binder
STECKVERBINDER

# Serie 693

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# Maschinen Rundsteckverbinder Serie 693
## *Circular connectors for machines series 693*

## Kurzinformation
## *Brief information*

**Kabelsteckverbinder**
- Steckverbinder mit Schraubverriegelung
- Schutzart IP 67 [1)]
- VDE, SEV, UL Zulassung
- 3 Anschlusstechniken:
  – LÖTanschluss
  – SCHRAUBanschluss
  – CRIMPanschluss für gedrehte Crimpkontakte (die u.a. auch in schweren Rechtecksteckverbindern nach DIN 43 652 eingesetzt werden)

***Cable Connector***
- *Connector with screw locking*
- *Degree of protection IP 67* [1)]
- *VDE, SEV, UL approval*
- *3 termination possibilities:*
  – *SOLDER termination*
  – *SCREW termination*
  – *CRIMP termination for turned crimp contacts (which are used in heavy duty rectangular connectors DIN 43652)*

Aufbau des Steckverbinders:
*Construction of the connector:*

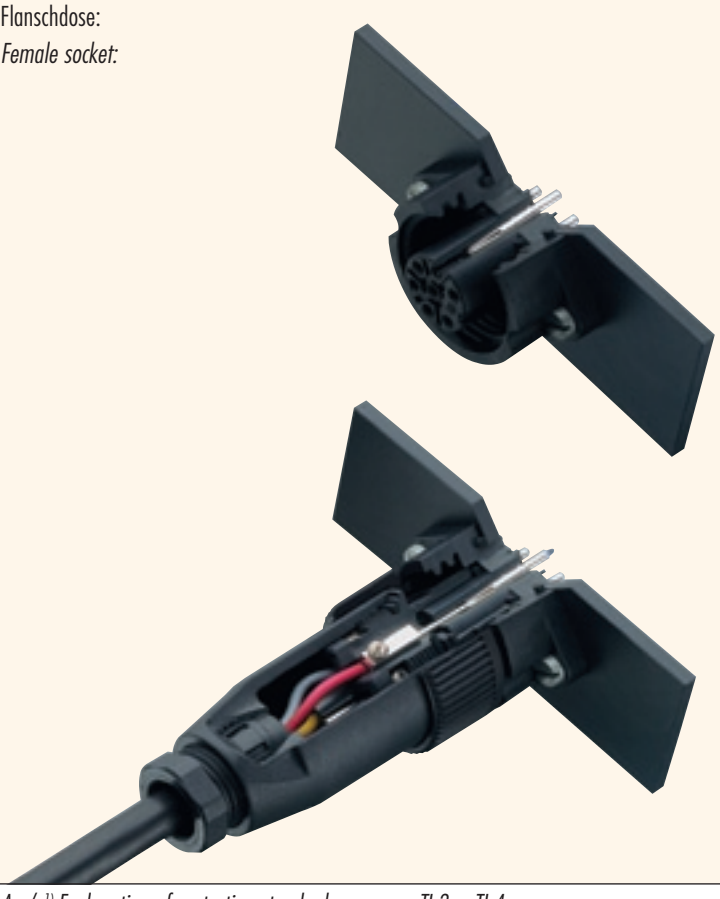
Kabelstecker:
*Cable connector:*

Winkelstecker:
*Angled connector:*

**Flanschsteckverbinder**
- Steckverbinder wird von vorn in den Montageausschnitt eingesetzt und von vorn verschraubt. (Befestigungsschrauben sind nicht in der Lieferung enthalten)

***Sockets***
- *Front mounting into housing and fastened from front side. (Screws are not included)*

Flanschdose:
*Female socket:*



[1)] Erläuterung der Schutzarten siehe Seite TI-3 – TI-4. / [1)] *Explanation of protection standards see page TI-3 – TI-4.*

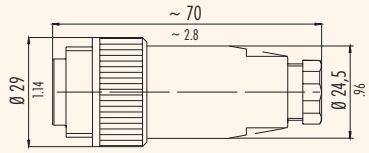
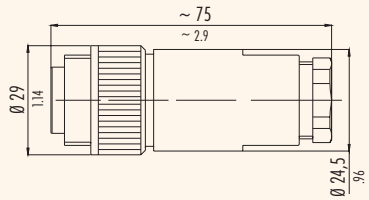
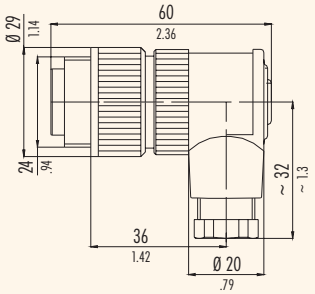
## Maschinen Rundsteckverbinder Serie 693 — Technische Daten [1]
## *Circular connectors for machines series 693 — Specifications [1]*

| Allgemeine Kennwerte | *General Characteristics* | | | | |
|---|---|---|---|---|---|
| Polzahl | *Number of contacts* | 3+PE | 6+PE | 6+PE | 6+PE |
| Verriegelung | *Locking system* | schrauben / *screw* | | | |
| Anschlussart | *Termination* | schrauben / *screw* | löten / *solder* | schrauben / *screw* | crimpen / *crimp* |
| Anschlussquerschnitt in $mm^2$ | *Wire gauge in $mm^2$* | 0,5 - 2,5 | max. 0,75 | 0,34 - 1,5 | 0,14 - 1,5 |
| Anschlussquerschnitt in AWG | *Wire gauge in AWG* | 20 - 14 | max. 18 | 22 - 16 | 26 - 16 |
| Schutzart Gehäuse | *Shell protection* | IP 67 [2] | | | |
| Mechanische Lebensdauer | *Mechanical operation* | > 500 Steckzyklen / *> 500 mating cycles* | | | |
| Obere Grenztemperatur | *Upper temperature* | + 100 °C *(+ 212 °F)* | | | |
| Untere Grenztemperatur | *Lower temperature* | – 40 °C *(– 40 °F)* | | | |
| Gewicht | *Weight* | ~ 40 g (Kabelsteckverbinder/*cable connector*) ~25 g (Flanschsteckverbinder/*socket*) | | | |
| **Elektrische Kennwerte** | ***Electrical Characteristics*** | | | | |
| Bemessungsspannung | *Rated voltage* | 400 V | 250 V | | |
| Bemessungsspannung nach UL | *Rated voltage UL* | 600 V | 250 V | | |
| Bemessungs-Stoßspannung | *Rated impulse voltage* | 6000 V | 4000 V | | |
| Verschmutzungsgrad | *Pollution degree* | 3 | 3 [3] | | |
| Überspannungskategorie | *Overvoltage categorie* | III | | | |
| Isolierstoffgruppe | *Material group* | III | | | |
| Prüfstoßspannung | *Test voltage* | 7300 V | 4800 V | | |
| Bemessungsstrom (40 °C) | *Rated current (40 °C)* | 16 A | 10 A | | |
| Bemessungsstrom nach UL | *Rated current UL* | 12 A | 8 A | | |
| Durchgangswiderstand | *Contact resistance* | ≤ 5 mΩ | | | |
| Isolationswiderstand | *Insulation resistance* | ≥ $10^{10}$ Ω | | | |
| **Werkstoffe** | ***Materials*** | | | | |
| Kontaktstift | *Pin contact* | CuZn (Messing/*brass*) | | | |
| Kontaktbuchse | *Socket contact* | CuZn (Messing/*brass*) | CuSn (Bronze/*bronce*) | | CuZn (Messing/*brass*) |
| Kontaktoberfläche | *Contact plating* | Ag (Silber/*silver*) | | | |
| Steckerkörper | *Male insert* | PBT (UL 94 V-0) | | | |
| Buchsenkörper | *Female insert* | PBT (UL 94 V-0) | | | |
| Gehäuse Kabelstecker | *Housing cable connector* | PBT (UL 94 V-0)) | | | |
| Verriegelungsring | *Ring nut* | PBT (UL 94 V-0) | | | |
| Flanschgehäuse | *Socket* | PBT (UL 94 V-0) | | | |

[1] Normen und Prüfbedingungen für diese Angaben siehe Seite TI-16. / *Standards and test parameters for this data see page TI-16.*
[2] IP 65 bei Leiterdurchmesser 6-7 mm. / *IP 65 for cable diameter 6-7 mm (.24-.2 in.).*
[3] In gestecktem Zustand, 2 in ungestecktem Zustand. / *In mated condition, 2 in unmated condition.*

## Maschinen Rundsteckverbinder Serie 693
## *Circular connectors for machines series 693*

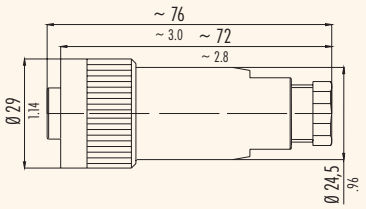
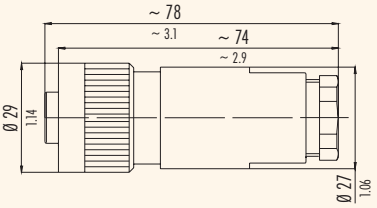
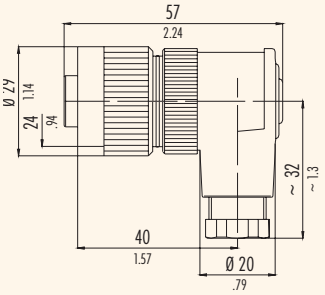
## Kabelstecker
## *Male cable connectors*

| Bezeichnung – Abbildung<br>*Description – Figure* | Maßzeichnung<br>*Drawing* | Polzahl<br>*Contacts* | Kabeldurchlass<br>*Cable outlet* | Bestell-Nr.<br>*Ordering-No.* |
|---|---|---|---|---|
| Kabelstecker, PG 9<br>*Male cabale connector, PG 9*<br> |  | 3+PE<br>schrauben<br>*screw* | 6 - 9,5 mm [1]<br>*(.24 - .37 in.)* [1] | 99-4221-00-04 |
| | | 6+PE<br>löten<br>*solder* | 6- 9,5 mm [1]<br>*(.24 - .37 in.)* [1] | 99-4225-00-07 |
| | | 6+PE<br>schrauben<br>*screw* | 6 - 8 mm [2]<br>*(.24 - .32 in.)* [2] | 99-4217-00-07 |
| | | 6+PE<br>crimpen<br>*crimp* | 6 - 8 mm [2]<br>*(.24 - .32 in.)* [2] | 99-4201-00-07 [3] |
| Kabelstecker, PG 13,5<br>*Male cable connector, PG 13,5*<br> |  | 3+PE<br>schrauben<br>*screw* | 10 - 12 mm [2]<br>*(.40 - .47 in.)* [2] | 99-4221-14-04 |
| | | 6+PE<br>löten<br>*solder* | 10 - 12 mm [2]<br>*(.40 - .47 in.)* [2] | 99-4225-14-07 |
| | | 6+PE<br>schrauben<br>*screw* | 10 - 12 mm [2]<br>*(.40 - .47 in.)* [2] | 99-4217-14-07 |
| | | 6+PE<br>crimpen<br>*crimp* | 10 - 12 mm [2]<br>*(.40 - .47 in.)* [2] | 99-4201-14-07 [3] |
| Winkelstecker, PG 9<br>*Male angled connector, PG 9*<br> |  | 3+PE<br>schrauben<br>*screw* | 6 - 8 mm [2]<br>*(.24 - .32 in.)* [2] | 99-4221-70-04 |
| | | 6+PE<br>löten<br>*solder* | 6 - 8 mm [2]<br>*(.24 - .32 in.)* [2] | 99-4225-70-07 |
| | | 6+PE<br>schrauben<br>*screw* | 6 - 8 mm [2]<br>*(.24 - .32 in.)* [2] | 99-4217-70-07 |
| | | 6+PE<br>crimpen<br>*crimp* | 6 - 8 mm [2]<br>*(.24 - .32 in.)* [2] | 99-4201-70-07 [3] |

[1] Kabelzugentlastung mit innenliegender Kabelklemme. / *Cable strain relief with internal cable clamp.*
[2] Kabelzugentlastung mit Klemmkorb (siehe Seite 693-8). / *Cable strain relief with pinch ring (See also page 693-8).*
[3] Crimpkontakte bitte separat bestellen (siehe Seite 693-9) / *Please order crimp contacts separately (see page 693-9)*

## Maschinen Rundsteckverbinder Serie 693
## *Circular connectors for machines series 693*

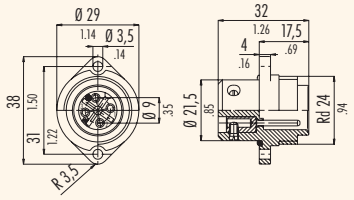
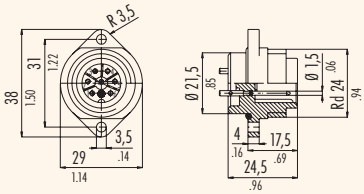
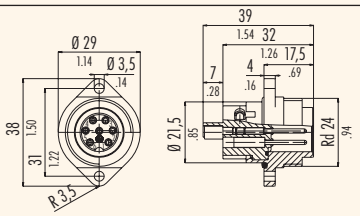
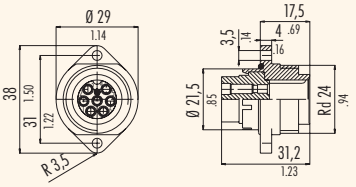
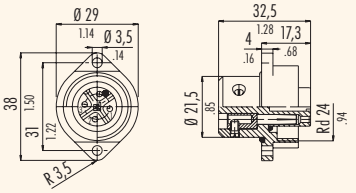
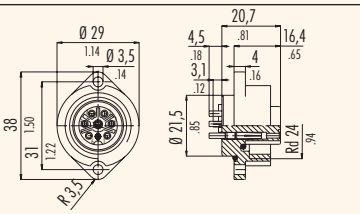
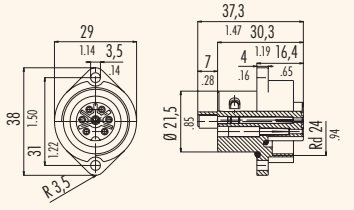
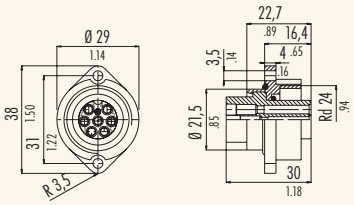
## Kabeldosen
## *Female cable connectors*

| Bezeichnung – Abbildung<br>*Description – Figure* | Maßzeichnung<br>*Drawing* | Polzahl<br>*Contacts* | Kabeldurchlass<br>*Cable outlet* | Bestell-Nr.<br>*Ordering-No.* |
|---|---|---|---|---|
| Kabeldose, PG 9<br>*Female cable connector, PG 9*<br> |  | 3+PE<br>schrauben<br>*screw* | 6 - 9,5 mm [1]<br>*(.24 - .37 in.)* [1] | 99-4222-00-04 |
| | | 6+PE<br>löten<br>*solder* | 6 - 9,5 mm [1]<br>*(.24 - .37 in.)* [1] | 99-4226-00-07 |
| | | 6+PE<br>schrauben<br>*screw* | 6 - 8 mm [2]<br>*(.24 - .32 in.)* [2] | 99-4218-00-07 |
| | | 6+PE<br>crimpen<br>*crimp* | 6 - 8 mm [2]<br>*(.24 - .32 in.)* [2] | 99-4202-00-07 [3] |
| Kabeldose, PG 13,5<br>*Female cable connector, PG 13,5*<br> |  | 3+PE<br>schrauben<br>*screw* | 10 - 12 mm [2]<br>*(.40 - .47 in.)* [2] | 99-4222-14-04 |
| | | 6+PE<br>löten<br>*solder* | 10 - 12 mm [2]<br>*(.40 - .47 in.)* [2] | 99-4226-14-07 |
| | | 6+PE<br>schrauben<br>*screw* | 10 - 12 mm [2]<br>*(.40 - .47 in.)* [2] | 99-4218-14-07 |
| | | 6+PE<br>crimpen<br>*crimp* | 10 - 12 mm [2]<br>*(.40 - .47 in.)* [2] | 99-4202-14-02 [3] |
| Winkeldose, PG 9<br>*Female angled connector, PG 9*<br> |  | 3+PE<br>schrauben<br>*screw* | 6 - 8 mm [2]<br>*(.24 - .32 in.)* [2] | 99-4222-70-04 |
| | | 6+PE<br>löten<br>*solder* | 6 - 8 mm [2]<br>*(.24 - .32 in.)* [2] | 99-4226-70-07 |
| | | 6+PE<br>schrauben<br>*screw* | 6 - 8 mm [2]<br>*(.24 - .32 in.)* [2] | 99-4218-70-07 |
| | | 6+PE<br>crimpen<br>*crimp* | 6 - 8 mm [2]<br>*(.24 - .32 in.)* [2] | 99-4202-70-07 [3] |

[1] Kabelzugentlastung mit innenliegender Kabelklemme. / *Cable strain relief with internal cable clamp.*
[2] Kabelzugentlastung mit Klemmkorb (siehe Seite 693-8). / *Cable strain relief with pinch ring (See also page 693-8).*
[3] Crimpkontakte bitte separat bestellen (siehe Seite 693-9) / *Please order crimp contacts separately (see page 693-9)*

## Maschinen Rundsteckverbinder Serie 693
## *Circular connectors for machines series 693*

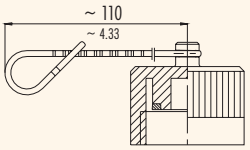
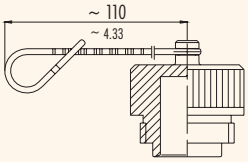
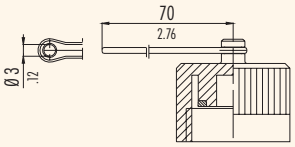
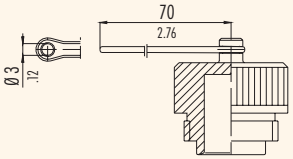
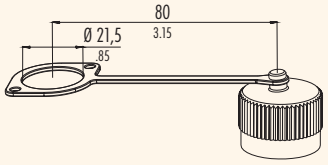
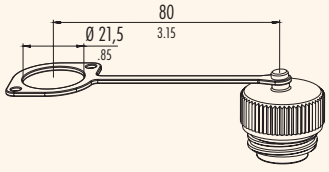
## Flanschsteckverbinder
## *Sockets*

| Bezeichnung – Abbildung<br>*Description – Figure* | Maßzeichnung<br>*Drawing* | Polzahl<br>*Contacts* | Bestell-Nr.<br>*Ordering-No.* |
|---|---|---|---|
| Flanschstecker 3+PE<br>Schraubanschluss<br>*Male socket 3+PE*<br>*screw termination* |  | 3+PE | 09-4223-00-04 |
| Flanschstecker 6+PE<br>Lötanschluss<br>*Male socket 6+PE*<br>*solder termination* |  | 6+PE | 09-4227-00-07 |
| Flanschstecker 6+PE<br>Schraubanschluss<br>*Male socket 6+PE*<br>*screw termination* |  | 6+PE | 09-4219-00-07 |
| Flanschstecker 6+PE<br>Crimpanschluss [1]<br>*Male socket 6+PE*<br>*crimp termination* [1] |  | 6+PE | 09-4203-00-07 |
| Flanschdose 3+PE<br>Schraubanschluss<br>*Female socket 3+PE*<br>*screw termination* |  | 3+PE | 09-4224-00-04 |
| Flanschdose 6+PE<br>Lötanschluss<br>*Female socket 6+PE*<br>*solder termination* |  | 6+PE | 09-4228-00-07 |
| Flanschdose 6+PE<br>Schraubanschluss<br>*Female socket 6+PE*<br>*screw termination* |  | 6+PE | 09-4220-00-07 |
| Flanschdose 6+PE<br>Crimpanschluss [1]<br>*Female socket 6+PE*<br>*crimp termination* [1] |  | 6+PE | 09-4204-00-07 |

[1] Crimpkontakte bitte separat bestellen (siehe Seite 693-9) / *Please order crimp contacts separately (see page 693-9)*

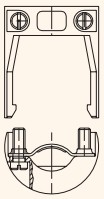
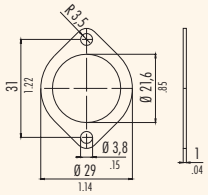
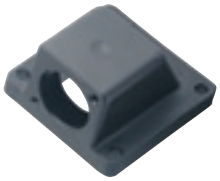
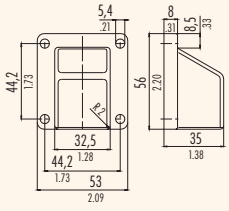
## Maschinen Rundsteckverbinder Serie 693
## *Circular connectors for machines series 693*

## Zubehör
## *Accessories*

| Bezeichnung<br>*Description* | Abbildung<br>*Figure* | Maßzeichnung<br>*Drawing* | Bestell-Nr.<br>*Ordering-No.* |
|---|---|---|---|
| Schutzkappe für Kabelstecker, IP 67<br>*Protection cap for male cable connector, IP 67* | |  | 08-2299-000-000 |
| Schutzkappe für Kabeldose, IP 67<br>*Protection cap for female cable connector, IP 67* | |  | 08-2300-000-000 |
| Schutzkappe für Flanschstecker, IP 67<br>*Protection cap for male socket, IP 67* | |  | 08-2301-000-000 |
| Schutzkappe für Flanschdose, IP 67<br>*Protection cap for female socket, IP 67* | |  | 08-2302-000-000 |
| Schutzkappe für Kabelstecker, IP 67<br>*Protection cap for male cable connector, IP 67* | |  | 08-2672-000-000 |
| Schutzkappe für Kabeldose, IP 67<br>*Protection cap for female cable connector, IP 67* | |  | 08-2673-000-000 |

## Maschinen Rundsteckverbinder Serie 693
## *Circular connectors for machines series 693*

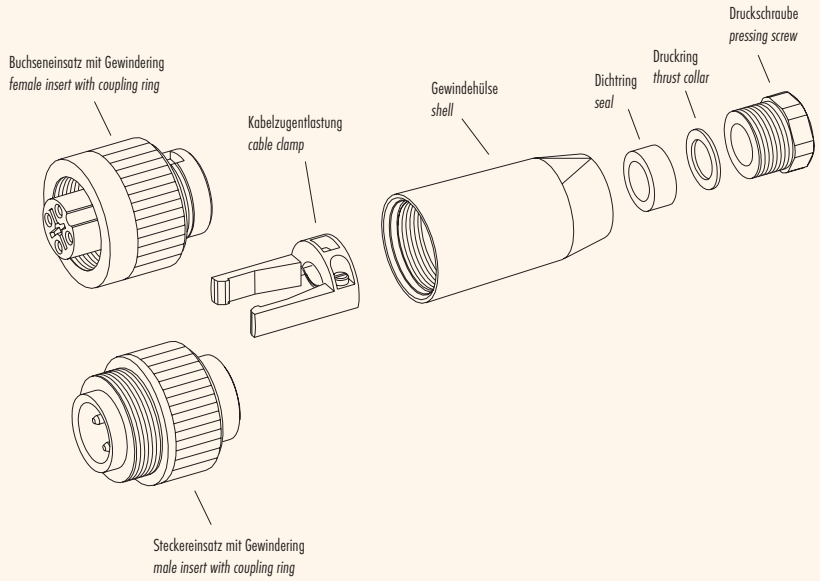
## Zubehör
## *Accessories*

| Bezeichnung<br>*Description* | Abbildung<br>*Figure* | Maßzeichnung<br>*Drawing* | Bestell-Nr.<br>*Ordering-No.* |
|---|---|---|---|
| Zugentlastung<br>*Cable clamp* | |  | 08-0628-000-000 |
| Flachdichtung für Flanschsteckverbinder<br>*Flat-seal for socket* | |  | 04-0722-000 |
| Anbaugehäuse<br>*Bulkhead housing* |  |  | 16-0566-00-00 |
| Schutzkappe für Anschlussseite Flanschsteckverbinder mit Schraubanschluss<br>*Protection cap - termination side for socket screw termiantion* | | Beispiel<br>*Example*<br> | 16-0565-00-00 |

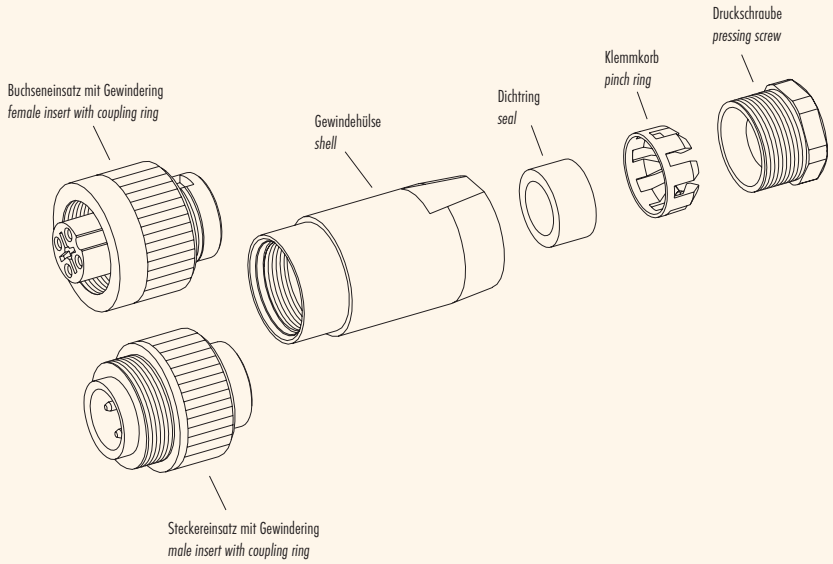
# Maschinen Rundsteckverbinder Serie 693
## *Circular connectors for machines series 693*

# Einzelteildarstellung
## *Component part drawings*

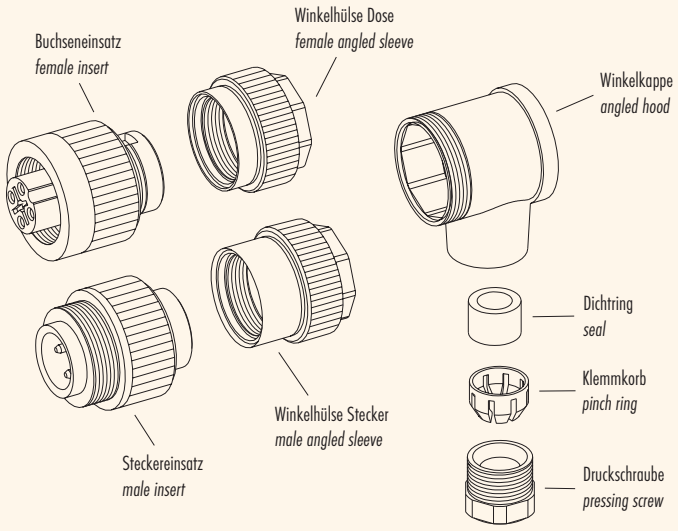
Kabelsteckverbinder mit Kabelzugentlastung
(PG 9 - Version)
*Cable connector with cable clamp*
*(PG 9 version)*




Kabelsteckverbinder mit Klemmkorb
(PG 13,5 - Version)
*Cable connector with pinch ring*
*(PG 13,5 version)*

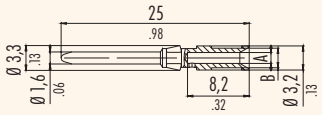
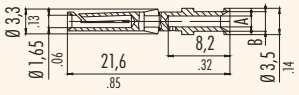



Winkelsteckverbinder
*Angled connector*



## Maschinen Rundsteckverbinder Serie 693
## *Circular connectors for machines series 693*

## Crimpkontakte, Zubehör
## *Crimp contacts, accessories*

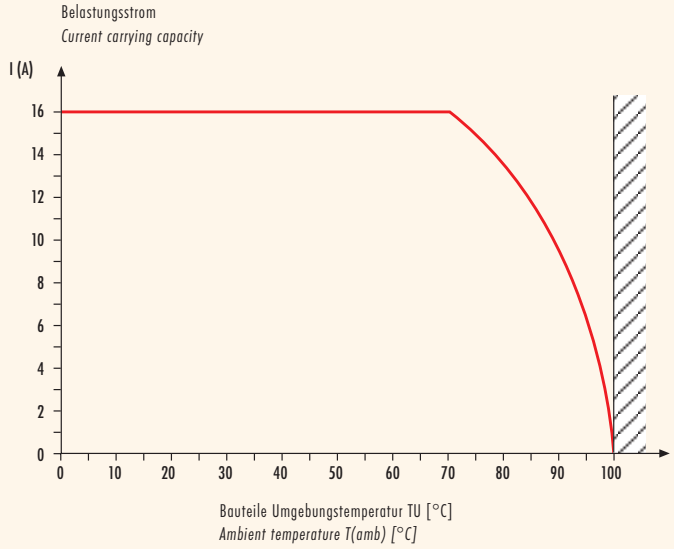
| Bezeichnung – Abbildung<br>*Description – Figure* | Maßzeichnung<br>*Drawing* | A | B | für Leiterquerschnitt<br>*for wire gauge* | AWG | Bestell-Nr.<br>*Ordering-No.* |
|---|---|---|---|---|---|---|
| Stiftkontakt<br>(Verpackungseinheit = 100 Stück)<br>*Male contact*<br>*(Packing unit = 100 pcs)*<br> |  | 0,9 | 2,6 | 0,14 - 0,34 mm² | 26-22 | 61-0891-139 |
| | | 1,1 | 2,6 | 0,5 mm² | 20 | 61-0892-139 |
| | | 1,45 | 2,6 | 0,75 - 1,0 mm² | 18 | 61-0893-139 |
| | | 1,8 | 3,0 | 1,5 mm² | 16 | 61-0894-139 |
| Buchsenkontakt<br>(Verpackungseinheit = 100 Stück)<br>*Female contact*<br>*(Packing unit = 100 pcs)*<br> |  | 0,9 | 2,6 | 0,14 - 0,34 mm² | 26-22 | 61-0896-139 |
| | | 1,1 | 2,6 | 0,5 mm² | 20 | 61-0897-139 |
| | | 1,45 | 2,6 | 0,75 - 1,0 mm² | 18 | 61-0898-139 |
| | | 1,8 | 3,0 | 1,5 mm² | 16 | 61-0899-139 |

| Bezeichnung<br>*Description* | Abbildung<br>*Figure* | Bestell-Nr.<br>*Ordering-No.* |
|---|---|---|
| Crimpzange für gedrehte Crimpkontakte<br>*Hand crimping tool for turned crimp contacts* | | 66-0003-001 |
| Lösewerkzeug für Kontakte<br>*Removal tool for contacts* | | 66-0004-001 |

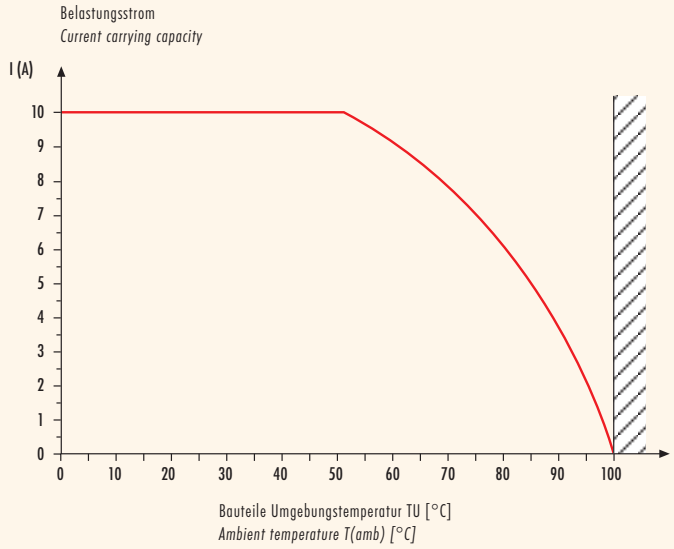
# Maschinen Rundsteckverbinder Serie 693
## *Circular connectors for machines series 693*

# Strombelastbarkeitskurve
## *Derating curve*

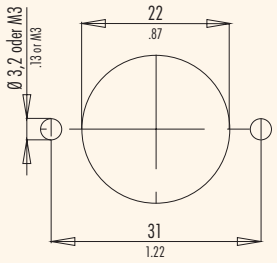
Strombelastbarkeitskurve
für Steckverbinder 3+PE
*Derating curve*
*for connector 3+PE*




Strombelastbarkeitskurve
für Steckverbinder 6+PE
*Derating curve*
*for connector 6+PE*




Montageausschnitt
*Panel cut out*

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