. As an additional protection a foil can be used for covering the parts that should not be soldered.

Technical drawing of a rectangular part with dimensions and tolerances:

- Vertical dimension:  $0,6 - 0,025$
- Horizontal dimension:  $0,5 + 0,05$
- Surface texture symbol:  $0,29 - 0,33 \text{ mm}^2$

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, non 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 60512-5

|                               |                                         |                                  |
|-------------------------------|-----------------------------------------|----------------------------------|
| Design                        | IEC 60603-2                             | types: B, 2B, 3B, C, 2C, 3C male |
| No. of contacts               | max. 96                                 |                                  |
| Contact spacing               | 2,54mm                                  |                                  |
| Test voltage                  | 1000V                                   |                                  |
| Contact resistance            | max. 20mOhm                             |                                  |
| Insulation resistance         | min. 10 <sup>12</sup> Ohm               |                                  |
| Working current               | max. 2 A at 20°C (see derating diagram) |                                  |
| Temperature range             | -55°C ... +125°C                        |                                  |
| Termination technology        | solder pins                             |                                  |
| Clearance & creepage distance | min. 1,2 mm                             |                                  |

|                                |                 |                 |                 |
|--------------------------------|-----------------|-----------------|-----------------|
| Insertion and withdrawal force | 16pol. max. 15N | 20pol. max. 20N |                 |
|                                | 30pol. max. 30N | 32pol. max. 30N |                 |
|                                | 48pol. max. 45N | 64pol. max. 60N | 96pol. max. 90N |

|               |                                            |
|---------------|--------------------------------------------|
| Mating cycles | acc. to performance level, see table below |
|---------------|--------------------------------------------|

|         |         |
|---------|---------|
| UL file | E102079 |
|---------|---------|

|                  |     |
|------------------|-----|
| RoHS - compliant | Yes |
|------------------|-----|

|          |     |
|----------|-----|
| Leadfree | Yes |
|----------|-----|

|              |    |
|--------------|----|
| Hot plugging | No |
|--------------|----|

|                                    |                                                     |
|------------------------------------|-----------------------------------------------------|
| Material                           | PBT (thermoplastics, glass fiber reinforcement 30%) |
| Colour                             | RAL 7032 (grey)                                     |
| UL classification                  | UL 94-V0                                            |
| Material group acc. to IEC 60664-1 | IIIa ( $175 \leq CTI < 400$ )                       |
| NFF classification                 | I3, F4                                              |

|                          |                                            |
|--------------------------|--------------------------------------------|
| Contact material         | Copper alloy                               |
| Plating termination zone | Sn over Ni                                 |
| Plating contact zone     | acc. to performance level, see table below |

| performance level | mating cycles       |                                      | plating contact zone                              |
|-------------------|---------------------|--------------------------------------|---------------------------------------------------|
|                   | acc. to IEC 60603-2 | complementary<br>acc. to IEC 60603-2 |                                                   |
| 1                 | 500                 |                                      | Au over PdNi over Ni                              |
| 2                 | 400                 |                                      | Au over PdNi over Ni                              |
| 3                 | 50                  |                                      | Au over PdNi over Ni                              |
| NM30 (S4)         |                     | 500                                  | min. 0,76µm (30pinch) noble metal (alloy) over Ni |
| Au1               | 500                 |                                      | Au over Ni                                        |
| Au2               | 400                 |                                      | Au over Ni                                        |
| Au30              |                     | 500                                  | min. 0,76µm (30pinch) Au over Ni                  |
| Au50              |                     | 500                                  | min. 1,27µm (50pinch) Au over Ni                  |
| Au70              |                     | 500                                  | min. 1,60µm (70pinch) Au over Ni                  |
| Au90              |                     | 500                                  | min. 2,00µm (90pinch) Au over Ni                  |

Standard plating options highlighted in *italic*, other plating options are available on request.



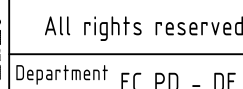
All Dimensions in mm  
Original Size DIN A3

Scale  
1:1

|  |                |
|--|----------------|
|  | Free size tol. |
|--|----------------|

|      |
|------|
| Ref. |
|------|

|      |  |
|------|--|
| Sub. |  |
|------|--|



Created by  
STORCK

Inspected by  
ELLERMANN

Standardisation  
HOFFMANN

Date  
2018-05-18

State  
Final Release

|       |                           |
|-------|---------------------------|
| Title | DIN Signal male connector |
|-------|---------------------------|

Doc-Key / ECM-Nr.  
100580147/UGD/000/B  
500000135338

HARTING Electronics GmbH

D-32339 Espelkamp

Type DS

|        |             |
|--------|-------------|
| Number | 09031200201 |
|--------|-------------|

Rev. **B**Page  
1/1

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