10kV reverse polarity coaxial high voltage connectors designed to minimize the risk of electrical shock to personnel through the use of recessed contacts. Both the cable connectors and the bulkhead receptacles have recessed contacts and will stand off the rated voltage in unmated condition.

The front mount receptacles are hermetically sealed.

The straight crimp cable plug HC51P-58 and the rear mount crimp receptacle HC51RB-58 are compatible with our 20kV rated LSZH HR058-20-2 coaxial cable for crimp assembly. For high temperature applications up to 8kVoc the connectors can also be assembled with silicone insulated coaxial cable HSL-8S-0.5-A-2.

A suitable crimping tool is available on request. The connectors are RoHS compliant.

The connectors should never be mated or unmated when energized.

Please see the HC52 series for 20kVoc models. HC51 series connectors are not intermateable with SHV or HC52 series connectors.

**SPECIFICATIONS**

- **Operating voltage:** max. 10kVoc (at sea level)
- **Test voltage:** 15kVoc
- **Impedance:** non constant
- **Insulation resistance:** 1000GΩ
- **Center contact resistance:** ≤ 3mΩ
- **Outer contact resistance:** ≤ 2mΩ
- **Operating temperature:** -55 to +85°C
- **Leak rate:** < 1x10⁻⁶ mbar*l/s @ 1bar differential pressure (applies to front mount bulkhead receptacles only)

Ratings listed above apply to clean mated connector pairs in standard atmospheric conditions. When connectors are used in an adverse environment (such as high temperature, humidity, pollution content, extreme mechanical exposure, etc.), the connector should be derated. The fitness for use must be proved by extended operational tests.
### MODEL OVERVIEW - PLUGS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Termination</th>
<th>Center Contact</th>
<th>Contact Pin Material/Plating</th>
<th>Insulator Material</th>
<th>Body Material/Plating</th>
<th>Gasket Material</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC51P-58</td>
<td>Straight Crimp Cable Plug</td>
<td>Crimp</td>
<td></td>
<td>Beryllium Copper/Au over Ni over Cu</td>
<td>High Density PE</td>
<td>Brass/ Ni over Cu</td>
<td>Silicone</td>
<td>20.3g</td>
</tr>
</tbody>
</table>

### MODEL OVERVIEW - RECEPTACLES

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Termination</th>
<th>Center Contact</th>
<th>Contact Pin Material/Plating</th>
<th>Insulator Material</th>
<th>Body Material/Plating</th>
<th>Gasket Material</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC51RB-58</td>
<td>Rear Mount Bulkhead Crimp Receptacle</td>
<td>Crimp</td>
<td></td>
<td>Beryllium Copper/Au over Ni over Cu</td>
<td>High Density PE</td>
<td>Brass/ Ni over Cu</td>
<td>Silicone</td>
<td></td>
</tr>
<tr>
<td>HC51RB-A</td>
<td>Rear Mount Bulkhead Receptacle (long insulator)</td>
<td>Solder</td>
<td></td>
<td>Beryllium Copper/Au over Ni over Cu</td>
<td>High Density PE</td>
<td>Brass/ Sn-Zn-Cu Alloy over Cu</td>
<td>Silicone</td>
<td>29g</td>
</tr>
<tr>
<td>HC51RB-B</td>
<td>Rear Mount Bulkhead Receptacle (long insulator)</td>
<td>Solder</td>
<td></td>
<td>Beryllium Copper/Au over Ni over Cu</td>
<td>High Density PE</td>
<td>Brass/ Sn-Zn-Cu Alloy over Cu</td>
<td>Silicone</td>
<td>29g</td>
</tr>
</tbody>
</table>
**DIMENSIONS**

**HC51P-58**

**HC51RB-58**

**HC51RB-A**

**HC51RB-B**

**PANEL CUT-OUT FOR RECEPTACLES**

- All dimensions are in mm (inch); drawings not to scale.
- All values and dimensions without given tolerances are nominal.
## ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>10kV Straight Crimp Cable Plug (female)</td>
<td>HC51P-58</td>
</tr>
<tr>
<td>10kV Rear Mount Bulkhead Crimp Receptacle (male)</td>
<td>HC51RB-58</td>
</tr>
<tr>
<td>10kV Front Mount Bulkhead Receptacle (male, long insulator)</td>
<td>HC51RB-A</td>
</tr>
<tr>
<td>10kV Front Mount Bulkhead Receptacle (male, short insulator)</td>
<td>HC51RB-B</td>
</tr>
</tbody>
</table>

Bespoke ready-to-use high voltage cable assemblies based on different high voltage cable types are available. The cable assemblies are fully tested. Please contact hivolt.de for details.

### Examples:

- **Cable:** HRG58-20-2; **Length:** 2m; **HC51P-58** plug assembled on both ends
  - Part Number: HCA-010-H51A-002-H51A-A

- **Cable:** HSL-8S-0.5-A-2; **Length:** 80m; **HC51P-58** plug assembled on one end
  - Part Number: HCA-010-H51A-080-S

- **Cable:** HRG58-20-2; **Length:** 33m; **HC51P-58** plug assembled on one end, **HC51RB-58** receptacle on the other end
  - Part Number: HCA-010-H51A-033-H51R-A

---

**Disclaimer**

The information given in this data sheet is technical data, not assured product characteristics. It has been carefully checked and is believed to be accurate; however, no responsibility is assumed for inaccuracies. The user has to ensure by adequate tests that the product is suitable for his application regarding safety and technical aspects.

hivolt.de GmbH & Co. KG does not assume any liability arising out of the application or use of any product described.

**Safety Advice**

Design, installation and inspection of machinery and devices carrying high voltage require accordingly trained and qualified personnel. Appropriate safety rules and directives must be complied with. Improper handling of high voltage can mean severe injuries or death and may cause serious collateral damage!
# CABLE ASSEMBLY INSTRUCTIONS HC51P-58

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BODY</strong></td>
<td></td>
<td>CONTACT PIN</td>
<td>GASKET</td>
<td>FERRULE</td>
</tr>
</tbody>
</table>

**Step 1:** strip as shown.
Make sure not to scratch the isolation!

**Step 2:** slide ferrule “D” over cable.

**Step 3:** put gasket “C” and pin “B” on center conductor and solder in “Y”.

**Step 4:** loosen braiding and slide connector “A” in place.

**Step 5:** slide ferrule “D” towards the connector “A” and crimp.
Use 5.5mm/0.217” hex crimp die insert.

All dimensions are in mm [inch]; drawings not to scale.
**CABLE ASSEMBLY INSTRUCTIONS HC51RB-58**

1. Strip as shown. Make sure not to scratch the isolation!
2. Slide ferrule “D” over cable.
3. Put gasket “C” and pin “B” on center conductor and solder or crimp in “Y”. Use 2.4mm/0.094” square crimp die insert if crimped.
4. Loosen braiding and slide connector “A” in place.
5. Slide ferrule “D” towards the connector “A” and crimp. Use 5.5mm/0.217” hex crimp die insert.

All dimensions are in mm [inch]; drawings not to scale.