



Mini Coax connector



General information

| | | | |
|-----------------------|---|---------------------------|--|
| Design | according to IEC 61076-4-100 | | |
| No. of contacts | 2,4,6,8 or 10 for board connectors | 1-10 for cable connectors | |
| Grid pattern | 4,40mm x 6,25mm (within a twin x between twins) 8,80mm for Mini Coax single-row connectors (between lines) | | |
| Test voltage | max. 1000V for 60s | | |
| Contact resistance | centre contact max. 12mOhm ground contact max. 6mOhm | | |
| Insulation resistance | min. 50Ohm | | |
| Power | max. 40W (at 2,5Ghz) | | |
| Frequency range | DC ... 2,5GHz | | |
| Nominal impedance | 500hm | | |
| Return loss | max. -20dB | | |
| VSWR | max. 1,2 (DC ... 2,5GHz for the connector interface with suitable termination) | | |
| Insertion loss | max. 0,25 dB (DC ... 2,5GHz for the connector interface only) | | |

| Near end cross talk (NEXT) | Pin distance | Board-to-Board | Board-to-Cable | Cable-to-Cable |
|-----------------------------|----------------------------|----------------|----------------|----------------|
| | $\Delta x = 4,40\text{mm}$ | 50dB | 60dB | 90dB |
| $\Delta x = 6,25\text{mm}$ | 60dB | 70dB | 90dB | |
| $\Delta x = 7,64\text{mm}$ | 75dB | 80dB | 90dB | |
| $\Delta x = 8,80\text{mm}$ | - | 75dB | - | |
| $\Delta x = 12,50\text{mm}$ | 90dB | 90dB | 90dB | |

| | | | |
|---------------------------------|---|---------------|--|
| Temperature range | -55°C ... +125°C | | |
| Termination technology | press-in | | |
| Mating force | max. 10N / contact | | |
| Withdrawal force | min. 1N / contact | | |
| Mating cycles | 500 | | |
| Mating distance | 12,5mm ... 15mm | | |
| Wiping length | 2,5mm | | |
| Acceptable radial mating offset | max. 1,5mm; max. angle 0,5° (for mounting with HARTING counterpart) | | |
| PCB thickness | daughtercard | 1,4mm - 3,2mm | |
| | backplane | 1,6mm - 8,0mm | |
| UL file | E102079 | | |
| RoHS - compliant | Yes | | |
| Leadfree | Yes | | |

Insulator material

| | |
|---------------------------------|------------------------------|
| Material | LCP (Liquid Cristal Polymer) |
| Color | nature |
| UL classification | UL 94-V0 |
| Material group acc. IEC 60664-1 | IIIa (175 ≤ CTI < 400) |

Contact material

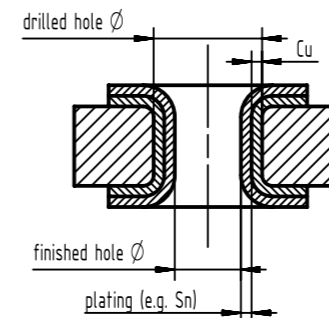
| | |
|--------------------------|--------------------------------------|
| Contact material | Copper alloy |
| Plating termination zone | Ni for ground pin, Au for centre pin |
| Plating contact zone | Au over Ni |

Cable connectors

Cable connectors are fully assembled on Mini Coax side by HARTING, free conductors side can also be assembled by customer

Recommended configuration of plated through holes for press-in termination

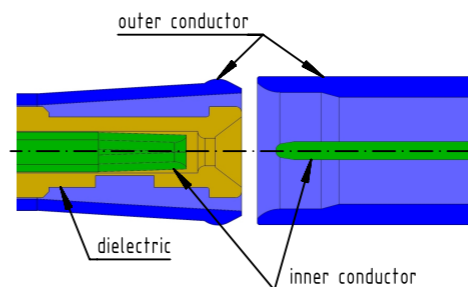
In addition to the hot-air-level (HAL), other PCB surfaces are getting more important. Due to their different properties - such as mechanical strength and coefficient of friction - we recommend the following configuration of PCB through holes.



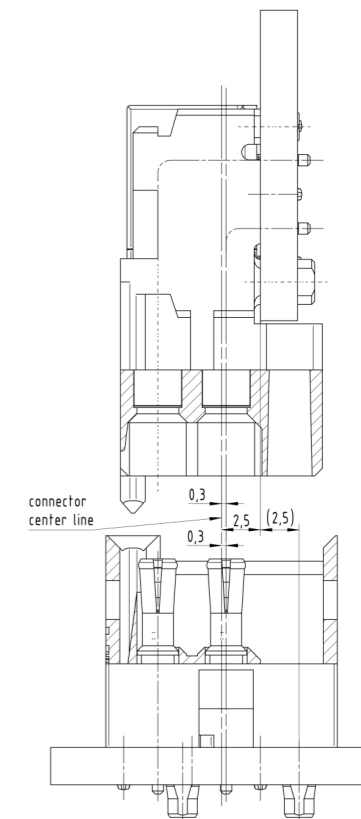
| Plating | Drilled hole Ø | Plating | Plated hole Ø |
|---|----------------|---------|---------------|
| Tin plated PCB (HAL) acc. to EN 60352-5 | 1,15±0,025 mm | Cu | min. 25µm |
| | | Sn | max. 15µm |
| | | | 0,94 - 1,09mm |
| Chemical tin plated PCB | 1,15±0,025mm | Cu | min. 25µm |
| | | Sn | min. 0,8mm |
| | | | 1,00 - 1,10mm |
| Gold /Nickel plated PCB | 1,15±0,025mm | Cu | min. 25µm |
| | | Ni | 3 - 7µm |
| | | Au | 0,05 - 0,12µm |
| Silver plated PCB | 1,15±0,025mm | Cu | min. 25µm |
| | | Ag | 0,1 - 0,3µm |
| | | | 1,00 - 1,10mm |
| Copper plated PCB (OSP) | 1,15±0,025mm | Cu | min. 25µm |
| | | | 1,00 - 1,10mm |

Technical background - definition of a HARTING coaxial connection

Mini Coax standard straight = female = jack for backplane
Mini Coax standard angled = male = plug for daughtercards

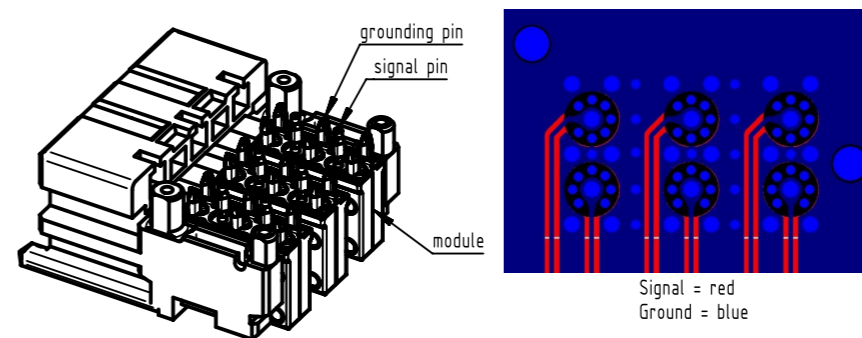


Mating male and female



PCB layout for Ground and Signal contacts

Grounding pins per module connected with one-piece plate. 'Ground' for these pins to be layouted as one PCB-layer, 'Signal' to be traced individually on separate PCB-layer.



| | | | | | |
|---|--|-----------------------|----------------------|--|--------------------|
| | All Dimensions in mm Original Size DIN A3 | Scale 1:1 | Free size tol. | Ref. Sub. DS 07010000101 / 50000071896 / 2014-02-19 | |
| | All rights reserved Department EC PD - DE | Created by STORCK | Inspected by ZWHR | Standardisation HOFFMANN | Date 2016-07-13 |
| HARTING Electronics GmbH D-32339 Espelkamp | Title Mini Coax connector | | | Doc-Key / ECM-Nr. 100568364/UGD/001/B 500000106531 | |
| | Type DS | Number 07010000101 | | Rev. B | Page 1/1 |

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