powerCON® Connectors & Circular Connectors
### Content

<table>
<thead>
<tr>
<th><strong>powerCON Connectors:</strong></th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>powerCON TRUE1 TOP Series</td>
<td>4</td>
</tr>
<tr>
<td>Ordering Information</td>
<td>5</td>
</tr>
<tr>
<td>Accessories</td>
<td>5</td>
</tr>
<tr>
<td>Connector Assignment</td>
<td>5</td>
</tr>
<tr>
<td>powerCON TRUE1 International Cord</td>
<td>6</td>
</tr>
<tr>
<td>powerCON TRUE1 US Cord</td>
<td>7</td>
</tr>
<tr>
<td>Cable Part Number Breakdown</td>
<td>7</td>
</tr>
<tr>
<td>powerCON 20 A Series</td>
<td>8</td>
</tr>
<tr>
<td>Ordering Information</td>
<td>9</td>
</tr>
<tr>
<td>Accessories</td>
<td>9</td>
</tr>
<tr>
<td>Connector Assignment</td>
<td>9</td>
</tr>
<tr>
<td>powerCON 32 A Series</td>
<td>10</td>
</tr>
<tr>
<td>Ordering Information</td>
<td>10</td>
</tr>
<tr>
<td>Technical Data powerCON</td>
<td>11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Circular Connectors:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>nanoCON Series</td>
<td>12</td>
</tr>
<tr>
<td>Ordering Information</td>
<td>13</td>
</tr>
<tr>
<td>miniCON Series</td>
<td>14</td>
</tr>
<tr>
<td>Ordering Information</td>
<td>15</td>
</tr>
<tr>
<td>neutriCON Series</td>
<td>16</td>
</tr>
<tr>
<td>Ordering Information</td>
<td>17</td>
</tr>
<tr>
<td>Assembly Tools</td>
<td>18</td>
</tr>
<tr>
<td>Technical Data</td>
<td>19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>General information:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition, Abbreviation &amp; Useful Information</td>
<td>21</td>
</tr>
<tr>
<td>NEUTRIK Part Number Guide</td>
<td>22</td>
</tr>
<tr>
<td>NEUTRIK Product Line</td>
<td>23</td>
</tr>
</tbody>
</table>
Introduction

**powerCON Connectors**

**powerCON TRUE1 TOP, powerCON 20 A, powerCON 32 A**

An easy to use and reliable quick-lock system. Neutrik power Connectors ensures a perfect connection and cannot be released accidentally. The circular connectors offer the NEUTRIK unique chuck type strain relief and a reinforced housing for robust dependability.

The NEUTRIK industrial connector range also features a unique power connector for single phase applications up to 32 A.

**Circular Connectors**

**nanoCON, miniCON, neutriCON**

NEUTRIK circular connectors are a range of metal, multi-pole connectors specifically designed for industrial applications. These series provide a variety of male and female cable connectors and receptacles that can be terminated by soldering and crimping to printed circuit boards.

The main areas of application are in the measurement, test and control, automotive and machine tool industry as well as medical technology.
**powerCON TRUE1 TOP** — Lockable 16/20 A single phase connector

- True mains connector with breaking capacity (CBC)
- Designed to be engaged and disengaged in normal use when live or under load
- Lockable 16 A (acc. ENEC, VDE) / 20 A (acc. UL) connector
- Complete system with inlet and outlet connectors
- IP65 rating and certified outdoor protection to UL 50E enclosure type 4 (in mated condition)
- Uses high impact, UV resistant materials per UL
- Certified according IEC 60320-1 and UL 498
Ordering Information

**Cable Connector**
- NAC3FX-W-TOP: Locking Power-In cable connector, female, screw terminals, IP65
- NAC3MX-W-TOP: Locking Power-Out cable connector, male, screw terminals, IP65

**Chassis Connector**
- NAC3FPX-TOP: Appliance outlet chassis connector, female, 1/4" flat tab terminals
- NAC3FPX-ST-TOP: Appliance outlet chassis connector, female, screw terminals
- NAC3FPX-WOT-TOP: Appliance outlet chassis connector, female, 1/4" flat tab terminals, without insulation divider
- NAC3MPX-TOP: Appliance inlet chassis connector, male, 1/4" flat tab terminals
- NAC3MPX-WOT-TOP: Appliance inlet chassis connector, male, 1/4" flat tab terminals, without insulation divider
- NAC3PX-TOP: Appliance inlet-outlet chassis duplex, 1/4" flat tab terminals

**Accessories**
- SCNAC-FPX: Rubber sealing cover for NAC3FPX-TOP chassis, IP65 Rated UL50E Certified enclosure type 4
- SCNAC-MPX: Rubber sealing cover for NAC3MPX-TOP chassis, IP65 Rated UL50E Certified enclosure type 4
- SCNAC-PX: Rubber sealing cover for NAC3PX-TOP chassis, IP65 Rated UL50E Certified enclosure type 4
- HTAC: Hand tool to tighten the powerCON TRUE1 bushing
- SCDP-*: D-Size sealing gaskets, colour coding (0- black, 2- red, 4- yellow, 5- green, 6- blue, 9- white)

**APPLIANCE INLET**
- POWER IN
  - NAC3MPX*
  - NAC3FX-TOP or NKPF (Connector)

**APPLIANCE COMBINATION**
- INLET | OUTLET
  - NAC3PX-TOP
  - NAC3FX-TOP or NKPF (Connector)

**CABLE EXTENSION**
- POWER IN
  - NAC3FX-TOP or NKPF
- POWER OUT
  - NAC3MX-TOP or NKPM (Plug connector)

**FOR DISASSEMBLY - OPEN TWIST LOCK!**
1. Press with screw driver to unlock
2. Turn bushing while still pressing the lock.
**Specification**

**READY-MADE POWER CORDS**

Ready-made overmolded power cord in protection class IP65. The cable utilizes standard duty cord with 3 conductors with cross section 1.5 mm² or AWG 12.

Cables are equipped with NEUTRIK powerCON TRUE1 NAC3FX-W and NAC3MX-W for extension cables, with an open end for termination of local connectors for "power in" supply cables or a right-angled Schuko plug. Other local connectors on request.

Cables are available in different lengths.

**International Cord**

**International Power Cord 16 A / 250 VAC**

<table>
<thead>
<tr>
<th>Plug / end termination</th>
<th>NEUTRIK NAC3FX-W / stripped open end</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approvals</td>
<td>VDE</td>
</tr>
<tr>
<td>Standard length</td>
<td>1 m, 1.5 m, 2 m, 3 m, 5 m</td>
</tr>
<tr>
<td>Conductor size</td>
<td>3 x 1.5 mm²</td>
</tr>
<tr>
<td>Cable type / color / Nom. O.D.</td>
<td>H07RN-F3G1.5 / black / 9.6 mm</td>
</tr>
<tr>
<td>Part Number e.g.</td>
<td>NKPF-NC-A-3</td>
</tr>
</tbody>
</table>

**International Extension Cord 16 A / 250 VAC**

<table>
<thead>
<tr>
<th>Plug / end termination</th>
<th>NEUTRIK NAC3FX-W / NEUTRIK NAC3MX-W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approvals</td>
<td>VDE</td>
</tr>
<tr>
<td>Standard length</td>
<td>0.5 m, 1 m, 1.5 m</td>
</tr>
<tr>
<td>Conductor size</td>
<td>3 x 1.5 mm²</td>
</tr>
<tr>
<td>Cable type / color / Nom. O.D.</td>
<td>H07RN-F3G1.5 / black / 9.6 mm</td>
</tr>
<tr>
<td>Part Number e.g.</td>
<td>NKPF-M-A-0.5</td>
</tr>
</tbody>
</table>

**International Power Cord 16 A / 250 VAC**

<table>
<thead>
<tr>
<th>Plug / end termination</th>
<th>NEUTRIK NAC3FXW / SCHUKO RA Plug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approvals</td>
<td>VDE</td>
</tr>
<tr>
<td>Standard length</td>
<td>1 m, 1.5 m, 2 m, 3 m, 5 m, 10 m</td>
</tr>
<tr>
<td>Conductor size</td>
<td>3 x 1.5 mm²</td>
</tr>
<tr>
<td>Cable type / color / Nom. O.D.</td>
<td>H07RN-F3G1.5 / black / 9.6 mm</td>
</tr>
<tr>
<td>Part Number e.g.</td>
<td>NKPF-SR-A-1</td>
</tr>
</tbody>
</table>

| Cable type / color / Nom. O.D. | H05VV-F3G1.5 / black / 8.3 mm       |
| Part Number e.g.       | NKPF-SR-B-1                       |
## US Cord

### US Power Cord 20 A / 250 VAC

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug / end termination</td>
<td>NEUTRIK NAC3FXW / stripped open end</td>
</tr>
<tr>
<td>Approvals</td>
<td>UL, cUL</td>
</tr>
<tr>
<td>Standard length</td>
<td>1 m, 1.5 m, 2 m, 3 m, 5 m</td>
</tr>
<tr>
<td>Conductor size</td>
<td>3 x 12 AWG</td>
</tr>
<tr>
<td>Cable type / color / Nom. O.D.</td>
<td>SJTOW / black / 11.3 mm</td>
</tr>
<tr>
<td>Part Number e.g.</td>
<td>NKPF-NC-C-5</td>
</tr>
<tr>
<td>Cable type / color / Nom. O.D.</td>
<td>SJOOW / black / 11.3 mm</td>
</tr>
<tr>
<td>Part Number e.g.</td>
<td>NKPF-NC-D-3</td>
</tr>
</tbody>
</table>

### US Extension Cord 20 A / 250 VAC

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug / end termination</td>
<td>NEUTRIK NAC3FXW / NEUTRIK NAC3MXW</td>
</tr>
<tr>
<td>Approvals</td>
<td>UL, cUL</td>
</tr>
<tr>
<td>Standard length</td>
<td>0.5 m, 1 m, 1.5 m</td>
</tr>
<tr>
<td>Conductor size</td>
<td>3 x 12 AWG</td>
</tr>
<tr>
<td>Cable type / color / Nom. O.D.</td>
<td>SJTOW / black / 11.3 mm</td>
</tr>
<tr>
<td>Part Number e.g.</td>
<td>NKPF-M-C-1</td>
</tr>
<tr>
<td>Cable type / color / Nom. O.D.</td>
<td>SJOOW / black / 11.3 mm</td>
</tr>
<tr>
<td>Part Number e.g.</td>
<td>NKPF-M-D-1</td>
</tr>
</tbody>
</table>

## Cable Part Number Breakdown

### NEUTRIK Power Cord

- **F** ......... NAC3FX-W
- **M** ........... NAC3MX-W

### TERMINATION 2. END

- **M** ........... NAC3MX-W
- **NC** .......... Stripped open end
- **SR** .......... Schuko right-angled

### LENGTH in m

- **A** ........... H07RN-F3G1.5
- **B** ........... H05VV-F3G1.5
- **C** ........... SJTOW AWG 12
- **D** ........... SJOOW AWG 12

### NEUTRIK powerCON:
**powerCON – Locking 3 Pole Power Connectors**

- Lockable 3 pole single phase equipment (AC) connector
- High current capacity, rated at 20 A / 250 V ac
- Colour coded for easy identification, powerCON offers power-in (blue) and power-out (grey) versions with different keying to avoid the possibility of intermating
- Fast and easy locking system
- Extremely robust and reliable
- Excellent cable retention
- UL, cUL recognized components (file no. E 135070)
  VDE certified (Reg. No. 6360),
- New latch design for easier handling and secure locking
- Coupler for linking cables (couples NAC3FCA to NAC3FCB)
Ordering Information

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAC3FCA</td>
<td>Cable connector, quick lock with securing lever, A-type for power inlet, screw terminals</td>
</tr>
<tr>
<td>NAC3MPA-1</td>
<td>Air tight chassis connector, A-type for power inlet, flat tab terminals, blue</td>
</tr>
<tr>
<td>NAC3MPA-1-WOT</td>
<td>Chassis connector, power-out, 3/16” flat tab terminals, blue, without insulation divider</td>
</tr>
<tr>
<td>NAC3FCB</td>
<td>Cable connector, quick lock with securing lever, B-type for power outlet, screw terminals</td>
</tr>
<tr>
<td>NAC3MPB-1</td>
<td>Air tight chassis connector, B-type for power outlet, flat tab terminals, grey</td>
</tr>
<tr>
<td>NAC3MPB-1-WOT</td>
<td>Chassis connector, power-out, 3/16” flat tab terminals, grey, without insulation divider</td>
</tr>
<tr>
<td>NAC3MM-1</td>
<td>Coupler for linking cables (couples NAC3FCA to NAC3FCB)</td>
</tr>
</tbody>
</table>

Accessories

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTFAC</td>
<td>Hand tool to tighten the powerCON bushing</td>
</tr>
<tr>
<td>NDL</td>
<td>DummyPLUG for powerCON 20 A chassis connector</td>
</tr>
<tr>
<td>NLFASTON</td>
<td>FASTON® receptacle for tabs with &quot;positive lock&quot; for use with NL4MP, NL4MPR, NL8MPR, Pack of 100 pcs.</td>
</tr>
<tr>
<td>SCL</td>
<td>Plastic sealing cover to protect the connectors against dust and moisture</td>
</tr>
<tr>
<td>SCDR</td>
<td>Rear end protection cover for D-size chassis connector</td>
</tr>
<tr>
<td>SCDX</td>
<td>Hinged cover seals D-size chassis connectors, IP 42 rated</td>
</tr>
<tr>
<td>SCCD-W</td>
<td>Spring-loaded cover to seals D-size chassis connectors, IP65 rated</td>
</tr>
<tr>
<td>SCD-W</td>
<td>D-Size sealing cap, IP65 rated</td>
</tr>
<tr>
<td>SCDP-*</td>
<td>D-Size sealing gaskets, colour coding (*: 0- black, 2- red, 4- yellow, 5- green, 6- blue, 9- white)</td>
</tr>
</tbody>
</table>

Connector Assignment

Combination & Keyways:
With the two non-interchangeable types of connectors (A type and B type) it is impossible to produce a short circuit. Mating connectors (combination) are identified by mechanical keyways and by color.

ATTENTION
The technical data of the powerCON connectors refer to connectors without breaking capacity, meaning connecting devices not to be engaged and disengaged in normal use when live or under load.
powerCON 32 A Connectors

- Locking single phase AC appliance coupler
- High current capacity (32 A rated)
- Fast and easy locking system
- Excellent cable handling and protection
- Extremely robust and reliable
- 250 V ac, 32 A single-phase
  (for ambient temperatures up to 35 °C)
- Premating contact for protective earth
- Locking system to prevent unintentional disengagement
- Cable O.D. range: 8 – 20 mm
- Wiring with screw-type terminals for wires 2.5 to 6.0 mm²
  (AWG 14 – 10)

Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAC3FC-HC</td>
<td>Cable connector, quick lock with securing lever, screw terminals</td>
</tr>
<tr>
<td>NAC3MP-HC</td>
<td>Fast and easy locking system, screw-type terminals</td>
</tr>
</tbody>
</table>
# Technical Data

## Specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>powerCON TRUE1 TOP</th>
<th>powerCON Series</th>
<th>32 A powerCON Series</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of contacts</td>
<td>2 + PE</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Rated current per contact</td>
<td>20 A rms ▲)</td>
<td>20 A rms</td>
<td>32 A rms</td>
</tr>
<tr>
<td>Rated voltage</td>
<td>250 V ac</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>4 kV dc / 2.8 kV ac</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Contact resistance</td>
<td>≤ 3 mΩ</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>&gt; 0.1 GΩ</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>damp heat test (IEC 68-2-30)</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Mechanical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retention method</td>
<td>Quick lock</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Cable O.D. range</td>
<td>6 – 12 mm</td>
<td>6 – 15 mm ▲)</td>
<td>8 – 20 mm</td>
</tr>
<tr>
<td>Wiring</td>
<td>Cable: screw type terminals</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>or soldering</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Chassis:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>flat tabs for FASTON® (4.8 x 0.5 mm)</td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>(6.35 mm x 0.8 mm)</td>
<td>●</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>or soldering</td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>screw type terminals</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Material</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing cable connector</td>
<td>PA 6.6 30% GR</td>
<td>PA 6.6 30% GR</td>
<td>PA 6 30% GR</td>
</tr>
<tr>
<td>Housing receptacle</td>
<td>PA 6.6 30% GR</td>
<td>PA 6.66 25% GR</td>
<td>PA 6.6 25% GR</td>
</tr>
<tr>
<td>Insert</td>
<td>PA 6.6 30% GR</td>
<td>PA 6 30% GR</td>
<td>PA 6.6 25% GR</td>
</tr>
<tr>
<td>Contacts</td>
<td>Female:</td>
<td>CuSn0.2</td>
<td>CuZn39Pb3</td>
</tr>
<tr>
<td></td>
<td>Male:</td>
<td>CuNi1Si0.2</td>
<td>CuZn39Pb3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CuNi1Si0.2</td>
<td>CuSn0.2</td>
</tr>
<tr>
<td>Contact surface</td>
<td>2 µm Ag plated</td>
<td>4 µm / 2 µm Ag plated</td>
<td>4 µm Ag</td>
</tr>
<tr>
<td>Chuck</td>
<td>POM</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability</td>
<td>UL 94 HB</td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>UL 94 V-0</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Temperature range:</td>
<td>-30 °C to +80 °C</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>70 °C</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Protection class (mated)</td>
<td>IP65</td>
<td>IP20</td>
<td>IP2X unmated</td>
</tr>
<tr>
<td>Safety Requirements</td>
<td>EN / IEC61984</td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>IEC 60320</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Solderability complies with</td>
<td>IEC 68-2-20</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

▲) : Appliance coupler acc. IEC 60320 limited to 16 A ac

▲) : Cable O.D. range limited to 6 - 14 mm / acc. VDE

* : Receptacle

FASTON® is a trademark of AMP Inc.
nanoCON – 3 Pole Subminiature Connectors

- World’s smallest circular lockable multipole connector
- Robust metal housing with gold plated contacts
- Male and female receptacles for vertical or horizontal PCB mount or solder termination
- Cable connector and receptacle with interchangeable male and female inserts
- Reliable and versatile in applications like medical equipment, control systems, sensors or audio applications such as miniature and wireless microphones and portable mixers
- Pre-mating contact 1

M 1:1

NSC3F
NP3F-H
NP3M-V
NR3M-S
NR3F-S

NSC3F(M)
NR3F(M)-S
NP3F(M)-H
### Ordering Information

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSC3F  Cable connector, chuck principle, solder contacts</td>
<td>NSC3M  Cable connector, chuck principle, solder contacts</td>
</tr>
<tr>
<td>NR3F-S  Chassis connector panel mount, solder contacts</td>
<td>NR3M-S  Chassis connector panel mount, solder contacts</td>
</tr>
<tr>
<td>NP3F-H  Chassis connector horizontal PCB mount</td>
<td>NP3M-H  Chassis connector horizontal PCB mount</td>
</tr>
<tr>
<td>NP3F-V  Chassis connector vertical PCB mount</td>
<td>NP3M-V  Chassis connector vertical PCB mount</td>
</tr>
</tbody>
</table>

### Contact Arrangement

#### Male

![Male Contact Arrangement](image1)

#### Female

![Female Contact Arrangement](image2)
**miniCON – 12 Pole Miniature Connectors**

- Up to 12 pole miniature connector
- Complete set or modular system available
- Push-pull self-locking system
- Precisely machined, rugged all metal design
- Fully loaded male and female receptacles for horizontal or vertical PCB mount
- Gold plated contacts, crimp or solder, velour chromium housing
- Special crimp type strain relief establishes an ideal coaxial connection of the cable shield to the connector shell for best EMC shielding
- Easy assembly: contact soldering in disassembled condition avoids awkward wiring of high density contacts
- Interchangeable insert (male-female)

**MSCM12**  
MMC* (modulares System)  
**MRF12**  
**MPF12-H**

**MPF(M)12-V**

**MRF(M)12**

**MPF(M)12-H**

**MSCF(M)12 (+MSRC)**
### Ordering Information for complete miniCON set

**Complete set (consisting of housing, insert, 12 contacts and chuck for cable connector)**

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSCF12</td>
<td>MSCM12</td>
</tr>
<tr>
<td>MRF12</td>
<td>MRM12</td>
</tr>
<tr>
<td>MPF12-H</td>
<td>MPM12-H</td>
</tr>
<tr>
<td>MPF12-V</td>
<td>MPM12-V</td>
</tr>
</tbody>
</table>

**Ordering Information for modular miniCON system**

**Female**
- MPC: Crimp contacts for cable connector and receptacle
- MPS: Solder contacts for cable connector and receptacle
- MBC: Crimp contacts for cable connector and receptacle
- MBS: Solder contacts for cable connector and receptacle
- MRF: Receptacle housing and insert pre-assembled
- MMC: Cable connector extension, incl. chuck (for male and female)
- MSRC: Set of strain relief crimp version (consisting of crimp ferrule & reduction ferrule 1 + 2, tools see page 130)

**Male**
- MMI: Insert for cable connector
- MPC: Crimp contacts for cable connector and receptacle
- MPS: Solder contacts for cable connector and receptacle
- MRM: Receptacle housing and insert pre-assembled
- MSRC: Set of strain relief crimp version (consisting of crimp ferrule & reduction ferrule 1 + 2, tools see page 130)

Housing and insert pre-assembled, contacts must be ordered separately.
neutriCON – Versatile Circular Connectors

- Complete set or modular system for any desirable configuration
- Contact configuration can be selected from 1 to 8 contacts
- Special crimp type strain relief establishes an ideal coaxial connection of the cable shield to the connector shell for best EMC shielding
- Precise and robust all metal housing absorbs vibration forces and protects contact inserts
- Easy, fast and screwless assembly
- Push-pull self-locking system

Polarization

**Housing:** Two variants of metal polarizing guides (90° and 180°).

- **Coding 90°**
- **Coding 180°**

**Insert:** The male and female insert can be assembled in all three housings.
Ordering Information for complete neutriCON set

Complete set (consisting of housing, insert, 8 contacts and chuck for cable connector)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSC8F</td>
<td>Female cable connector, chuck principle, black housing, solder contacts</td>
</tr>
<tr>
<td>OSC8F-Ni</td>
<td>Female cable connector, chuck principle, nickel housing, solder contacts</td>
</tr>
<tr>
<td>OSC8M</td>
<td>Male cable connector, chuck principle, black housing, solder contacts</td>
</tr>
<tr>
<td>OSC8M-Ni</td>
<td>Male cable connector, chuck principle, nickel housing, solder contacts</td>
</tr>
<tr>
<td>ORP8F</td>
<td>Female panel mount receptacle, black housing, solder contacts</td>
</tr>
<tr>
<td>ORP8F-Ni</td>
<td>Female panel mount receptacle, nickel housing, solder contacts</td>
</tr>
<tr>
<td>ORP8M</td>
<td>Male panel mount receptacle, black housing, solder contacts</td>
</tr>
<tr>
<td>ORP8M-Ni</td>
<td>Male panel mount receptacle, nickel housing, solder contacts</td>
</tr>
</tbody>
</table>

Ordering Information for modular neutriCON system

Cable Connector:

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>FI8</td>
<td>MI8</td>
</tr>
<tr>
<td>BS1</td>
<td>PS1</td>
</tr>
<tr>
<td>BP1</td>
<td>PP1</td>
</tr>
<tr>
<td>SC8</td>
<td>MC8</td>
</tr>
<tr>
<td>SC8-Ni</td>
<td>MC8-Ni</td>
</tr>
<tr>
<td>SC81</td>
<td>MC81</td>
</tr>
<tr>
<td>SC81-Ni</td>
<td>MC81-Ni</td>
</tr>
<tr>
<td>SC8W</td>
<td>MC8W</td>
</tr>
</tbody>
</table>

Receptacle:

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>RP8</td>
<td>RP8</td>
</tr>
<tr>
<td>RP8-Ni</td>
<td>RP8-Ni</td>
</tr>
<tr>
<td>RP81</td>
<td>RP81</td>
</tr>
<tr>
<td>SR8</td>
<td>SR8</td>
</tr>
<tr>
<td>SR8A</td>
<td>SR8A</td>
</tr>
<tr>
<td>SR8B</td>
<td>SR8B</td>
</tr>
<tr>
<td>SR8W</td>
<td>SR8W</td>
</tr>
<tr>
<td>BSP-*</td>
<td>BSP-*</td>
</tr>
</tbody>
</table>

Modular system

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>FI8</td>
<td>MI8</td>
</tr>
<tr>
<td>BS1</td>
<td>PS1</td>
</tr>
<tr>
<td>BP1</td>
<td>PP1</td>
</tr>
<tr>
<td>SC8</td>
<td>MC8</td>
</tr>
<tr>
<td>SC8-Ni</td>
<td>MC8-Ni</td>
</tr>
<tr>
<td>SC81</td>
<td>MC81</td>
</tr>
<tr>
<td>SC81-Ni</td>
<td>MC81-Ni</td>
</tr>
<tr>
<td>SC8W</td>
<td>MC8W</td>
</tr>
<tr>
<td>RP8</td>
<td>RP8</td>
</tr>
<tr>
<td>RP8-Ni</td>
<td>RP8-Ni</td>
</tr>
<tr>
<td>RP81</td>
<td>RP81</td>
</tr>
<tr>
<td>SR8</td>
<td>SR8</td>
</tr>
<tr>
<td>SR8A</td>
<td>SR8A</td>
</tr>
<tr>
<td>SR8B</td>
<td>SR8B</td>
</tr>
<tr>
<td>SR8W</td>
<td>SR8W</td>
</tr>
<tr>
<td>BSP-*</td>
<td>BSP-*</td>
</tr>
</tbody>
</table>

* color coding: 0 - Black, 1 - Brown, 2 - Red, 3 - Orange, 4 - Yellow, 5 - Green, 6 - Blue, 7 - Violet, 8 - Grey, 9 - White
**Crimptool**

Crimping tool HX-CONTACT  
DMC crimptool AFM8  
acc. M22520/2-01  

MPOS-  
Modified DMC positioner (K155) Contact positioner holds contact in position while crimping.

**Contact and connector assembly**

Crimptool HX-R-BNC  
NEUTRIK HEX crimptool  
DIE-R-BNC-  
NEUTRIK dies for various HEX sizes.

**neutriCON - Ordering Information Assembly Tools**

<table>
<thead>
<tr>
<th>Cable O.D. / Wire</th>
<th>Crimptool</th>
<th>Die/Positioner</th>
<th>HEX-Size/Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR8A Strain relief</td>
<td>3 – 3.8 mm</td>
<td>HX-R-BNC</td>
<td>DIE-R-BNC-PJ</td>
</tr>
<tr>
<td>SR8B Strain relief</td>
<td>6 – 7 mm</td>
<td>HX-R-BNC</td>
<td>DIE-R-BNC-PS</td>
</tr>
</tbody>
</table>

**miniCON - Ordering Information Assembly Tools**

<table>
<thead>
<tr>
<th>Cable O.D. / Wire</th>
<th>Crimptool</th>
<th>Die/Positioner</th>
<th>HEX-Size/Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSRC Crimp ferrule only</td>
<td>4.5 – 6 mm</td>
<td>HX-R-BNC</td>
<td>DIE-R-BNC-PDC*</td>
</tr>
<tr>
<td>MSRC Crimp ferrule &amp; reduction ferrule 1</td>
<td>3.3 – 4.4 mm</td>
<td>HX-R-BNC</td>
<td>DIE-R-BNC-PDC*</td>
</tr>
<tr>
<td>MSRC Crimp ferrule &amp; reduction ferrule 2</td>
<td>2.5 – 3.2 mm</td>
<td>HX-R-BNC</td>
<td>DIE-R-BNC-PDC*</td>
</tr>
<tr>
<td>MBC Female crimp contact</td>
<td>AWG 24 / 0.22 mm²</td>
<td>HX-CONTACT</td>
<td>MPOS-MBC</td>
</tr>
<tr>
<td>MPC Male crimp contact</td>
<td>AWG 24 / 0.22 mm²</td>
<td>HX-CONTACT</td>
<td>MPOS-MPC</td>
</tr>
</tbody>
</table>

*: DIE-R-BNC-PJ or PS also possible
<table>
<thead>
<tr>
<th>Specification</th>
<th>nanoCON Series</th>
<th>miniCON Series</th>
<th>neutriCON Series</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of contacts</td>
<td>3</td>
<td>12 (1-12 modular system)</td>
<td>8 (1-8 modular system)</td>
</tr>
<tr>
<td>Rated current per contact</td>
<td>2 A</td>
<td>3 A</td>
<td>7.5 A (solder), 5 A (crimp)</td>
</tr>
<tr>
<td>Rated voltage</td>
<td>50 V ac</td>
<td>50 V ac</td>
<td>50 V ac</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>1000 V dc</td>
<td>1000 V dc</td>
<td>1500 Vdc</td>
</tr>
<tr>
<td>Contact resistance</td>
<td>≤ 12 mΩ</td>
<td>≤ 8 mΩ</td>
<td>≤ 5 mΩ</td>
</tr>
<tr>
<td>Insulation resistance after damp heat test (IEC 68-2-30)</td>
<td>&gt; 1 GΩ</td>
<td>&gt; 500 MΩ</td>
<td>&gt; 500 MΩ</td>
</tr>
<tr>
<td><strong>Mechanical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retention method</td>
<td>latch</td>
<td>Push-pull</td>
<td>Push-pull</td>
</tr>
<tr>
<td>Cable O.D. range</td>
<td>max. 3.4 mm</td>
<td>3 – 5 mm (grey chuck)</td>
<td>3 – 7 mm</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>5 – 7 mm (white chuck)</td>
<td>3 – 3.8 mm (SR8A)</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>2.5 – 6 mm</td>
<td>6 – 7 mm (SR8B)</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>(crimp version MSRC)</td>
<td></td>
</tr>
<tr>
<td>Wiring</td>
<td>0.2 mm² / 24 AWG</td>
<td>0.5 mm² / 20 AWG</td>
<td>1.0 mm² / 18 AWG</td>
</tr>
<tr>
<td></td>
<td>for solid wire</td>
<td>for solder</td>
<td>for solder</td>
</tr>
<tr>
<td></td>
<td>0.14 mm²</td>
<td>0.22 mm²</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>26 AWG</td>
<td>24 AWG</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>for stranded wire</td>
<td>for crimp</td>
<td>-</td>
</tr>
<tr>
<td>Solderability complies with IEC 68-2-20</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Material</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing cable connector</td>
<td>CuSn4Pb4Zn4</td>
<td>ZnAl4Cu1 / CuZn39Pb3</td>
<td>ZnAl4Cu1</td>
</tr>
<tr>
<td>Housing receptacle</td>
<td>CuZn39Pb2</td>
<td>ZnAl4Cu1</td>
<td>ZnAl4Cu1, gal Ni or black chrome</td>
</tr>
<tr>
<td>Insert</td>
<td>PETP</td>
<td>PA 6.6</td>
<td>PBTP 15% GR</td>
</tr>
<tr>
<td>Contacts</td>
<td>CuZn35Pb2</td>
<td>CuZn35Pb2 (solder)</td>
<td>CuZn35Pb2 (solder)</td>
</tr>
<tr>
<td></td>
<td>CuZn39Pb3 (crimp)</td>
<td>CuZn39Pb3 (crimp)</td>
<td></td>
</tr>
<tr>
<td>Contact surface</td>
<td>0.5 µm Au</td>
<td>0.2 µm AuCo</td>
<td>0.3 µm Au hard alloy over 2 µm Ni</td>
</tr>
<tr>
<td>Chuck</td>
<td>POM</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability</td>
<td>UL 94 HB</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Flammability</td>
<td>UL 94 V-0</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-30 °C to +80 °C</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Protection class (mated)</td>
<td>IP 40*</td>
<td>IP 5X</td>
<td>IP 5X</td>
</tr>
<tr>
<td>Safety Requirements EN/IC61984</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*: Receptacle

FASTON® is a trademark of AMP Inc.
### Definitions, Abbreviations & Useful Information

#### Elements

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag</td>
<td>Silver</td>
</tr>
<tr>
<td>Al</td>
<td>Aluminium</td>
</tr>
<tr>
<td>Au</td>
<td>Gold</td>
</tr>
<tr>
<td>Co</td>
<td>Cobalt</td>
</tr>
<tr>
<td>Cr</td>
<td>Chromium</td>
</tr>
<tr>
<td>Cu</td>
<td>Copper</td>
</tr>
<tr>
<td>Ni</td>
<td>Nickel</td>
</tr>
<tr>
<td>P</td>
<td>Phosphorus</td>
</tr>
<tr>
<td>Pb</td>
<td>Lead</td>
</tr>
<tr>
<td>Pd</td>
<td>Palladium</td>
</tr>
<tr>
<td>Sn</td>
<td>Tin</td>
</tr>
<tr>
<td>Zn</td>
<td>Zinc</td>
</tr>
<tr>
<td>SS</td>
<td>Stainless Steel</td>
</tr>
</tbody>
</table>

#### Measurement Legend

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Newton</td>
</tr>
<tr>
<td>Ω</td>
<td>Ohm</td>
</tr>
<tr>
<td>µ</td>
<td>Micro</td>
</tr>
<tr>
<td>OD</td>
<td>Outside Diameter</td>
</tr>
<tr>
<td>m</td>
<td>Meter(s)</td>
</tr>
<tr>
<td>k</td>
<td>Kilo</td>
</tr>
</tbody>
</table>

#### Alloys, Plastics, Polymers

- **Brass** (Alloy) CuZn39Pb3
- **Bronze** (Alloy) CuSn6
- **Ck 67** Carbon Steel
- **EPDM** Ethylene Propylene
- **GR** Glass Reinforced
- **PA** Polyamide
- **PBTP** Polybutylene Terephthalate
- **POM** Polyacetal
- **PTFE** PolyTetraFluoroEthylene (TEFLON)
- **PUR** Polyurethane

#### English to Metric Conversions

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 inch</td>
<td>3.175 mm</td>
</tr>
<tr>
<td>1/4 inch</td>
<td>6.35 mm</td>
</tr>
<tr>
<td>1 inch</td>
<td>25.4 mm</td>
</tr>
<tr>
<td></td>
<td>2.54 cm 1 inch</td>
</tr>
<tr>
<td>1 foot</td>
<td>30.48 cm</td>
</tr>
<tr>
<td></td>
<td>0.305 m</td>
</tr>
<tr>
<td>6 foot</td>
<td>1.828 m</td>
</tr>
<tr>
<td>50 foot</td>
<td>15.24 m</td>
</tr>
<tr>
<td>100 foot</td>
<td>30.48 m</td>
</tr>
<tr>
<td>1000 foot</td>
<td>304.8 m</td>
</tr>
</tbody>
</table>

#### Metric to English Conversions

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 centimeter</td>
<td>0.3937 inches</td>
</tr>
<tr>
<td>1 meter</td>
<td>39.37 inches</td>
</tr>
<tr>
<td>3.281 meter</td>
<td>10 feet</td>
</tr>
<tr>
<td>10 meters</td>
<td>32.808 feet</td>
</tr>
<tr>
<td>50 meters</td>
<td>164.041 feet</td>
</tr>
<tr>
<td>100 meters</td>
<td>328.084 feet</td>
</tr>
</tbody>
</table>

#### Other Abbreviations

- **UL**® Underwriters Laboratories
- **IP Rating** Ingress Protection rating for objects and water ACC IEC529/EN60529
- **IEC** International Electrotechnical Commission is the international standards and conformity assessment body for all fields of electrotechnology
- **AWG** American Wire Gauge
- **ENEC** – European norms electrical certification, demonstrates compliance with European safety standards.
- **VDE** Association for Electrical, Electronic and Information Technologies e.V.

Neutrik® Part Number Guide

NC3FAH1-B-0-D

<table>
<thead>
<tr>
<th>Packaging:</th>
<th>D</th>
<th>Cable connector: bulk packed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembly:</td>
<td>D</td>
<td>Chassis connector: disassembled push latch</td>
</tr>
<tr>
<td>Retention:</td>
<td>w/o</td>
<td>Latch lock</td>
</tr>
<tr>
<td>-0</td>
<td>Retention spring</td>
<td></td>
</tr>
<tr>
<td>-DA</td>
<td>Asymmetric PUSH</td>
<td></td>
</tr>
<tr>
<td>Shell:</td>
<td>B</td>
<td>Black shell, gold contacts</td>
</tr>
<tr>
<td>BAG</td>
<td>Black shell, silver contacts</td>
<td></td>
</tr>
<tr>
<td>Grounding:</td>
<td>0</td>
<td>Separate ground contact connected to shell, male only</td>
</tr>
<tr>
<td>1</td>
<td>Pin 1 &amp; panel &amp; shell connected, no separate ground contact</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Separate ground contact connected to shell &amp; panel, separate Pin 1</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Additional ground contacts</td>
<td></td>
</tr>
<tr>
<td>w/o number</td>
<td>No ground/shell contact (except 4/5 pole), female only</td>
<td></td>
</tr>
<tr>
<td>Termination:</td>
<td>H</td>
<td>Horizontal PCB mount</td>
</tr>
<tr>
<td>HL</td>
<td>Lateral left PCB mount</td>
<td></td>
</tr>
<tr>
<td>HR</td>
<td>Lateral right PCB mount</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Solder cups</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Vertical PCB mount</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>IDC for wires (no ground)</td>
<td></td>
</tr>
<tr>
<td>M3</td>
<td>Mounting holes with M3 thread</td>
<td></td>
</tr>
<tr>
<td>M25</td>
<td>Mounting holes with M2.5 thread</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Series:</td>
<td>A, AA, B, D, DL, DLX, MPR, P, PX, RX, X, XX</td>
<td></td>
</tr>
<tr>
<td>Gender:</td>
<td>F</td>
<td>Female</td>
</tr>
<tr>
<td>M</td>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>Number of Contacts:</td>
<td>2, 3, 4, 5, 6, 7, 8, 12</td>
<td></td>
</tr>
<tr>
<td>Connector Type:</td>
<td>A</td>
<td>Adapter</td>
</tr>
<tr>
<td>AC</td>
<td>powerCON®</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>BNC</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>XLR</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>dummyPLUG</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>etherCON® - RJ45</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>RCA / CINCH</td>
<td></td>
</tr>
<tr>
<td>J (MJ, RJ, SJ)</td>
<td>Jack</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>Cable Assembly</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>speakON® - Loudspeaker</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Module</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>opticalCON® - Fiber Optic Connector</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>Plug</td>
<td></td>
</tr>
<tr>
<td>PP</td>
<td>Patch Panel</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>Circular Connector</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>Transformer</td>
<td></td>
</tr>
<tr>
<td>TOP</td>
<td>True Outdoor Protection</td>
<td></td>
</tr>
</tbody>
</table>

Definitions, abbreviations & useful information see page 21.
# NEUTRIK® Product Line

## XLR Connectors
- X Series
- XX Series
- TOP Series
- RX Series
- XS Series
- A Series
- AA Series
- B Series
- TOP Series
- D Series
- DL Series
- DLX Series
- P Series
- MPR Series
- Combo I Series
- Combo A Series

## Plugs & Jacks
- PX Series
- silentZIP®
- timelineZIP®
- ultimateZIP®
- MIL/B-Gauge Type Plugs
- 0.173” Bantam
- 3.5 mm Plug
- Cable Jack
- Chassis Jacks
- Vertical Jacks
- Slim Jacks
- M Jacks
- Stacking Jacks
- Phono - Profi®
- Phono - Socket

## speakON® Connectors

## Data Connectors
- opticalCON® Cable & Chassis Connectors
- HDMI Cable & Chassis Connectors
- etherCON® Cable & Chassis Connectors
- etherCON® TOP
- mediaCON® Cable & Chassis Connectors

## 75 Ohm BNC Connectors
- rearTWIN™ Female Cable Jack
- Chassis
- Bulkhead Jacks
- Tiny Cable Jack

## Circular Connectors

## powerCON® Connectors
- powerCON® TRUE1® TOP Cable & Chassis Connectors
- powerCON® Cable & Chassis Connectors
- 32 A powerCON® Cable & Chassis Connectors

## Accessories
- Circular Adapters
- DMX Adapters
- XLR Feedthrough
- D Shape Adapters
- AES / EBU Digital Impedance Transformer Adapters
- Modules & Audio Transformers
- Goosenecks

## Digital Devices
- Mic Line, AES/EBU I/O to Dante® Interface
- XRMU® PRO

## Patch Panels
- 1/4” Patch Panel
- NPPA Series - 96 Bantam (TT) Jacks
- LF 48 B-Gauge Patchbays
- etherCON® CAT6A Adapter