

The present document which is for guidance only, aims at providing information regarding the application of Rast connectors.

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A

B

C

D

E

F

1

2

3

4

# RAST 5

Raster

Anschluss

Steck

Technik

5mm Teilung

Please find this document on [www.zvei.org](http://www.zvei.org)

Click on "Suche" (Search)

Enter "RAST"

Scroll down to "Standardisierte Steckverbindungen RAST 2.5 und RAST 5" and click on it

Scroll down to "downloads"

|          |       |          |                           |               |
|----------|-------|----------|---------------------------|---------------|
| 06       | -     | 12.08.15 | Modifications see page 2  | maierb        |
| 05       | -     | 30.10.12 | Modifications see page 2  | maierb        |
| 04       | -     | 04.04.06 | Modifications page 2      | Maier         |
| 03       | -     | 10.12.04 | Modifications page 2      | Bruno         |
| 02       | -     | 24.06.99 | Aenderungen siehe Seite 2 | stoll         |
| 01       | -     | 28.11.97 | Aenderungen siehe Seite 2 | stoll         |
| 28.04.97 | stoll | -        | RAST 5                    | sheet 1 of 24 |

| 1 |          | 2          |                 | 3                                                              | 4             |
|---|----------|------------|-----------------|----------------------------------------------------------------|---------------|
| A | Nr.      | Seite      | Datum           | Aenderung                                                      | Name          |
|   | 00       | alle       | 03.06.97        | ueberarbeitete Ausgabe                                         | stoll         |
|   | 01       | 4          | 12.09.97        | Korrektur Mass Wa2, Korrektur Zaehlrichtung Z                  | stoll         |
|   |          | 10         |                 | "Farbfestlegung" in "Farbempfehlung" geaendert                 |               |
|   |          | 11         |                 | Toleranz bei Mass "X" und Zaehlrichtung Rahmen zugefuegt       |               |
|   |          | 3, 38, 39  |                 | Seiten 38 und 39 neu                                           |               |
|   | 02       | 4, 5, 6, 7 | 26.06.99        | siehe entsprechende Seiten                                     | stoll         |
|   |          | 8, 9, 11   |                 |                                                                |               |
|   |          | 26, 33     |                 |                                                                |               |
|   |          | 38, 39     |                 |                                                                |               |
|   |          | generell   |                 | Schriftstaerke erhoehrt, Massstaeebe aus Ansichten entfernt    |               |
|   | 03       | 3          | 10.12.04        | Table of content changed                                       | Bruno         |
|   |          | 4, 5, 7    |                 | Pages added.                                                   |               |
|   |          | general    |                 | Contact distance increased from >3 to >=3.2mm                  |               |
|   |          | 11         | before page 7   | Reduced Contact / PCB track width from 1.8±0.2 to 1.7±0.1      |               |
|   |          | general    |                 | partly moved content to other pages                            |               |
|   |          |            |                 | other changes see related pages                                |               |
|   | 04       | 5          | 04.04.06        | Text for connectors added                                      | Maier         |
| C |          | 6          |                 | Add geometric tolerance, remove tolerance Wa2 and R            |               |
|   |          | 7          |                 | Dimensions edge connector header moved from page 11            |               |
|   |          | 8          |                 | Modify view display, add geometric tolerance                   |               |
|   |          | 9          |                 | Modify view, switch partly to page 8                           |               |
|   |          | 10         |                 | Switch dimensions to page 8                                    |               |
|   |          | 11         |                 | Switch dimensions to page 7                                    |               |
|   |          | 12         |                 | Modify IEC 664 to IEC 60 664                                   |               |
|   |          | 13         |                 | Deleted                                                        |               |
|   |          | 14         | before p. 37    | Reorder page                                                   |               |
|   |          | 15         | before p. 38    | Reorder page                                                   |               |
|   |          | 16-23      | before p. 15-22 | Reorder page                                                   |               |
|   |          |            | before p. 23-36 | Pages deleted                                                  |               |
| D |          | general    |                 | modify not specified tolerances                                |               |
|   | 05       | 7          | 30 Oct 12       | Remove remarks for printed circuit boards for edge connectors. | maierb        |
|   |          | 7          |                 | Modify contact width from 1.7 to 1.6, modify contact shape.    |               |
|   |          | 8          |                 | 3D view added, new dimension Si, add Se on opposite side       |               |
|   |          | 10         |                 | 3D view added                                                  |               |
|   |          | 13         |                 | Add dimension for trace width and tolerance for 5mm            |               |
|   | 06       | 13         | -               | Add page 13, reorder page 14 to 24                             | maierb        |
|   | -        | -          | -               | -                                                              | -             |
|   | -        | -          | -               | -                                                              | -             |
|   | -        | -          | -               | -                                                              | -             |
| E | -        | -          | -               | -                                                              | -             |
|   | -        | -          | -               | -                                                              | -             |
|   | -        | -          | -               | -                                                              | -             |
|   | -        | -          | -               | -                                                              | -             |
|   | -        | -          | -               | -                                                              | -             |
|   | -        | -          | -               | -                                                              | -             |
|   | -        | -          | -               | -                                                              | -             |
|   | -        | -          | -               | -                                                              | -             |
|   | -        | -          | -               | -                                                              | -             |
|   | -        | -          | -               | -                                                              | -             |
| F | 06       | -          | 12.08.15        | Version 06                                                     | maierb        |
|   | 05       | -          | 30.10.12        | Version 05                                                     | maierb        |
|   | 04       | -          | 04.04.06        | Version 04                                                     | Maier         |
|   | 03       | -          | 10.12.04        | Version 03                                                     | Bruno         |
|   | 02       | -          | 26.06.99        | Stand 02                                                       | stoll         |
|   | 01       | -          | 12.09.97        | Stand 01                                                       | stoll         |
|   | 28.04.97 | stoll      | -               | RAST 5                                                         | sheet 2 of 24 |



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| 24.....10.10 | Kodierungen, 11-polig / Keyings 11-way               |

|          |       |          |                         |               |
|----------|-------|----------|-------------------------|---------------|
| -        | -     | -        | -                       | -             |
| 06       | -     | 12.08.15 | -                       | maierb        |
| 05       | -     | 30.10.12 | -                       | maierb        |
| 04       | -     | 04.04.06 | -                       | Maier         |
| 03       | -     | 10.12.04 | -                       | Bruno         |
| 01       | -     | 28.11.97 | Seite 38, 39 eingefuegt | stoll         |
| 28.04.97 | stoll | -        | RAST 5                  | sheet 3 of 24 |

# 1. Design Hinweise fuer RAST 5: Design Remarks for RAST 5:

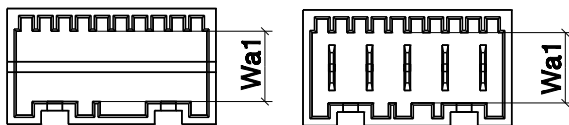
## Spiel des Steckers / Play of connector

Das Mass Wa1 ist fuer sicheres Verrasten des Steckers und zum Vermeiden von Fehlsteckungen wichtig.

Bei hoeheren Polzahlen muss der Rahmen / die Wanne stabil genug sein, um leichtes Aufweiten von Wa1 zu vermeiden.

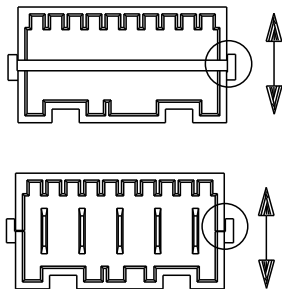
The dimension Wa1 is important for reliable locking of the connector and to avoid wrong connector assembly.

At higher number of pins the frame / the header must be strong enough to avoid easy widening of Wa1.



Bei 2-teiligen Steckplaetzen muss fuer Wa1 zusaetzlich beruecksichtigt werden:

On connector interfaces having 2 parts additional constraints have to be considered for Wa1:

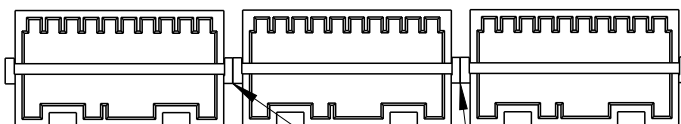


Das Spiel, das sich durch die Verrastung der beiden Halbrahmen ergibt, muss bei der Dimensionierung von Wa1 beruecksichtigt werden.

The play given by the snap fixation of the two half frames must be considered for defining the dimension of Wa1.

Mehrere Steckplaetze nebeneinander ohne Verrastung der Halbrahmen dazwischen sind zu vermeiden, wenn nicht andere Massnahmen gegen zu leichtes Aufweiten von Wa1 getroffen werden.

Several connector interfaces side by side without snap fixations of the two half frames in between should be avoided as long as no other counter measures against easy widening of Wa1 are implemented.



Verrastung zwischen Steckplaetzen  
Snap fixation between connector position

|          |       |          |            |               |
|----------|-------|----------|------------|---------------|
| -        | -     | -        | -          | -             |
| -        | -     | -        | -          | -             |
| 06       | -     | 12.08.15 | -          | maierb        |
| 05       | -     | 30.10.12 | -          | maierb        |
| 04       | -     | 04.04.06 | -          | Maier         |
| 03       | -     | 10.12.04 | Page added | Bruno         |
| 28.04.97 | stoll | -        | RAST 5     | sheet 4 of 24 |

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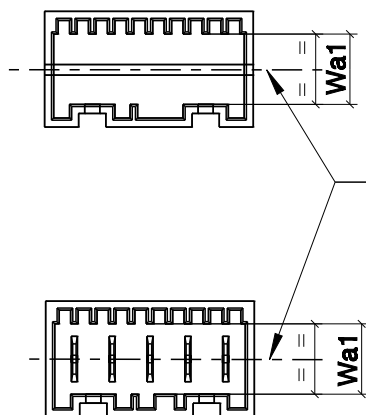
Indirect

A

B

C

Position der Leiterkarte / Position of PCB  
Position der Flachstecker / Position of Flat pin terminals



Leiterkarten und Flachstecker sind mittig zu Wa1.  
PCBs and Flat pin terminals are centered to Wa1.

Bemerkungen zu Steckern / Remarks to connectors

Die Steckerabmessungen in diesem Dokument gelten fuer alle RAST 5 Stecker:  
The connector dimensions shown in this document are valid for all RAST 5 connectors:

- Schneidklemmstecker und Crimpstecker  
Insulation displacement connectors and crimp connectors
- alle Ausfuehrungen (4A....16A)  
all versions (4A....16A)
- Komponentenstecker und Randstecker  
component connectors and PCB edge connectors

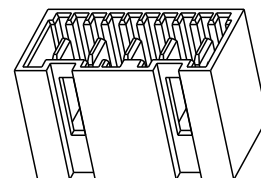
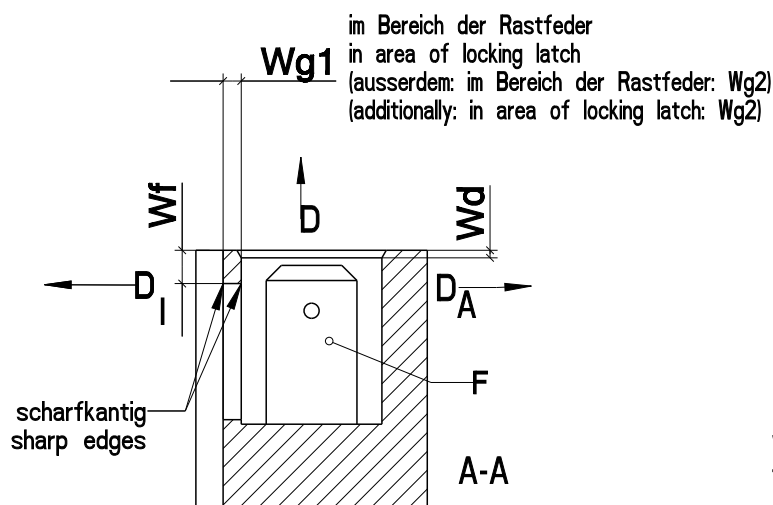
16A Anwendungen:  
RAST 5 Stecker sollten nicht an mehr als 4 Pins gleichzeitig 16A fuehren.  
16A application:  
RAST 5 connectors should not carry on more than 4 pins 16A at the same time.

F

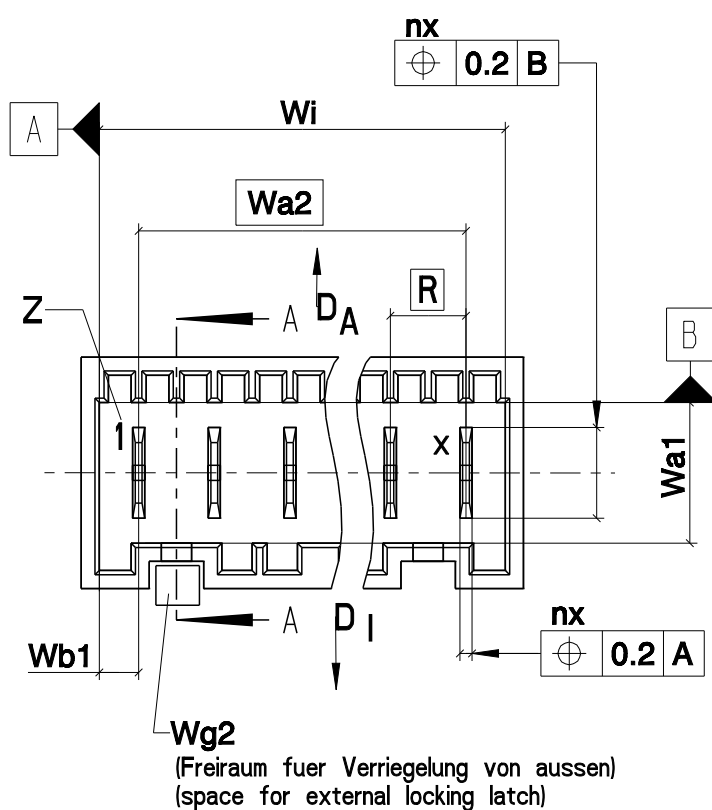
|                |   |          |                           |               |
|----------------|---|----------|---------------------------|---------------|
| -              | - | -        | -                         | -             |
| -              | - | -        | -                         | -             |
| 06             | - | 12.08.15 | -                         | maierb        |
| 05             | - | 30.10.12 | -                         | maierb        |
| 04             | - | 04.04.06 | Text for connectors added | Maier         |
| 03             | - | 10.12.04 | Page added                | Bruno         |
| 28.04.97 stoll |   |          | -                         | RAST 5        |
|                |   |          |                           | sheet 5 of 24 |

## 2. RAST 5 Wanne RAST 5 Header

W = Wanne/header  
S = Stecker/connector



weitere Masse siehe Kapitel 4 und 6  
further dimensions see chapter 4 and 6



|            |                                                                                                     |
|------------|-----------------------------------------------------------------------------------------------------|
| Wa1        | $9.3^{+0.15}_{-0.05}$                                                                               |
| Wa2        | $(n-1) \times R$                                                                                    |
| Wb1        | $2.6^{+0.1}_0$                                                                                      |
| Wd         | $0.5 \times 30^\circ$                                                                               |
| Wf         | $2.8 \pm 0.2$ ohne Schraege<br>without inclination                                                  |
| Wg1<br>Wg2 | $1.2^{+0.2}_{-0.2}$<br>$3 \pm 0.1 \times 3 \pm 0.1$<br>Rastfenster RF<br>space for locking latch RF |
| Wi         | $Wa2 + 2 \times Wb1$                                                                                |
| F          | Flachstecker<br>flat pin terminal<br>DIN 46 244 -A6,3-0,8                                           |
| Z          | Kammernummer<br>cavity number                                                                       |
| Df         | Drahtabgang Innenverrastung<br>wire exit, internal locking latch                                    |
| DA         | Drahtabgang Aussenverrastung<br>wire exit, external locking latch                                   |
| n          | Polzahl<br>number of pins                                                                           |
| R          | Raster = 5<br>Grid = 5                                                                              |

Freimasstoleranzen siehe DIN 16 901 - 130 und ISO 2768-mK  
not specified tolerances see DIN 16 901 - 130 and ISO 2768-mK

|          |       |          |                                                             |               |
|----------|-------|----------|-------------------------------------------------------------|---------------|
| 06       | -     | 12.08.15 | -                                                           | maierb        |
| 05       | -     | 30.10.12 | -                                                           | maierb        |
| 04       | -     | 04.04.06 | Add geometric tolerance for R and Wa2, remove tolerance Wa2 | Maier         |
| 03       | -     | 10.12.04 | Delete Wb2, modify formula Wi, Remove tolerance of R        | Bruno         |
| 02       | -     | 23.06.99 | Symmetrie von Wa1 aufgenommen, Hinweis auf S.9              | stoll         |
| 01       | -     | 12.09.97 | Korrektur Mass Wa2, Korrektur Zaehlrichtung Z               | stoll         |
| 28.04.97 | stoll | -        | RAST 5                                                      | sheet 6 of 24 |

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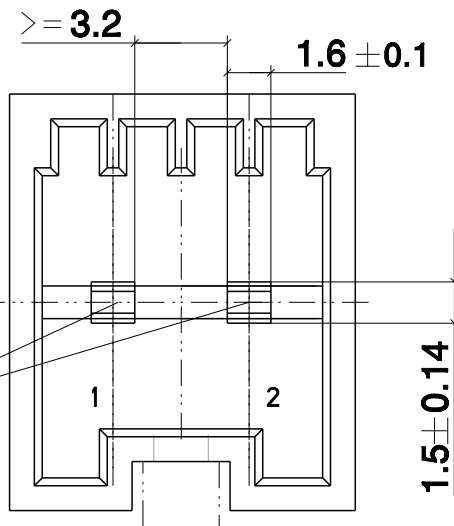
The present document which is for guidance only, aims at providing information regarding the application of Rast connectors.



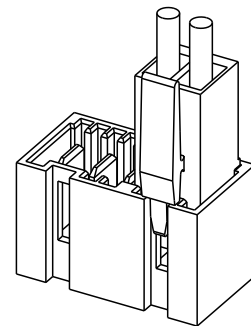
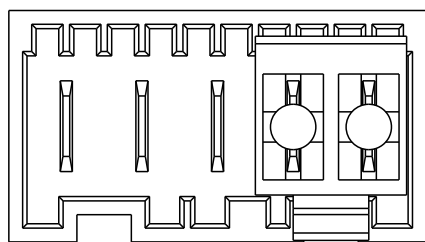
## Anwendung Randstecker Application for edge connectors

Stift (Kante angefast)  
Kontakt muss auf beiden Seiten  
ueber den Kunststoffsteg ueberstehen

pin terminal (edge chamfered)  
contact must be on both sides higher  
than plastic



Freimasstoleranzen siehe DIN 16 901 - 130 und ISO 2768-mK  
not specified tolerances see DIN 16 901 - 130 and ISO 2768-mK



W = Wanne/header  
S = Stecker/connector

|            |                                                                                                                                                                                                                                                                                       |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wc         | 1 ± 0.2                                                                                                                                                                                                                                                                               |
| We1<br>We2 | 8<br>2.5 } Standard Anwendung/standard application:<br>n. DIN 46 244 Seite 2,<br>Fussnote 2 der Tabelle<br>fuer Einzelstecker mit Isoliertuelle<br>for single connectors with insulation sleeve<br><br>fuer spezielle Anwendungen /<br>for special applications<br>We2: 1.5 ..... 2.5 |
| Wh         | 2 <sup>+0.2</sup> <sub>0</sub> Breite Rastfenster<br>width locking window                                                                                                                                                                                                             |
| Sh         | >= 3.2 Kriech- und Luftstrecke<br>(Geeignet fuer max 250V-eff.)<br>distance for tracking resistance<br>(usage for max. 250V-eff.)                                                                                                                                                     |

B-B

min. Wc + We1

Wh

R

Sg

Sh

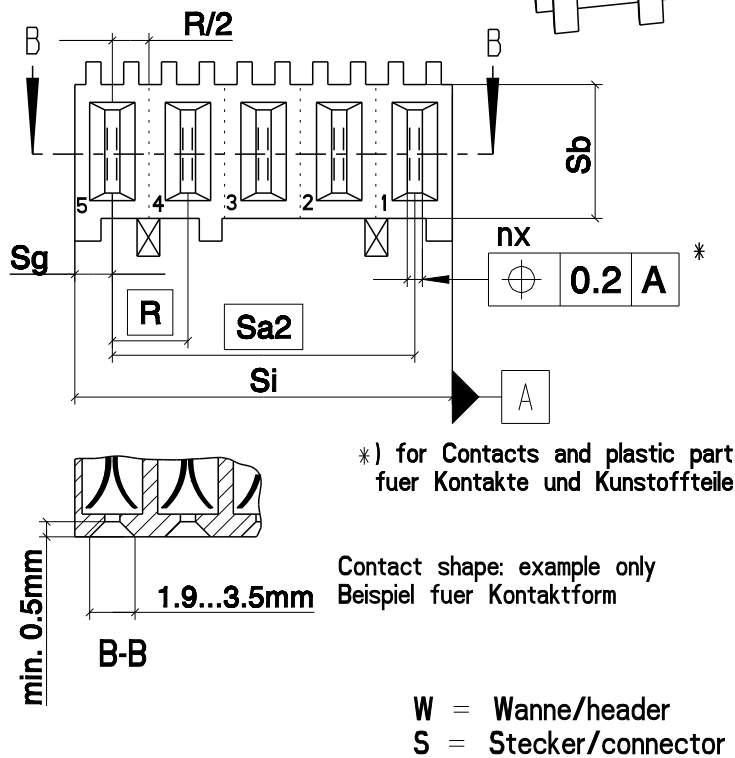
We2

We1

Wc

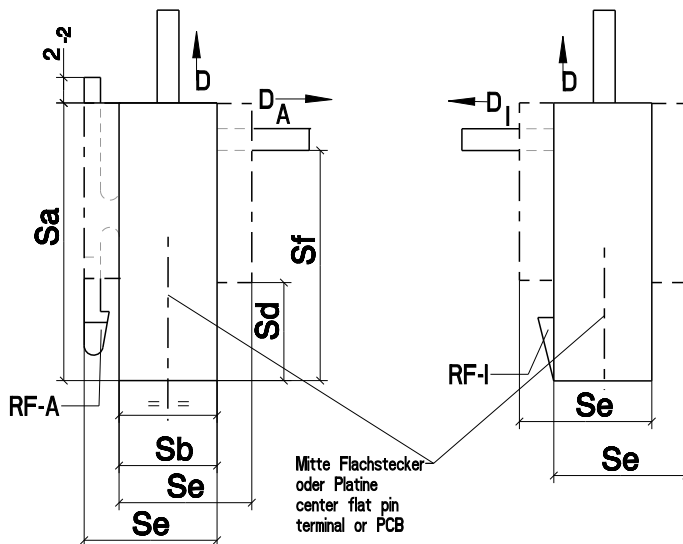
|          |       |          |                                                              |               |
|----------|-------|----------|--------------------------------------------------------------|---------------|
| -        | -     | -        | -                                                            | -             |
| 06       | -     | 12.08.15 | -                                                            | maierb        |
| 05       | -     | 30.10.12 | Modify contact width from 1.7 to 1.6 , modify contact shape  | maierb        |
| 05       | -     | 30.10.12 | Remove remarks for printed circuit boards for edge connector | maierb        |
| 04       | -     | 04.04.06 | dimensions edge connector header moved from page 11          | Maier         |
| 03       | -     | 10.12.04 | Page added                                                   | Bruno         |
| 28.04.97 | stoll | -        | RAST 5                                                       | sheet 7 of 24 |

### 3. RAST 5 Stecker: RAST 5 connector:

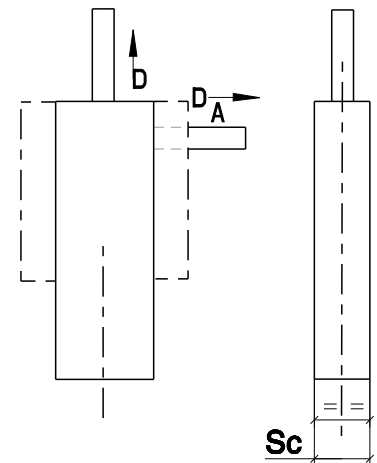


|                |                                                                            |
|----------------|----------------------------------------------------------------------------|
| Sa             | $\leq 25.5$ einschl. Deckel<br>cover included                              |
| Sa2            | $(n-1) \cdot R$                                                            |
| Sb             | $\leq 9.2$                                                                 |
| Sc             | $< 5$                                                                      |
| Sd             | $9^{+0.2}_0$                                                               |
| Se             | $\leq 13$ } Stufe bzw. Absatz<br>(Drahtabgang)<br>step, relief (wire exit) |
| Sf             | $15^{+5}$ Unterkante Leitung<br>lower edge wire                            |
| Sg             | $\leq 2.48$                                                                |
| Si             | $Sa2 + 2 \cdot Sg$                                                         |
| D <sub>A</sub> | Drahtabgang Aussenverrastung<br>wire direction, external locking latch     |
| D <sub>I</sub> | Drahtabgang Innenverrastung<br>wire direction, internal locking latch      |
| RF-A           | Rastfeder aussen<br>external locking latch                                 |
| RF-I           | Rastfeder innen<br>internal locking latch                                  |

#### multi-position connectors



#### 1-position connector



weitere Masse siehe Kapitel 2 und 4  
further dimensions see chapter 2 and 4

Freimasstoleranzen siehe DIN 16 901 - 130 und ISO 2768-mK

not specified tolerances see DIN 16 901 - 130 und ISO 2768-mK

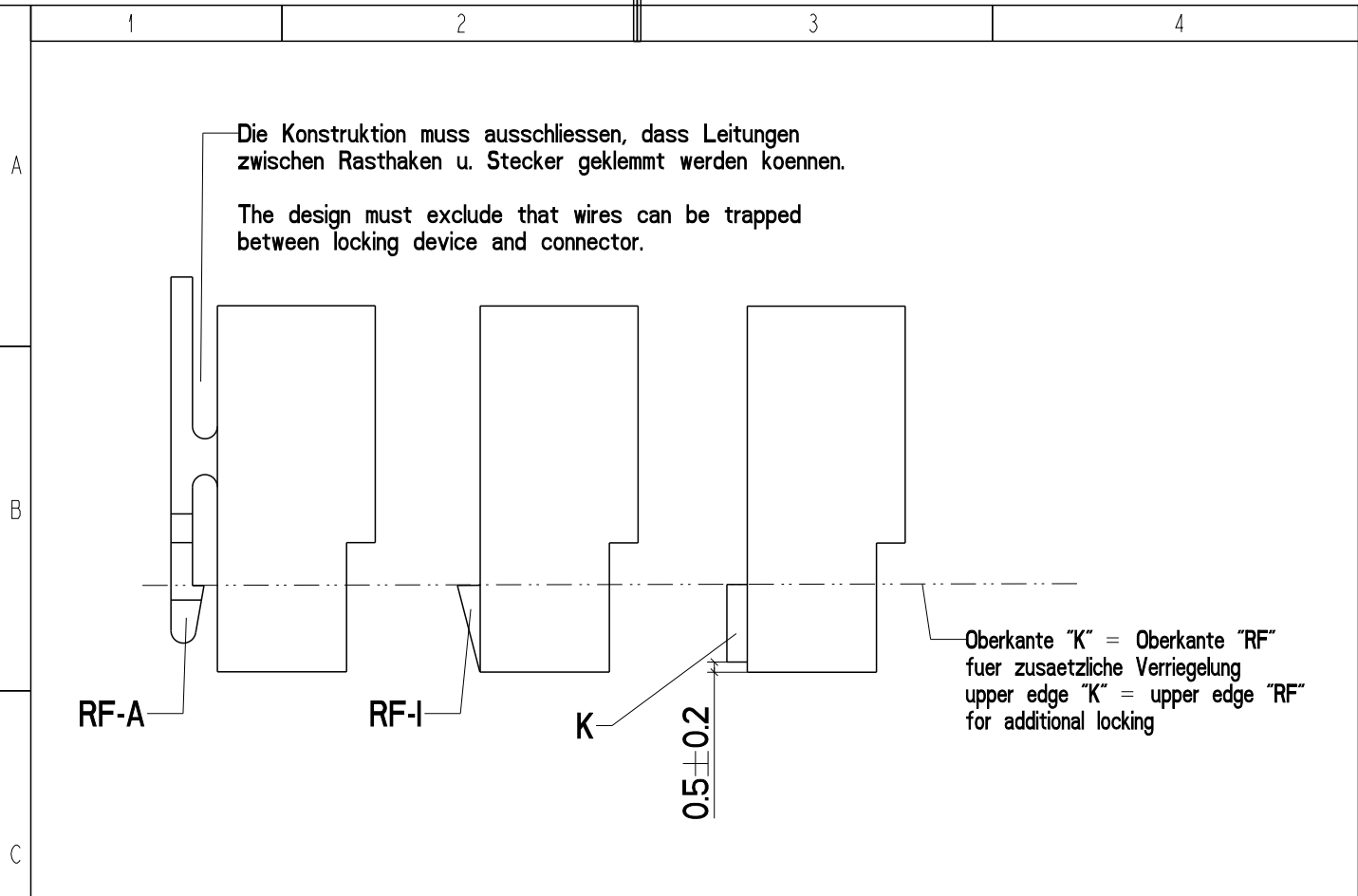
|          |       |          |                                                          |               |
|----------|-------|----------|----------------------------------------------------------|---------------|
| -        | -     | -        | -                                                        | -             |
| -        | -     | -        | -                                                        | -             |
| -        | -     | -        | -                                                        | -             |
| 06       | -     | 12.08.15 | -                                                        | maierb        |
| 05       | -     | 30.10.12 | Si new dimension, add Se on opposite side, 3D View added | maierb        |
| 04       | -     | 04.04.06 | Page added, geometric tolerance added, Sa2 added.        | Maier         |
| 28.04.97 | stoll | -        | RAST 5                                                   | sheet 8 of 24 |



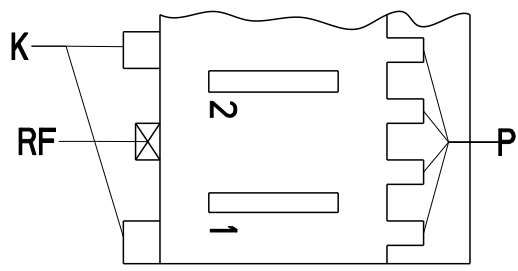
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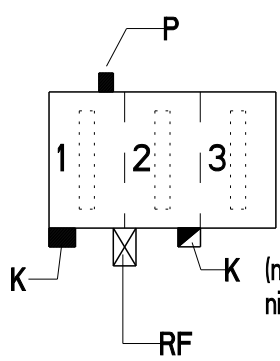


Ansicht gegen Steckrichtung / View against plug-in direction



- K = Kodierung / keying
- P = Positionierungsrippen / positioning ribs
- RF = Rastfeder / locking latch
- RF-I = Rastfeder innen / internal locking latch
- RF-A = Rastfeder aussen / external locking latch

Symbol in Steckrichtung / symbol in plug-in direction



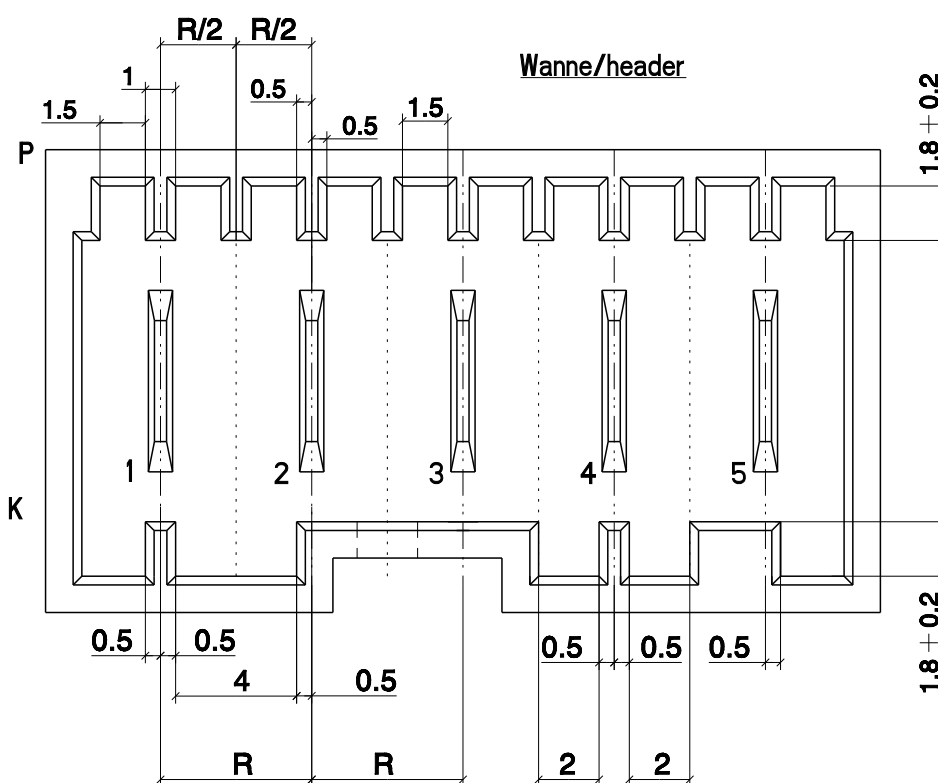
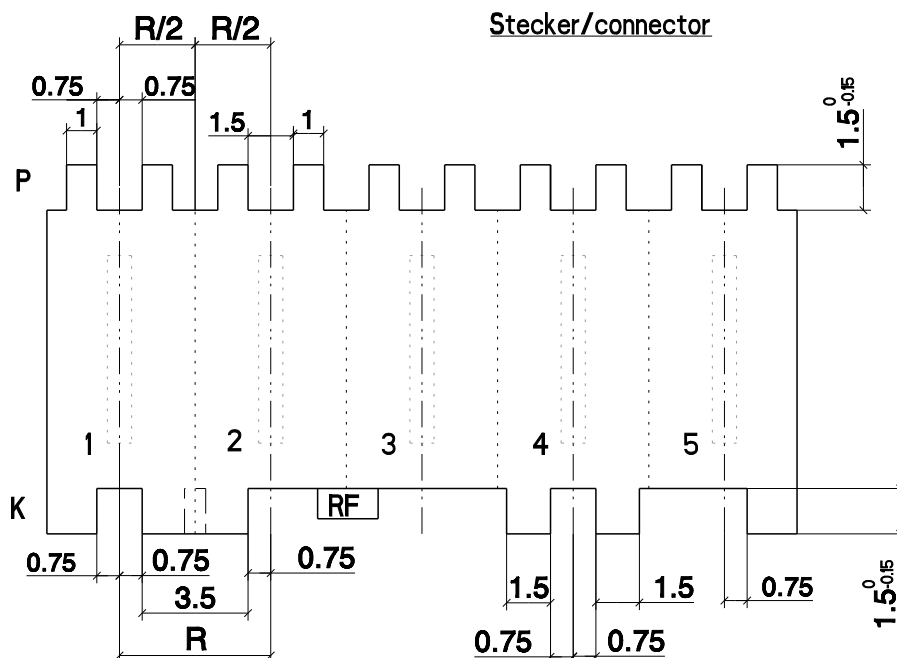
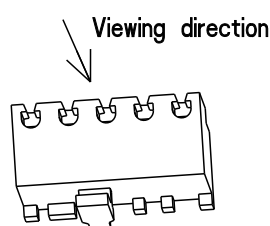
(nach vorne abgeschraegt / chamfered to front)  
nicht fuer neue Anwendungen / not for new applications

|                |   |          |                                               |               |
|----------------|---|----------|-----------------------------------------------|---------------|
| -              | - | -        | -                                             | -             |
| 06             | - | 12.08.15 | -                                             | maierb        |
| 05             | - | 30.10.12 | Add text "view against plug in direction"     | maierb        |
| 04             | - | 04.04.06 | Change view display, switch section to page 8 | Maier         |
| 03             | - | 10.12.04 | Darstellung geaendert / Change View display   | Bruno         |
| 02             | - | 24.06.99 | Toleranz fuer Rasthakenueberstand aufgenommen | stoll         |
| 28.04.97 stoll |   |          | -                                             | RAST 5        |
|                |   |          |                                               | sheet 9 of 24 |

4. Kodiermasse Wanne und Stecker:  
Keying dimensions connector and header:

Freimasstoleranzen siehe DIN 16 901 - 130 und ISO 2768-mK

not specified tolerances see DIN 16 901 - 130 and ISO 2768-mK



|          |       |          |                                                                     |                       |
|----------|-------|----------|---------------------------------------------------------------------|-----------------------|
| -        | -     | -        | -                                                                   | -                     |
| 06       | -     | 12.08.15 | -                                                                   | maierb                |
| 05       | -     | 30.08.12 | 3D view added                                                       | maierb                |
| 04       | -     | 04.04.06 | Switch dimensions to page 8                                         | Maier                 |
| 03       | -     | 10.12.04 | Replace dimension Wb2 by Wb1, Correct keying width from 1.75 to 1.5 | Bruno                 |
| 02       | -     | 24.06.99 | Masse aufgenommen, Polzahl erhoeht                                  | stoll                 |
| 28.04.97 | stoll | -        | <b>RAST 5</b>                                                       | <b>sheet 10 of 24</b> |

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Consult your customer for specific issues.

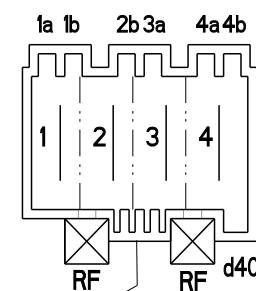
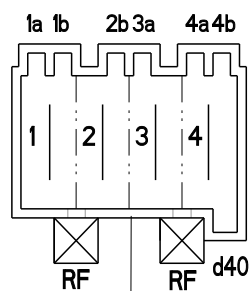
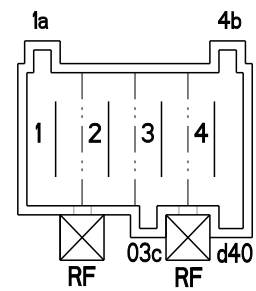
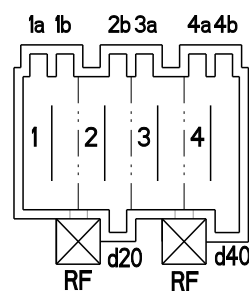
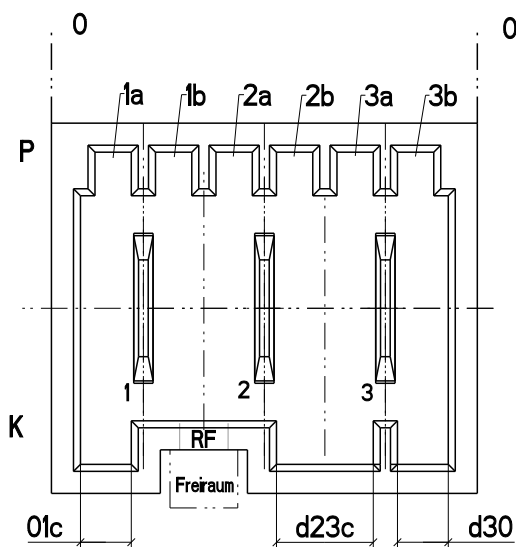
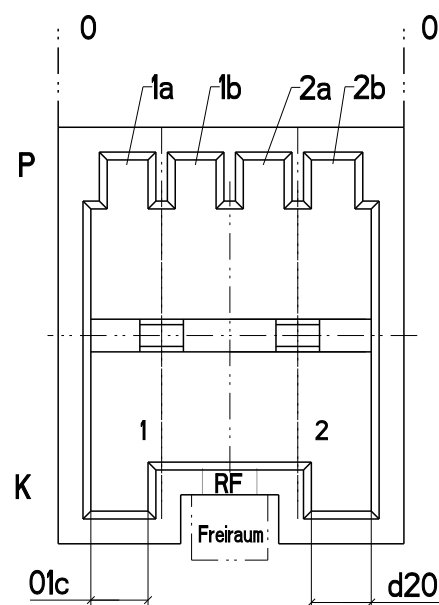
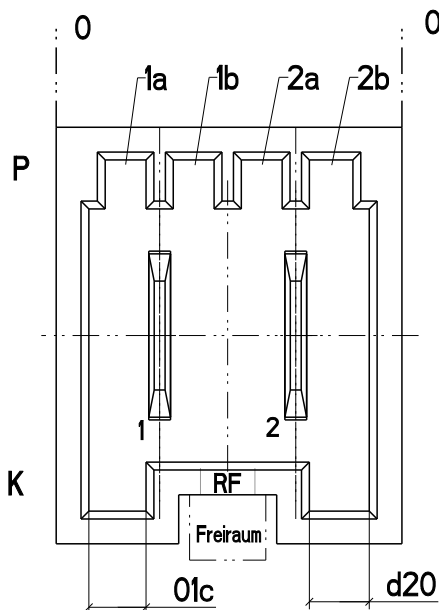
# 5. Kodierbezeichnungen fuer Wannen und Stecker Keying names for header and connector

Anwendung Komponentenstecker

Application for component connectors

Anwendung Randstecker

Application for edge connectors



Beispiele fuer Realisierung  
fehlender Kodierungen  
Examples for execution  
of missing coding

|          |       |          |                                                                                                       |                |
|----------|-------|----------|-------------------------------------------------------------------------------------------------------|----------------|
| -        | -     | -        | -                                                                                                     | -              |
| 06       | -     | 12.08.15 | -                                                                                                     | maierb         |
| 05       | -     | 30.10.12 | -                                                                                                     | maierb         |
| 04       | -     | 04.04.06 | Switch dimensions to page 7                                                                           | Maier          |
| 03       | -     | 10.12.04 | Modify Tracking distance from $\geq 3,0$ to $\geq 3,2\text{mm}$ -> Dim $1.8 \pm 0.2$ to $1.7 \pm 0.1$ | Bruno          |
| 02       | -     | 23.06.99 | Hinweis auf IEC, Mittellinien, weitere Beispiele, "Steg frei..." in Darstellung geaendert             | stoll          |
| 28.04.97 | stoll | -        | <b>RAST 5</b>                                                                                         | sheet 11 of 24 |

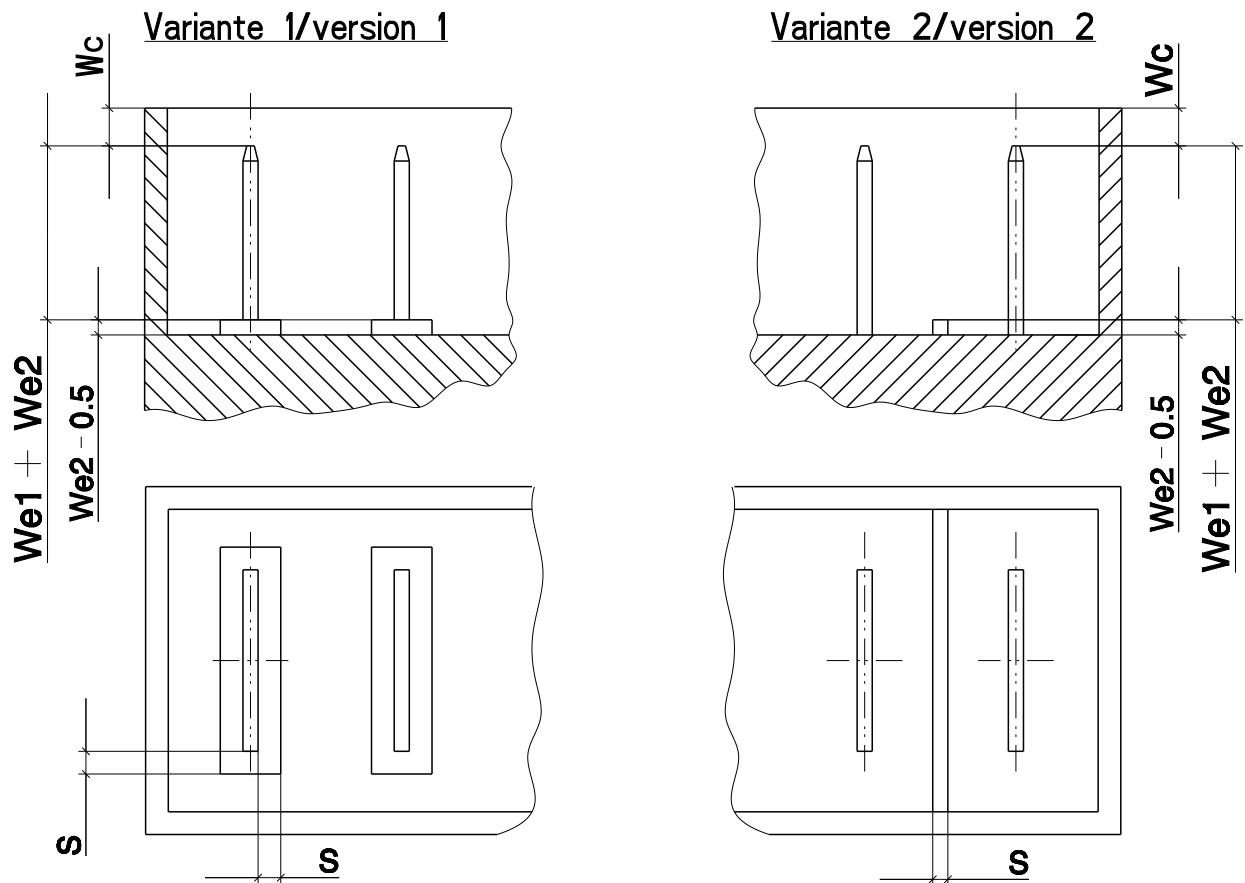
## 6. Kriechwege / Tracking distance

EN 60 335 und IEC 60 664 sind fuer die Auslegung der Wannen hinsichtlich Luft- und Kriechstrecken bindend.

EN 60 335 and IEC 60 664 are for the design of the tab housings concerning air and tracking distances mandatory.

Diese Anforderung kann durch zwei unterschiedliche Wannenausfuehrungen erfuellt werden:

This request can be realized by two different versions of the housing:



Das Mass "s" wird vom Hersteller festgelegt. Die Anwendung muss fuer Einzelstecker mit Isoliertuelle geeignet sein

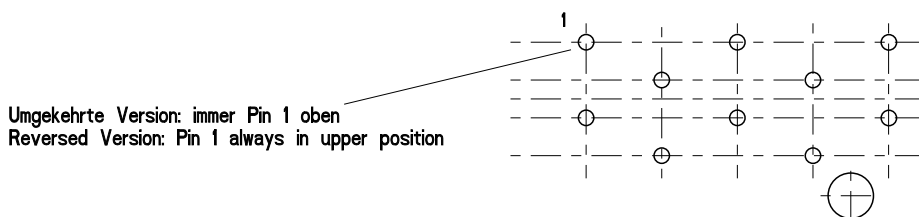
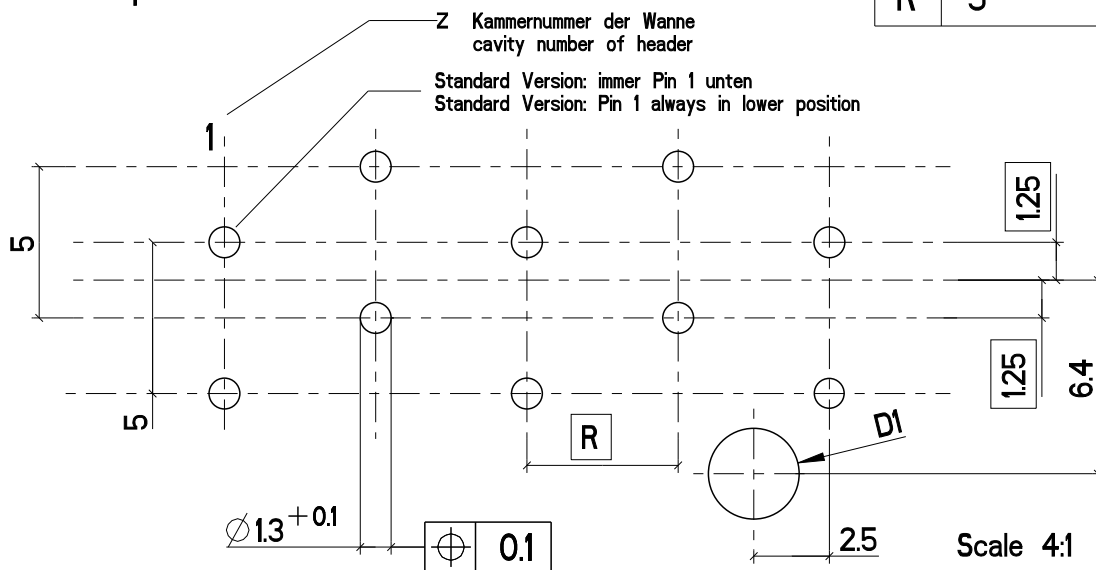
Dimension "s" is defined by the manufacturer. The application must fit for single connectors with insulation sleeve.

|          |       |          |                                          |                |
|----------|-------|----------|------------------------------------------|----------------|
| -        | -     | -        | -                                        | -              |
| 06       | -     | 12.08.15 | -                                        | maierb         |
| 05       | -     | 30.10.12 | -                                        | maierb         |
| 04       | -     | 04.04.06 | -                                        | Maier          |
| 03       | -     | 10.12.04 | -                                        | Bruno          |
| 02       | -     | 24.06.99 | Masse aufgenommen: ersten Satz geaendert | stoll          |
| 28.04.97 | stoll | -        | RAST 5                                   | sheet 12 of 24 |

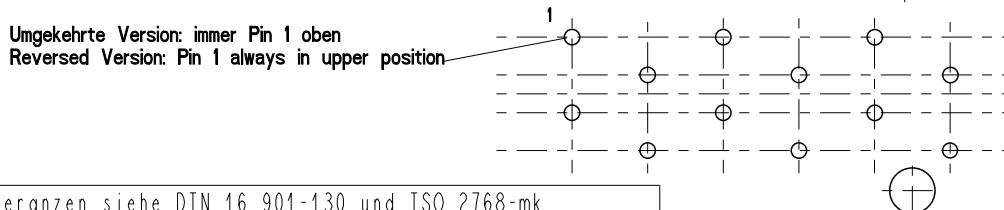
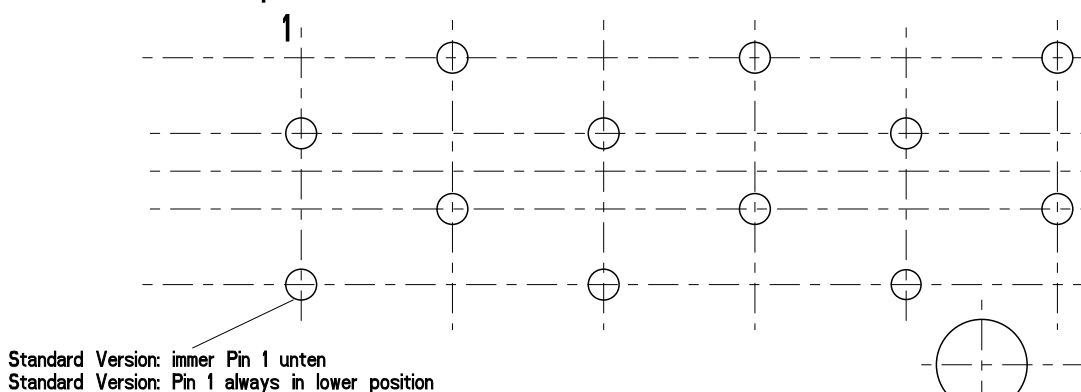
# 7. Lochbilder in der Leiterplatte von der Loetseite gesehen Hole pattern in printed circuit board seen from soldering side

ungerade Polzahl  
odd number of pins

|    |              |
|----|--------------|
| D1 | Ø 2.1 - 2.55 |
| R  | 5            |



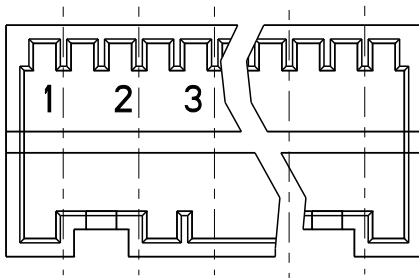
gerade Polzahl  
even number of pins



Freimasstoleranzen siehe DIN 16 901-130 und ISO 2768-mk  
not specified tolerances see DIN 16 901 - 130 and ISO 2768-mk

|    |   |          |            |        |
|----|---|----------|------------|--------|
| -  | - | -        | -          | -      |
| -  | - | -        | -          | -      |
| -  | - | -        | -          | -      |
| -  | - | -        | -          | -      |
| 06 | - | 12.08.15 | Page added | maierb |

# 8. Platinausschnitt RAST 5 D: PCB Detail for RAST 5 D:

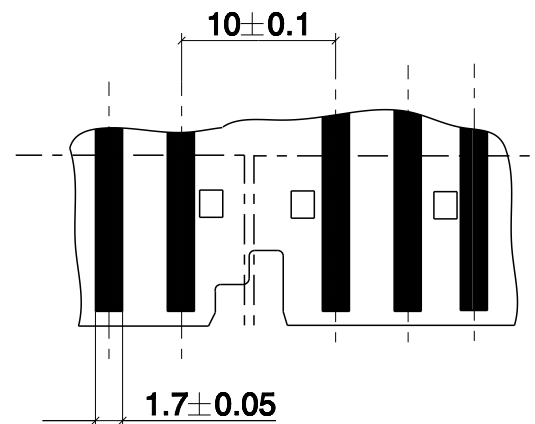
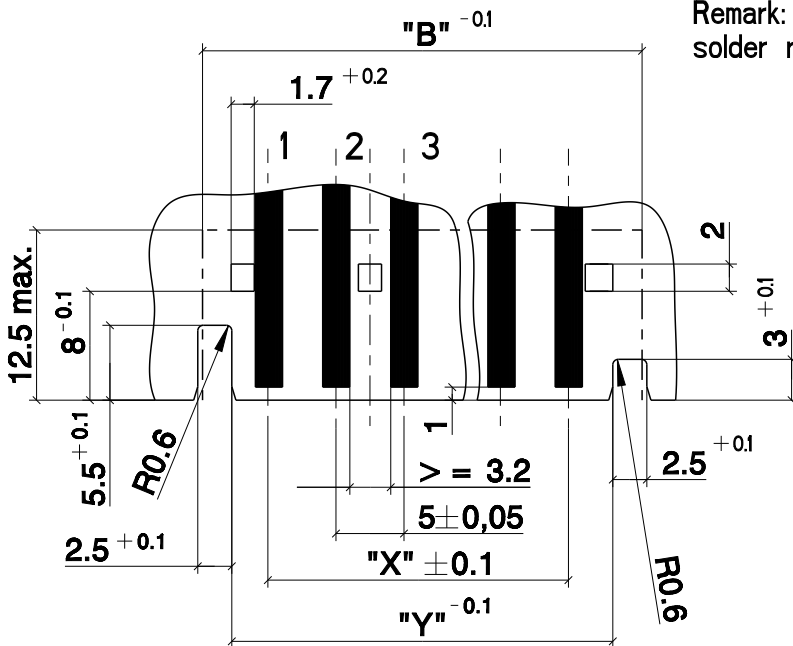


Leiterplattenrahmen bis max.  
8-polig ohne Zwischensteg

PCB frame up to max. 8-way  
without partition wall

Freimasstoleranzen siehe DIN 16 901 - 130 und ISO 2768-mK  
not specified tolerances see DIN 16 901 - 130 and ISO 2768-mK

Bemerkung:  
Loetstopplack im Steckbereich nicht zulaessig.  
Remark:  
solder resist in connector area not allowed

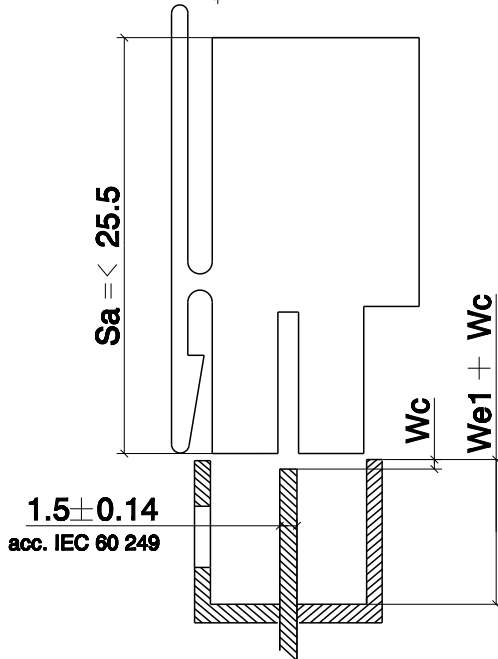


$$Y = n \times R + 0.3$$

$$n = \text{Polzahl, number of pins}$$

$$R = 5$$

$$X = (n - 1) \times R$$



| n  | Y    | B    | X  | Rastfenster<br>zw. Kammer |
|----|------|------|----|---------------------------|
| 2  | 10.3 | 14.6 | 5  | -                         |
| 3  | 15.3 | 19.6 | 10 | -                         |
| 4  | 20.3 | 24.6 | 15 | -                         |
| 5  | 25.3 | 29.6 | 20 | -                         |
| 6  | 30.3 | 34.6 | 25 | 3/4                       |
| 7  | 35.3 | 39.6 | 30 | 4/5                       |
| 8  | 40.3 | 44.6 | 35 | 4/5                       |
| 9  | 45.3 | 49.6 | 40 | 3/4-6/7                   |
| 10 | 50.3 | 54.6 | 45 | 3/4-6/7                   |
| 11 | 55.3 | 59.6 | 50 | 4/5-8/9                   |
| 12 | 60.3 | 64.6 | 55 | 4/5-8/9                   |

|          |       |          |                                                                          |                |
|----------|-------|----------|--------------------------------------------------------------------------|----------------|
| 05       | -     | 30.10.12 | Add PCB thickness and remark for solder resist.                          | -              |
| 05       | -     | 30.10.12 | Add dimension and tolerance for trace width 1.7mm, add tolerance for 5mm | maierb         |
| 04       | -     | 04.04.06 | -                                                                        | Maier          |
| 03       | -     | 10.12.04 | Change view display, tracking distance from >3 to >=3.2                  | Bruno          |
| 02       | -     | 24.06.99 | Mass fuer Abstand Leiterbahn zum Leiterplattenrand aufgenommen           | stoll          |
| 06       | -     | 12.08.15 | -                                                                        | maierb         |
| 03.06.97 | stoll | -        | RAST 5                                                                   | sheet 14 of 24 |

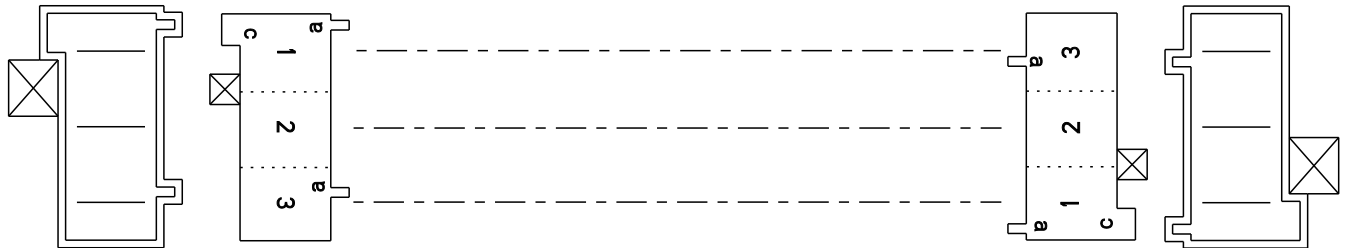
## 9. Beispiele fuer Parallelverdrahtung: Examples for parallel wiring:

Leitungssatz: RAST 5 Schneidklemmtechnik, Aussenverrastung  
cable set: RAST 5 insulation displacement technology, external locking

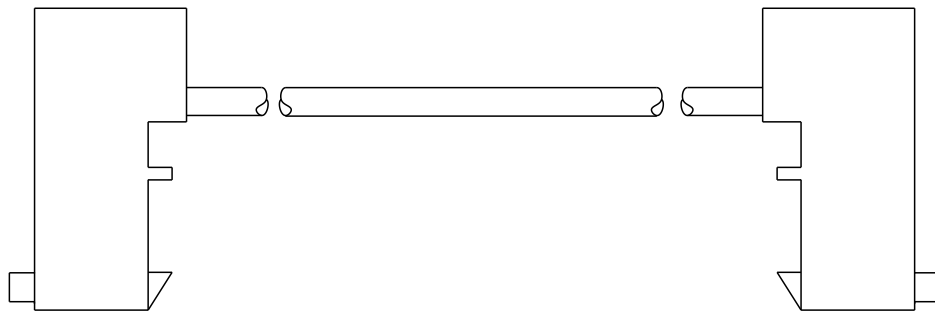


RAST 5

RAST 5

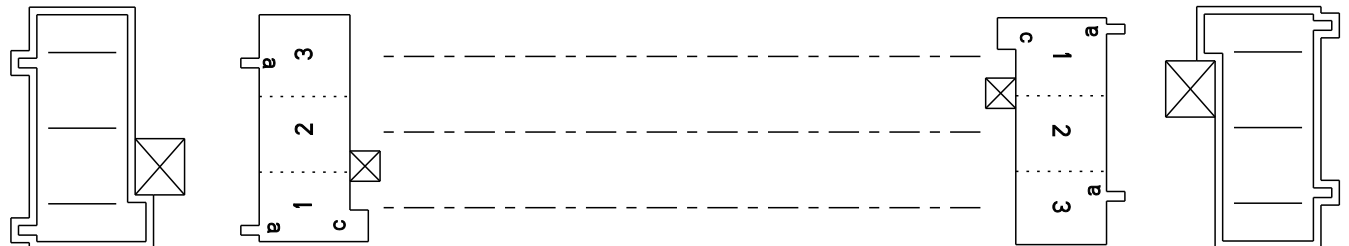


Leitungssatz: RAST 5 Schneidklemmtechnik, Innenverrastung  
Cable set: RAST 5 insulation displacement technology, internal locking



RAST 5

RAST 5



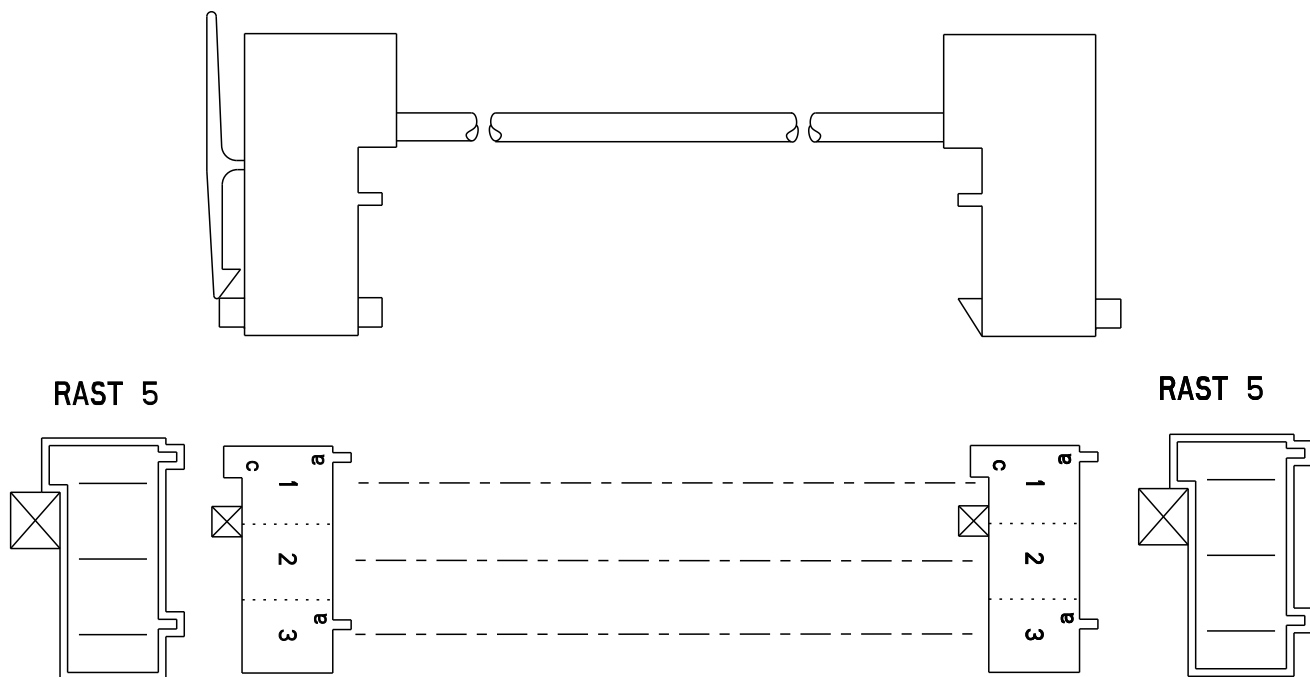
|          |       |          |                                     |                |
|----------|-------|----------|-------------------------------------|----------------|
| -        | -     | -        | -                                   | -              |
| 06       | -     | 12.08.15 | -                                   | maierb         |
| 05       | -     | 30.10.12 | -                                   | maierb         |
| 04       | -     | 04.04.06 | Reorder page                        | Maier          |
| 03       | -     | 10.12.04 | -                                   | Bruno          |
| 02       | -     | 24.06.99 | Kodierrippe von e nach a korrigiert | stoll          |
| 28.11.97 | stoll | -        | RAST 5                              | sheet 15 of 24 |

The present document which is for guidance only, aims at providing information regarding the application of Rast connectors.

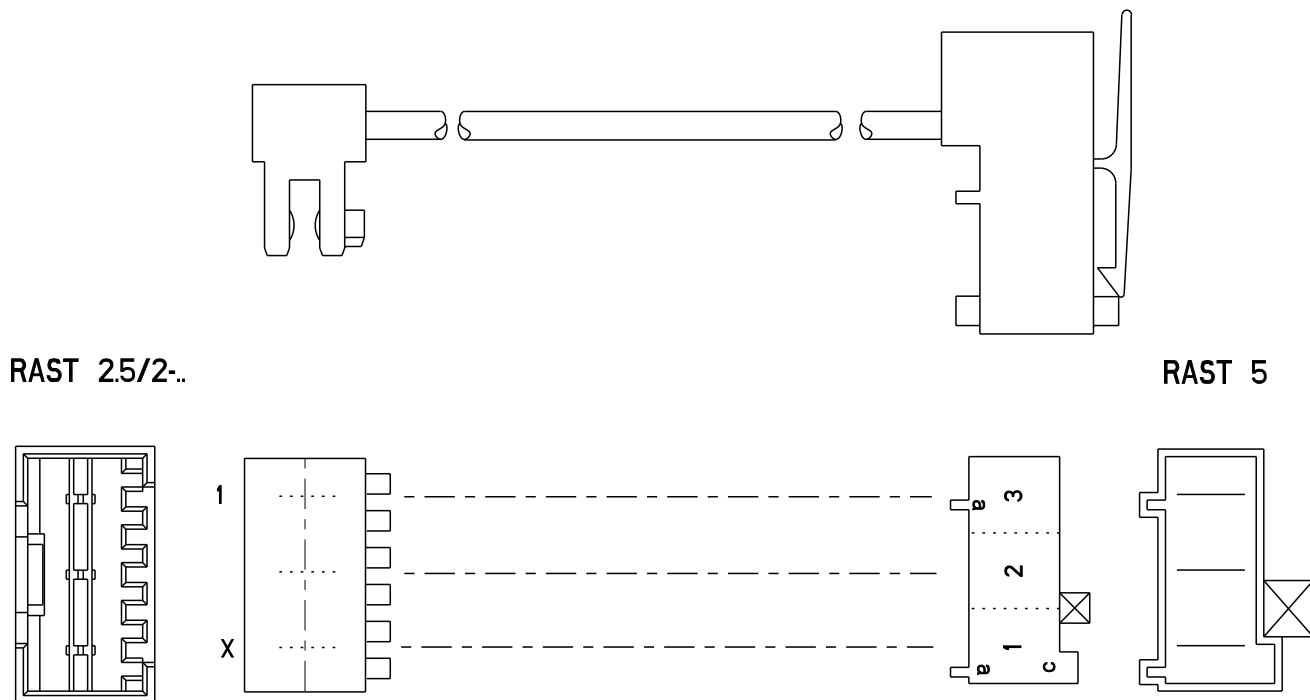
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Leitungssatz: RAST 5 Schneidklemmtechnik, Aussenverrastung - Innenverrastung  
cable set: RAST 5 insulation displacement technology, external locking - internal locking



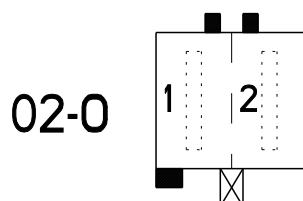
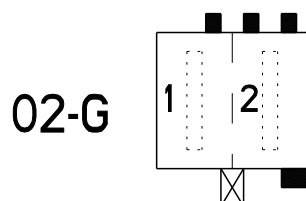
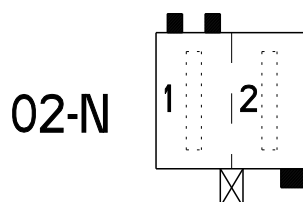
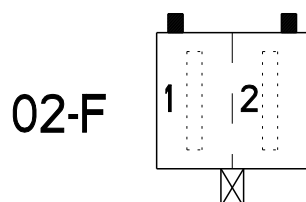
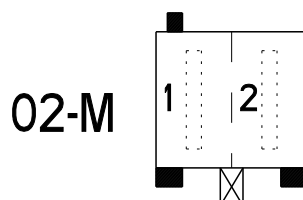
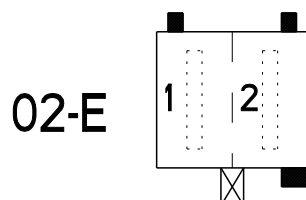
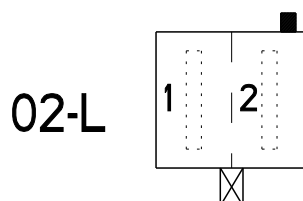
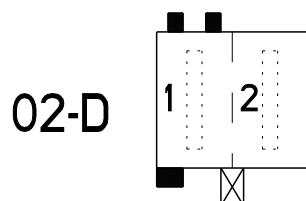
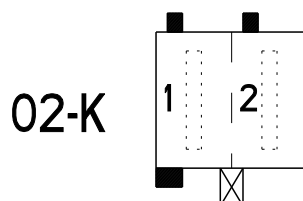
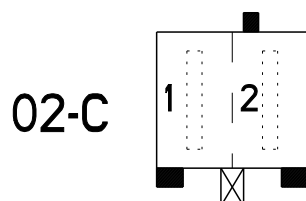
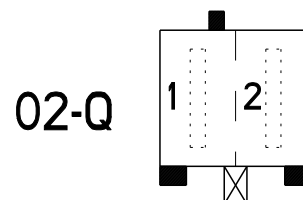
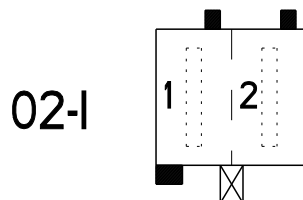
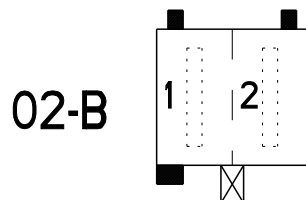
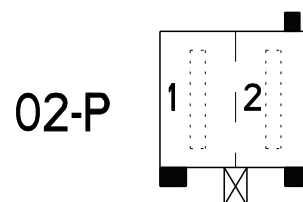
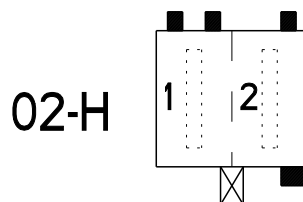
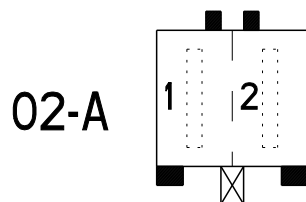
Leitungssatz: RAST 2.5 / RAST 5 Schneidklemm, Aussenverrastung  
Cable set: RAST 2.5 / RAST 5 insulation displacement technology, external locking



|          |       |          |                                     |                |
|----------|-------|----------|-------------------------------------|----------------|
| -        | -     | -        | -                                   | -              |
| 06       | -     | 12.08.15 | -                                   | maierb         |
| 05       | -     | 30.10.12 | -                                   | maierb         |
| 04       | -     | 04.04.06 | Reorder page                        | Maier          |
| 03       | -     | 10.12.04 | -                                   | Bruno          |
| 02       | -     | 24.06.99 | Kodierrippe von e nach a korrigiert | stoll          |
| 28.11.97 | stoll | -        | RAST 5                              | sheet 16 of 24 |

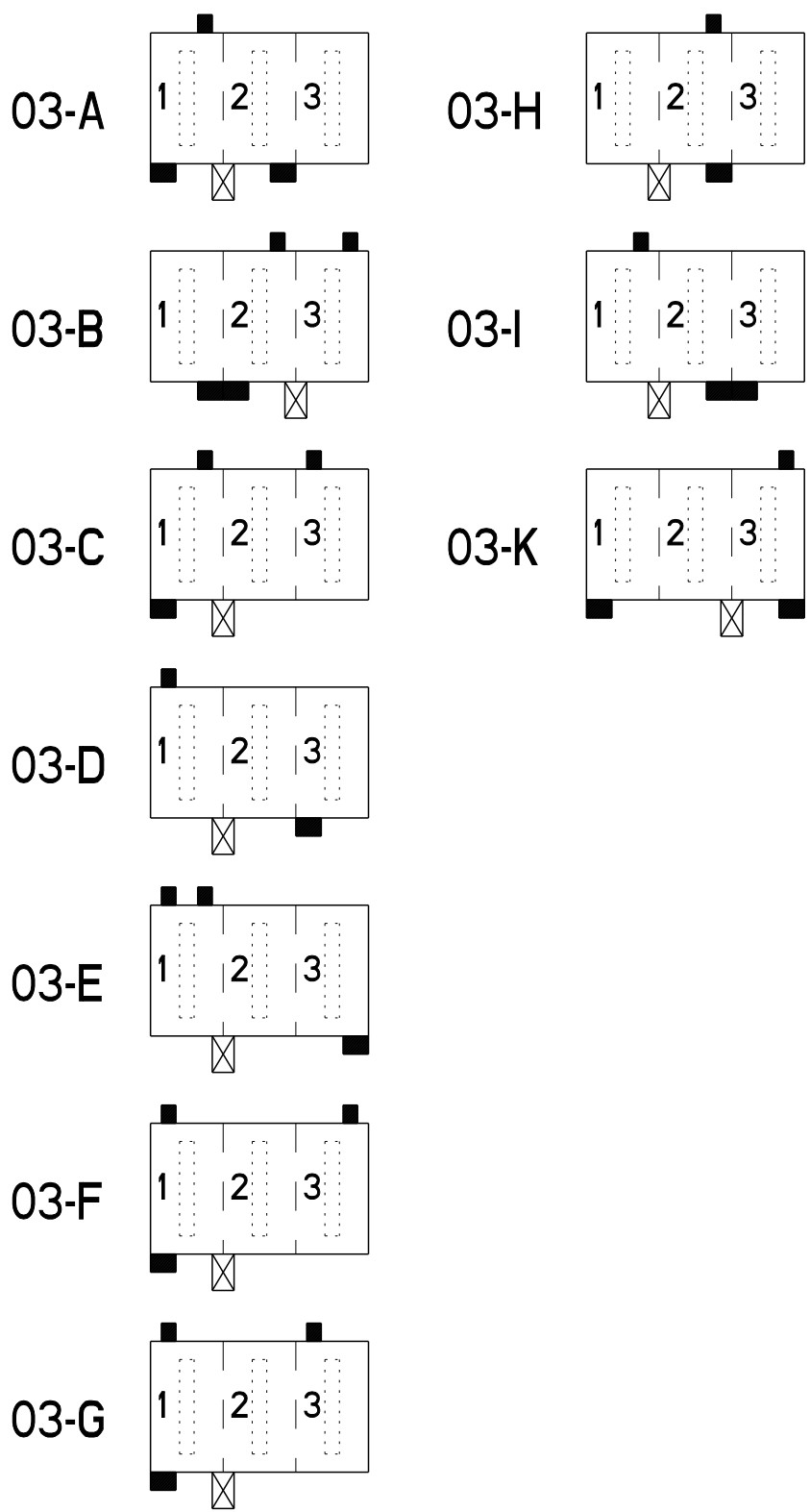


# 10.1 Kodierungen 2-polig / Keyings 2-way:



|    |   |          |   |        |
|----|---|----------|---|--------|
| -  | - | -        | - | -      |
| -  | - | -        | - | -      |
| 06 | - | 12.08.15 | - | maierb |
| 05 | - | 30.10.12 | - | maierb |
| 04 | - | 04.04.06 | - | Maier  |
| 03 | - | 10.12.04 | - | Bruno  |

10.2 Kodierungen 3-polig / Keyings 3-way:

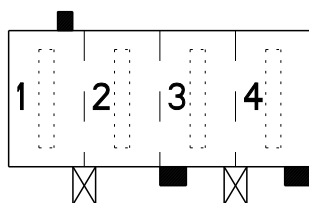


|                |   |          |   |                |
|----------------|---|----------|---|----------------|
| -              | - | -        | - | -              |
| -              | - | -        | - | -              |
| 06             | - | 12.08.15 | - | maierb         |
| 05             | - | 30.10.12 | - | maierb         |
| 04             | - | 04.04.06 | - | Maier          |
| 03             | - | 10.12.04 | - | Bruno          |
| 28.04.97 stoll |   |          | - | RAST 5         |
|                |   |          |   | sheet 18 of 24 |

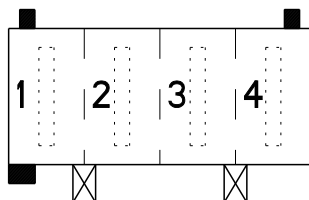
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## 10.3 Kodierungen 4-polig / Keyings 4-way:

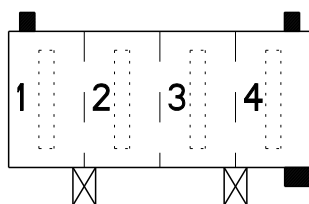
04-A



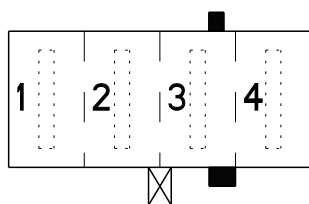
04-B



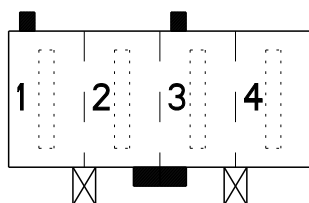
04-C



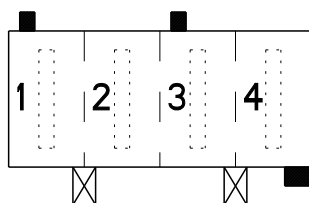
04-D



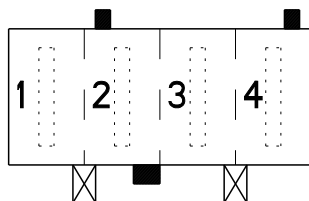
04-E



04-F



04-G



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|    |   |          |   |        |
|----|---|----------|---|--------|
| -  | - | -        | - | -      |
| -  | - | -        | - | -      |
| 06 | - | 12.08.15 | - | maierb |
| 05 | - | 30.10.12 | - | maierb |
| 04 | - | 04.04.06 | - | Maier  |
| 03 | - | 10.12.04 | - | Bruno  |

28.04.97 stoll

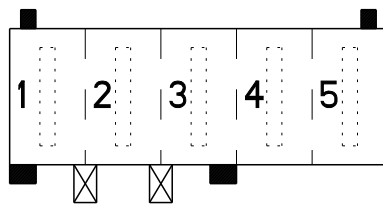
-

**RAST 5**

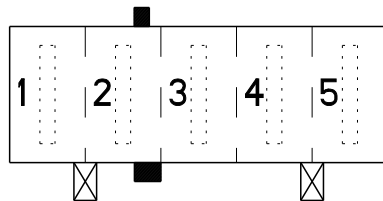
sheet 19 of 24

## 10.4 Kodierungen 5-polig / Keyings 5-way:

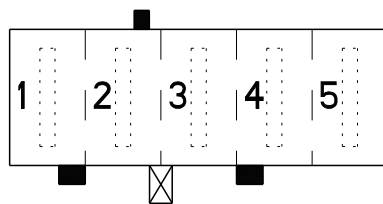
05-A



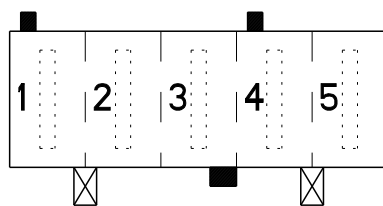
05-B



05-C



05-D



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|                |   |          |   |                |
|----------------|---|----------|---|----------------|
| -              | - | -        | - | -              |
| -              | - | -        | - | -              |
| 06             | - | 12.08.15 | - | maierb         |
| 05             | - | 30.10.12 | - | maierb         |
| 04             | - | 04.04.06 | - | Maier          |
| 03             | - | 10.12.04 | - | Bruno          |
| 28.04.97 stoll |   |          | - | RAST 5         |
|                |   |          |   | sheet 20 of 24 |

The present document which is for guidance only, aims at providing information regarding the application of Rast connectors.

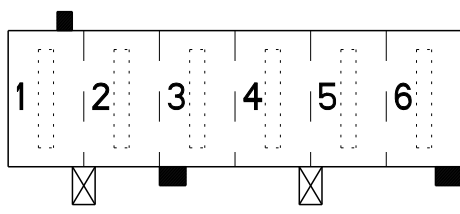
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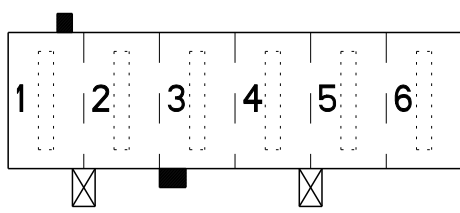


# 10.5 Kodierungen 6-polig / Keyings 6-way:

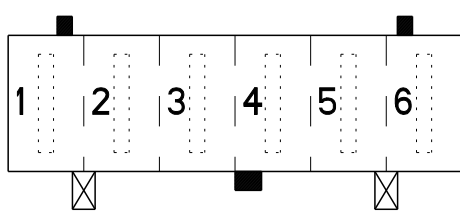
06-A



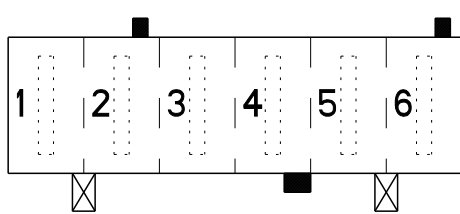
06-B



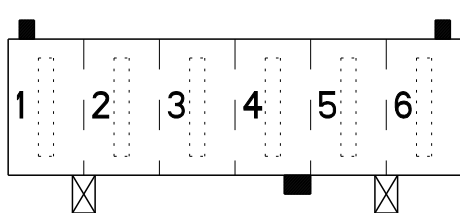
06-C



06-D



06-E



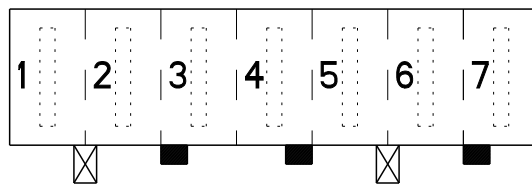
|          |       |          |        |                |
|----------|-------|----------|--------|----------------|
| -        | -     | -        | -      | -              |
| -        | -     | -        | -      | -              |
| 06       | -     | 12.08.15 | -      | maierb         |
| 05       | -     | 30.10.12 | -      | maierb         |
| 04       | -     | 04.04.06 | -      | Maier          |
| 03       | -     | 10.12.04 | -      | Bruno          |
| 28.04.97 | stoll | -        | RAST 5 | sheet 21 of 24 |

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The present document which is for guidance only, aims at providing information regarding the application of Rast connectors.

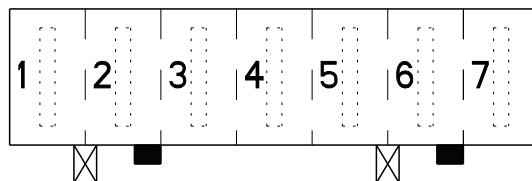
Consult your customer for specific issues.

## 10.6 Kodierungen 7-polig / Keyings 7-way

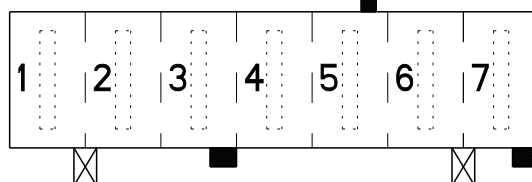
07-A



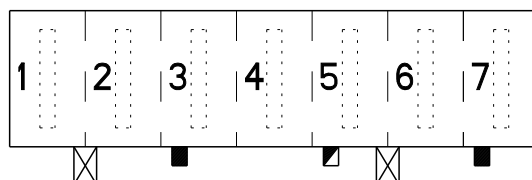
07-B



07-C

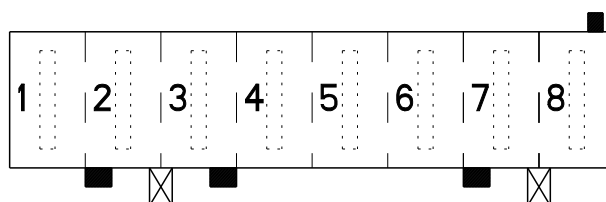


07-A/S

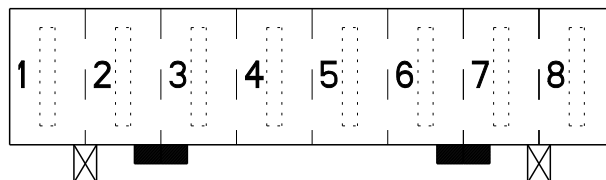


## 10.7 Kodierungen 8-polig / Keyings 8-way:

08-C



08-D



|          |       |          |        |                |
|----------|-------|----------|--------|----------------|
| -        | -     | -        | -      | -              |
| -        | -     | -        | -      | -              |
| 06       | -     | 12.08.15 | -      | maierb         |
| 05       | -     | 30.10.12 | -      | maierb         |
| 04       | -     | 04.04.06 | -      | Maier          |
| 03       | -     | 10.12.04 | -      | Bruno          |
| 28.04.97 | stoll | -        | RAST 5 | sheet 22 of 24 |

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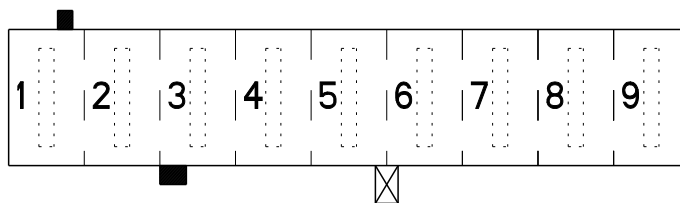
There is no liability for any direct, indirect or consequential damages arising from the content of this document.

Consult your customer for specific issues.

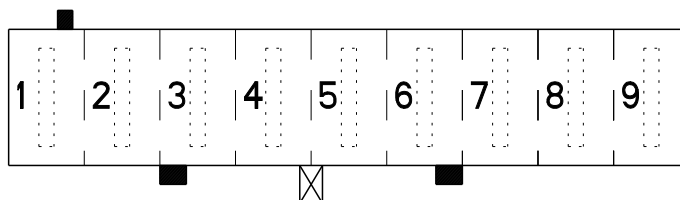


## 10.8 Kodierungen 9-polig / Keyings 9-way:

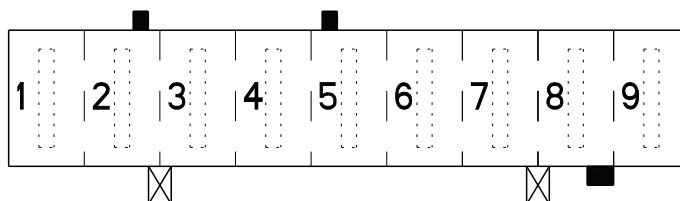
09-A



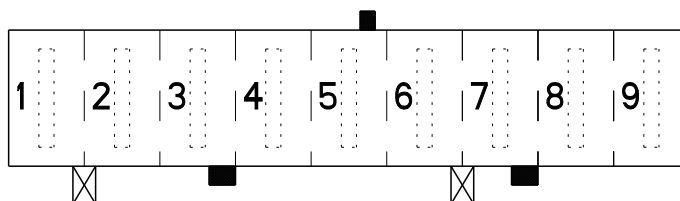
09-B



09-C

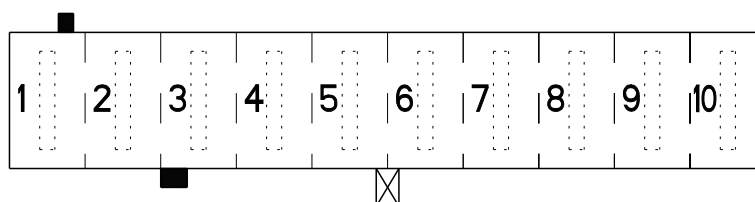


09-D



## 10.9 Kodierungen 10-polig / Keyings 10-way:

10-A



|    |   |          |   |        |
|----|---|----------|---|--------|
| -  | - | -        | - | -      |
| -  | - | -        | - | -      |
| 06 | - | 12.08.15 | - | maierb |
| 05 | - | 30.10.12 | - | maierb |
| 04 | - | 04.04.06 | - | Maier  |
| 03 | - | 10.12.04 | - | Bruno  |

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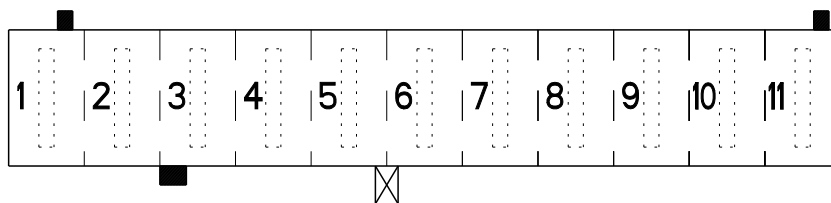
A

B

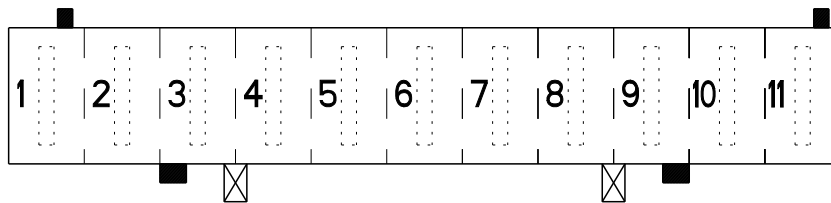
C

# 10.10 Kodierungen 11-polig / Keyings 11-way:

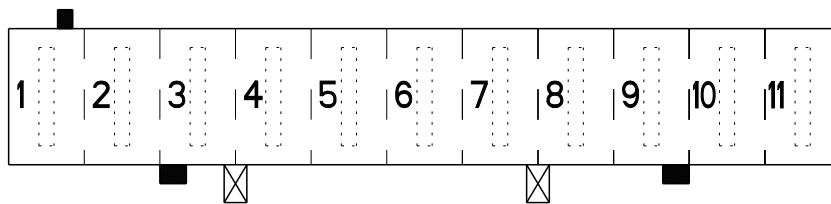
11-A



11-B



11-C



D

E

F

|                |   |          |   |                |
|----------------|---|----------|---|----------------|
| -              | - | -        | - | -              |
| -              | - | -        | - | -              |
| 06             | - | 12.08.15 | - | maierb         |
| 05             | - | 30.10.12 | - | maierb         |
| 04             | - | 04.04.06 | - | Maier          |
| 03             | - | 10.12.04 | - | Bruno          |
| 28.04.97 stoll |   |          | - | RAST 5         |
|                |   |          |   | sheet 24 of 24 |