

hm connectors: hm 2.0

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Connectors according to IEC 61076-4-101

The hardmetric connector system ept hm 2.0 was developed and manufactured according to the international standard IEC 61076-4-101. Thus the user can rely on a worldwide standard for the connection of printed circuit boards using connectors with a large number of contacts. The printed circuit boards can be exchanged between systems without difficulty. Important parameters such as the fixing, shielding and coding of the printed circuit boards are compatible regardless of the individual application.

The grid

ept hm 2.0 connectors are designed with a 2 mm metric grid. They can be easily connected in series to form a continuous 2 mm grid. This grid pattern is advantageous when creating a printed circuit board since no space is lost in the individual connector modules.

Connecting modules

The ends of the insulator material are chamfered to simplify the connection of additional modules and avoid twisting the connectors. The chamfers ensure the exact positioning on the printed circuit boards and stabilize the modules.

Coding

The connectors must be coded in a modern BUS system to avoid mixing up the printed circuit boards. The possibility of coding has already been defined in the IEC 61076-4-101.

"Coding keys" can be manually snapped onto the multi-function block of the connector types A, D, L and M. The different inserts are color-coded and can thus be kept apart.

Multi-function block

The modules A, D, L and M are equipped with a multi-function block. This in turn can be equipped with the coding keys. The molded guides ensure the correct alignment of the male and female connectors to each other and they offer anti-twist protection before contacting.

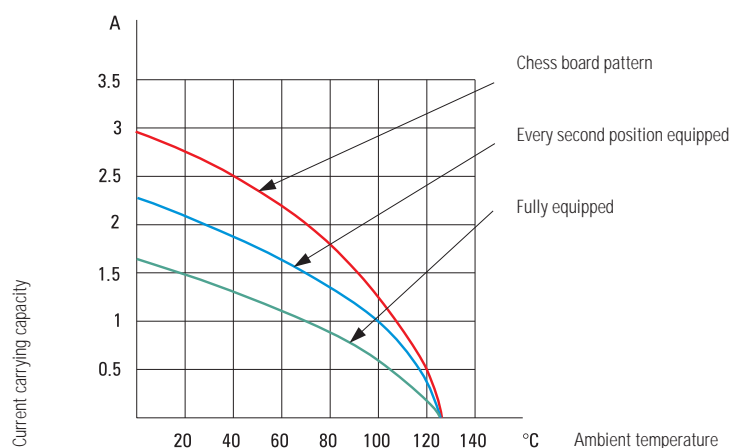
The coding keys can be inserted or withdrawn using a simple insertion or withdrawal tool.

Contact lengths of the mating and termination side

ept offers three different lengths for the front and four different lengths for the rear side. The different contact lengths are necessary because certain signal or ground contacts need to be the first to be connected/disconnected when adding/removing a module.

The 11.25 mm long contacts are mainly required for the shielding rows z and f.

Derating diagram



Technical specifications

| Electrical and mechanical properties | | |
|---|-----------------------------------|-----------------------------|
| Grid | | 2 mm |
| Temperature range | | – 55 °C to + 125 °C |
| Durability | Performance level II | > 250 mating cycles |
| Insulator material | | PBT glass filled, UL 94 V-0 |
| Contact resistance acc. to IEC 512-5 | | max. 20 mΩ |
| Contact material | Male | Bronze |
| | Female | Bronze |
| Insulation resistance Acc. to IEC 512-5 | Contact/Contact | min. 10 ⁴ MΩ |
| | Contact/Shielding | min. 10 ⁴ MΩ |
| Operational current at ambient temperature | + 20 °C | 1.5 A |
| | + 70 °C | 1.0 A |
| Insertion force per pin | Contact | max. 0.75 N |
| | Shielding | max. 1 N |
| Separating force per pin | Contact | min. 0.15 N |
| | Shielding | min. 0.15 N |
| Environment/approvals | RoHS compliant/UL (file: E130314) | |

| Test voltage | | | | |
|---|------------------|-------------------------|-------------------------|-------------------------|
| | | Fully loaded | Every second position | Chessboard |
| Rows a, c, e Rows b, d | Within the row | 750 V _{r.m.s} | 1500 V _{r.m.s} | – |
| | Between the rows | 1500 V _{r.m.s} | 1500 V _{r.m.s} | – |
| Rows a, b, c Rows a, b, c, d Rows a, b, c, d, e | Within the row | 750 V _{r.m.s} | 1500 V _{r.m.s} | 1500 V _{r.m.s} |
| | Between the rows | 750 V _{r.m.s} | 750 V _{r.m.s} | 1200 V _{r.m.s} |

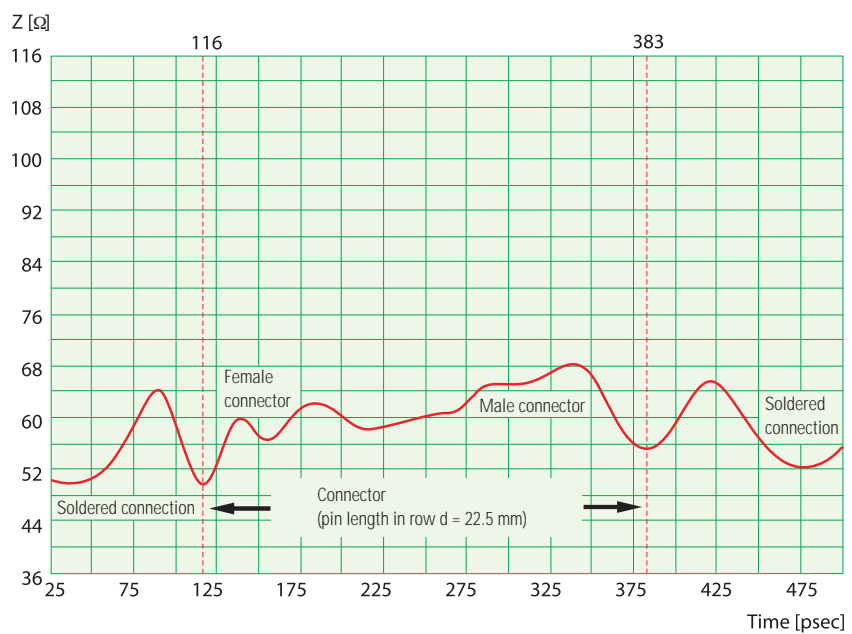
| Creepages and clearances according to IEC 61076-4-101 | | | | | | | |
|---|------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|
| | | Fully loaded | | Every second position | | Chessboard | |
| | | Backplane Male connector | Module Female connector | Backplane Male connector | Module Female connector | Backplane Male connector | Module Female connector |
| Rows a, c, e Rows b, d | Within the row | 0.8 mm | 0.6 mm | 2.5 mm | 2.5 mm | – | – |
| | Between the rows | 2.5 mm | 2.5 mm | 2.5 mm | 2.5 mm | – | – |
| Rows a, b, c Rows a, b, c, d Rows a, b, c, d, e | Within the row | 0.8 mm | 0.6 mm | 2.5 mm | 2.5 mm | 2.5 mm | 2.5 mm |
| | Between the rows | 0.8 mm | 0.6 mm | 0.8 mm | 0.6 mm | 1.2 mm | 1.5 mm |

Electrical characteristics

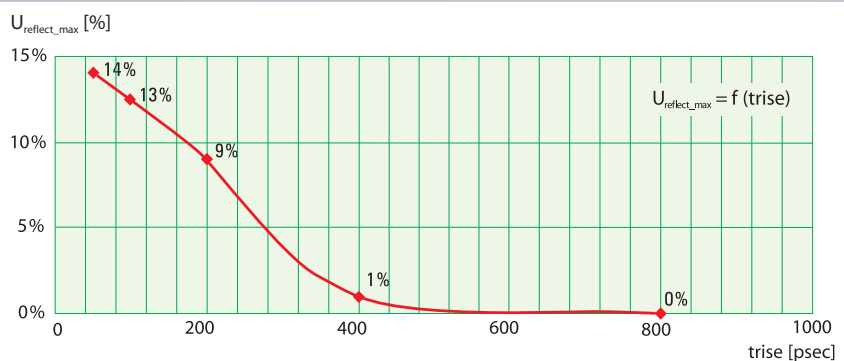
The connector system ept hm 2.0 has been especially developed for high data rates. Below some HF characteristics are described as example. A SPICE model is available for simulation when developing systems. The simulation model was verified by means of TDR measurements.

Impedance gradient along a pin in row d

Impedance measured after eliminating multiple reflection



$U_{\text{reflect_max}}$ is the maximum reflection of an ept hm 2.0 connector in percent, shown as function of the signal rise time. The connector is the only electrical discontinuity in a selected 50 ohm system.

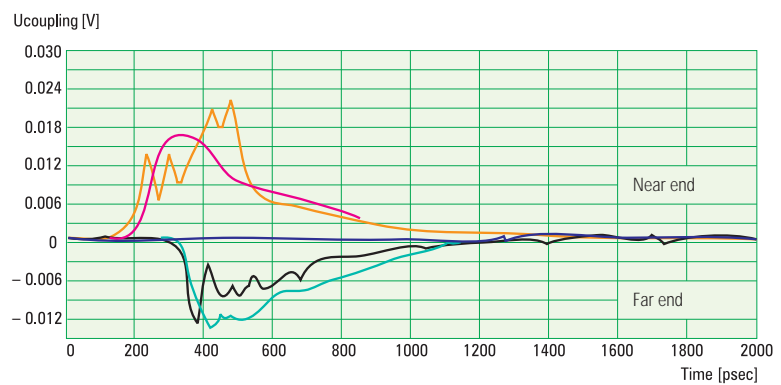


Cross talk

Near end and far end cross talk was measured and simulated for different arrangements. A 200 mV input signal and a signal rise time of 25 psec. were applied.

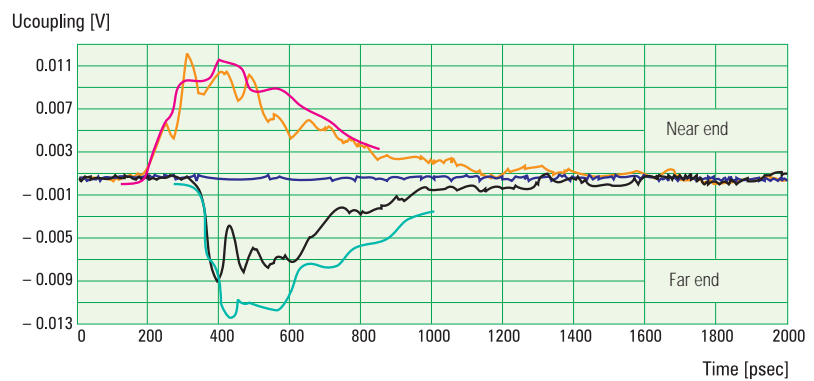
Cross talk from a pin in row d to an adjacent pin in row d (from C to G)

- Measured cross talk, near end
- Simulated cross talk, near end
- Background noise
- Measured cross talk, far end
- Simulated cross talk, far end

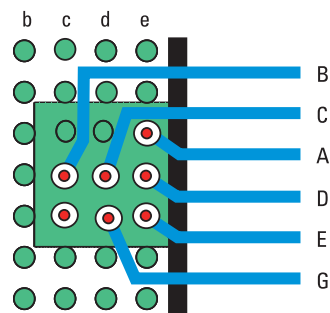


Cross talk from a pin in row d to a diagonally positioned pin in row e (from C to A or E)

- Measured cross talk, near end
- Simulated cross talk, near end
- Background noise
- Measured cross talk, far end
- Simulated cross talk, far end



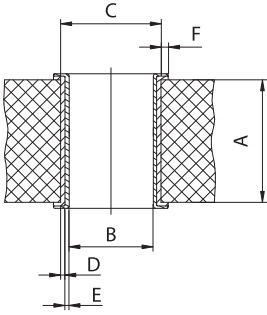
Setup for measuring



Hole specifications

Plated through-hole according to IEC 60352-5

ept offers adapted press-fit zones for various new board surfaces.

| | | Nominal hole | Ø 0.6 mm |
|---|-------------------------------|-----------------|---|
| imm. Sn printed circuit boards | | | |
|  | A | PCB thickness | min. 1.4 mm |
| | B | Plated hole | Ø 0.60 ± 0.05 mm |
| | C | Drill hole | 0.70 ± 0.02 mm |
| | D | Cu plating | min. 25 µm |
| | E | Imm. Sn plating | max. 1.5 µm |
| | F | Annular ring | min. 0.1 mm |
| | Ni, Au printed circuit boards | | |
| | A | PCB thickness | min. 1.4 mm |
| | B | Plated hole | Ø 0.60 ± 0.05 mm |
| | C | Drill hole | 0.70 ± 0.02 mm |
| | D | Cu plating | min. 25 µm |
| | E | Ni, Au plating | 0.05 – 0.2 µm Au over 2.5 – 5 µm Ni |
| | F | Annular ring | min. 0.1 mm |
| pure Cu printed circuit boards | | | |
| | A | PCB thickness | min. 1.4 mm |
| | B | Plated hole | Ø 0.60 ± 0.05 mm |
| | C | Drill hole | 0.70 ± 0.02 mm |
| | D | Cu plating | min. 25 µm |
| | E | OSP* | e. g. GLICOAT-SMD (F2) with 0.12 – 0.15 µm |
| | F | Annular ring | min. 0.1 mm |
| | HAL Sn printed circuit boards | | |
| | A | PCB thickness | min. 1.4 mm |
| | B | Plated hole | Ø 0.60 ± 0.05 mm |
| | C | Drill hole | 0.70 ± 0.02 mm |
| | D | Cu plating | min. 25 µm |
| | E | HAL Sn | 5 – 15 µm |
| | F | Annular ring | min. 0.1 mm |

* OSP = Organic Solderability Preservatives

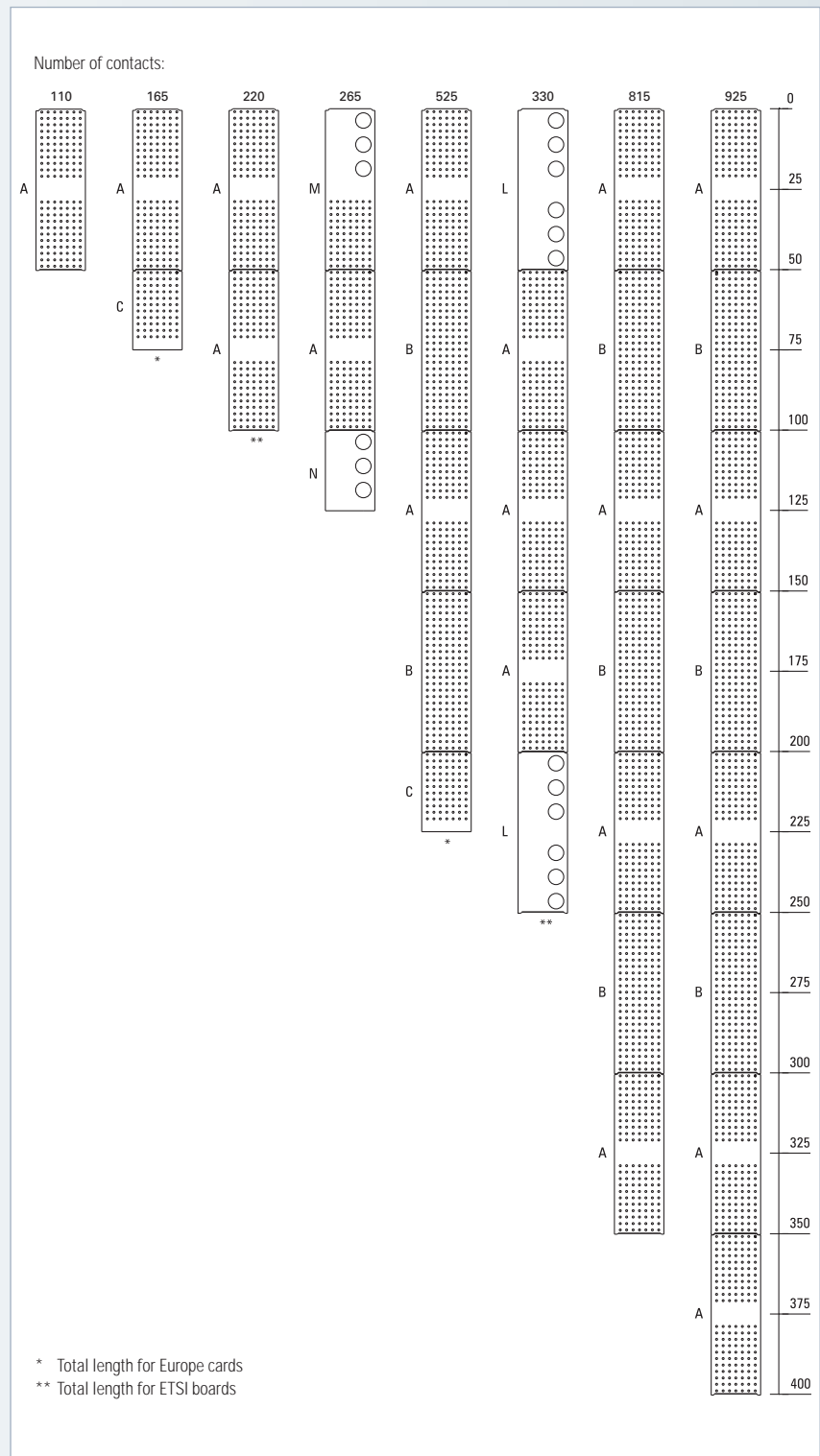
System modularity

ept hm 2.0 modules offer a number of possibilities to optimize large contact densities, especially in combination with coaxial or fiber-optic connections.

Using module type A, connections with a length of 50 mm can be set up in increments of 25 mm to achieve an overall length as required.

The connectors with a multifunction block (types A, M, L) are preferably arranged at the beginning of a connector row. The type B module on the other hand is only arranged between other modules.

Due to their inverse-polarity protection the 25 mm type C and N modules are arranged at the end of a connector row. The coding keys in the multifunction block and the modules type C and N ensure that the modules are plugged in correctly.

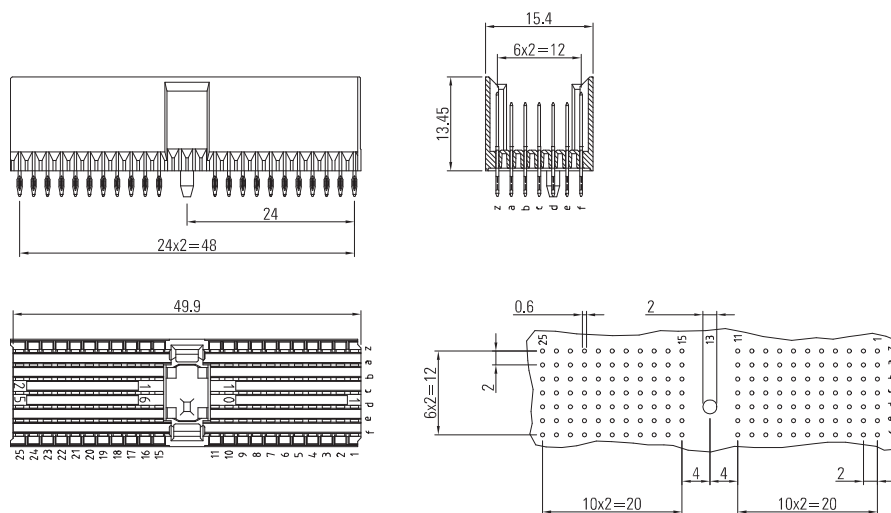


Pin lengths

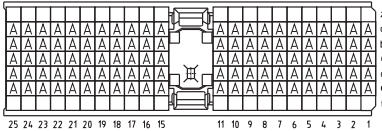
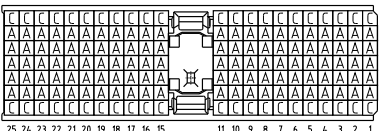
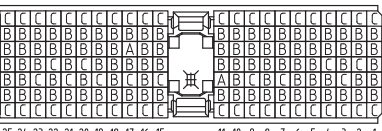
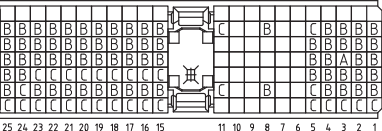
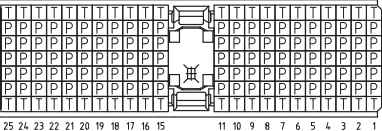
| Dimension drawing | Contact | Connection | Contact length | Use |
|-------------------|---------|-------------------------------|----------------|-----------------------------|
| | A | Without rear mating zone | 8.25 ± 0.1 | Level 1, contact for signal |
| | B | | 9.75 ± 0.1 | Level 2, contact for signal |
| | C | | 11.25 ± 0.1 | Level 3, shielding |
| | K | With rear mating zone 13 mm | 8.25 ± 0.1 | Level 1, contact for signal |
| | L | | 9.75 ± 0.1 | Level 2, contact for signal |
| | M | | 11.25 ± 0.1 | Level 3, shielding |
| | N | With rear mating zone 14.5 mm | 8.25 ± 0.1 | Level 1, contact for signal |
| | P | | 9.75 ± 0.1 | Level 2, contact for signal |
| | Q | | 11.25 ± 0.1 | Level 3, shielding |
| | R | With rear mating zone 16 mm | 8.25 ± 0.1 | Level 1, contact for signal |
| | S | | 9.75 ± 0.1 | Level 2, contact for signal |
| | T | | 11.25 ± 0.1 | Level 3, shielding |



Dimensions in mm



Hole pattern

| No. of contacts | Contact arrangement | Press-fit technology – Performance level I |
|-----------------|---|--|
| | | PCB thickness > 2.2 |
| | | Part number |
| 110 |  | 243-11010-15 |
| 154 |  | 243-11310-15 |
| 154 | cPCI Hot-Swap (P1)  | 243-11322-15 |
| 100 | cPCI Telephony Spec (P4)  | 243-11323-15 |
| 154 |  | 243-11360-15F |

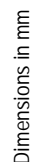


On request
 – Performance level I or customer-specific
 – Contact arrangement (see page 71)

Accessories
 – Press-fit tool (see page 198)
 – Support tool (see page 199)
 – Coding keys (see page 68)
 – Shroud (see page 66)

Cross reference
 – Pin lengths (see page 34)

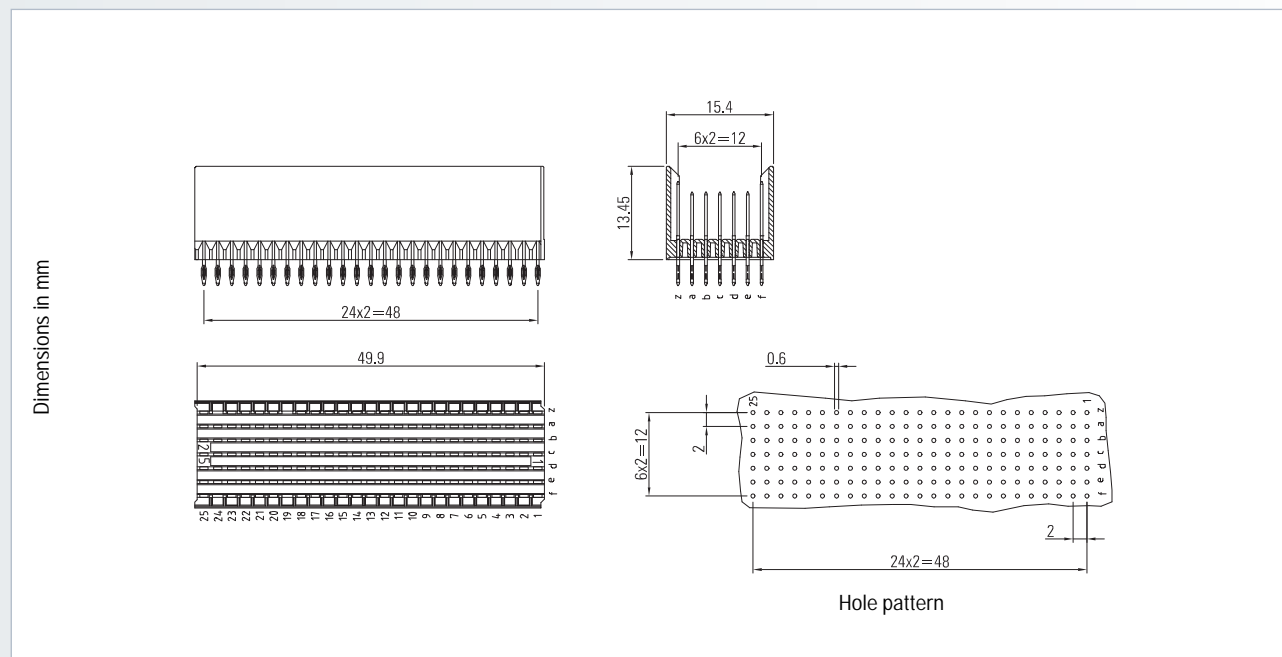
Note
 – CompactPCI P1/P4
 – For PCB thickness 1.4 - 2.2 mm use part number 243-11xxx-05



- Performance level I or customer-specific
- Also in THTR

- Press-fit tool
(see page 202)
- Support tool
(see page 203)
- Coding keys
(see page 68)

- CompactPCI J1/J4



| No. of contacts | Contact arrangement | Press-fit technology – Performance level II |
|-----------------|---------------------|---|
| | | PCB thickness > 2.2 |
| | | Part number |
| 125 | | 243-21010-15 |
| 125 | | 243-21020-15 |
| 175 | | 243-21310-15 |
| 175 | | 243-21320-15 |



On request

- Performance level I or customer-specific
- Contact arrangement (see page 71)

Accessories

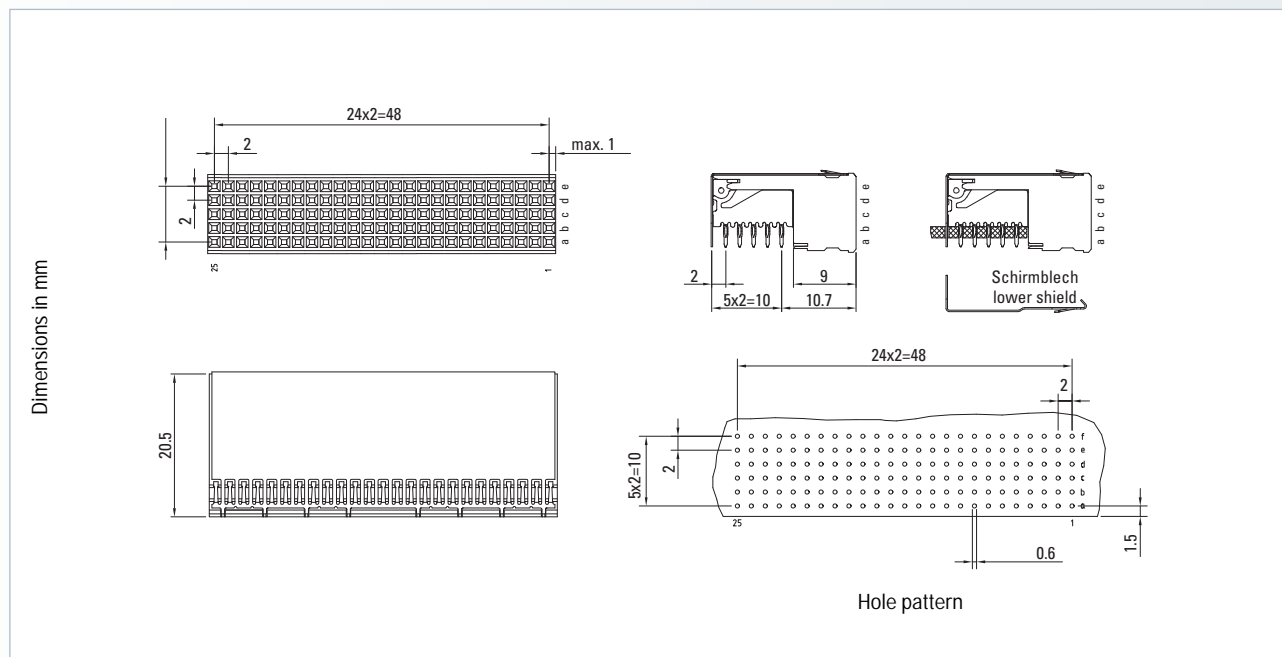
- Press-fit tool (see page 200)
- Support tool (see page 201)
- Shroud (see page 66)

Cross reference

- Pin lengths (see page 34)

Note

- For PCB thickness 1.4 - 2.2 mm use part number 243-21xxx-05



| No. of contacts | Description | Press-fit technology Performance level II |
|-----------------|-------------------|--|
| | | Part number |
| 125 | Without shielding | 244-21000-15 |
| 125 | With shielding | 244-21300-15 |
| – | Lower shield | 244-21600-1 |



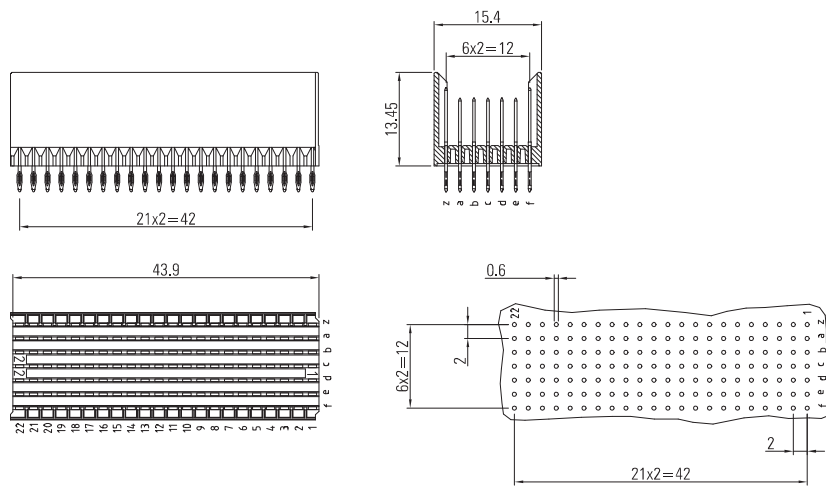
On request

- Performance level I or customer-specific
- Also in THTR

Accessories

- Press-fit tool (see page 202)
- Support tool (see page 203)

Dimensions in mm



Hole pattern

| No. of contacts | Contact arrangement | Press-fit technology – Performance level II |
|-----------------|---------------------|---|
| | | PCB thickness > 2.2 |
| | | Part number |
| 154 | | 243-22310-15 |
| 154 | | 243-22311-15 |
| 154 | | 243-22320-15 |
| 154 | | 243-22360-15F |



On request

- Performance level I or customer-specific
- Contact arrangement (see page 71)

Accessories

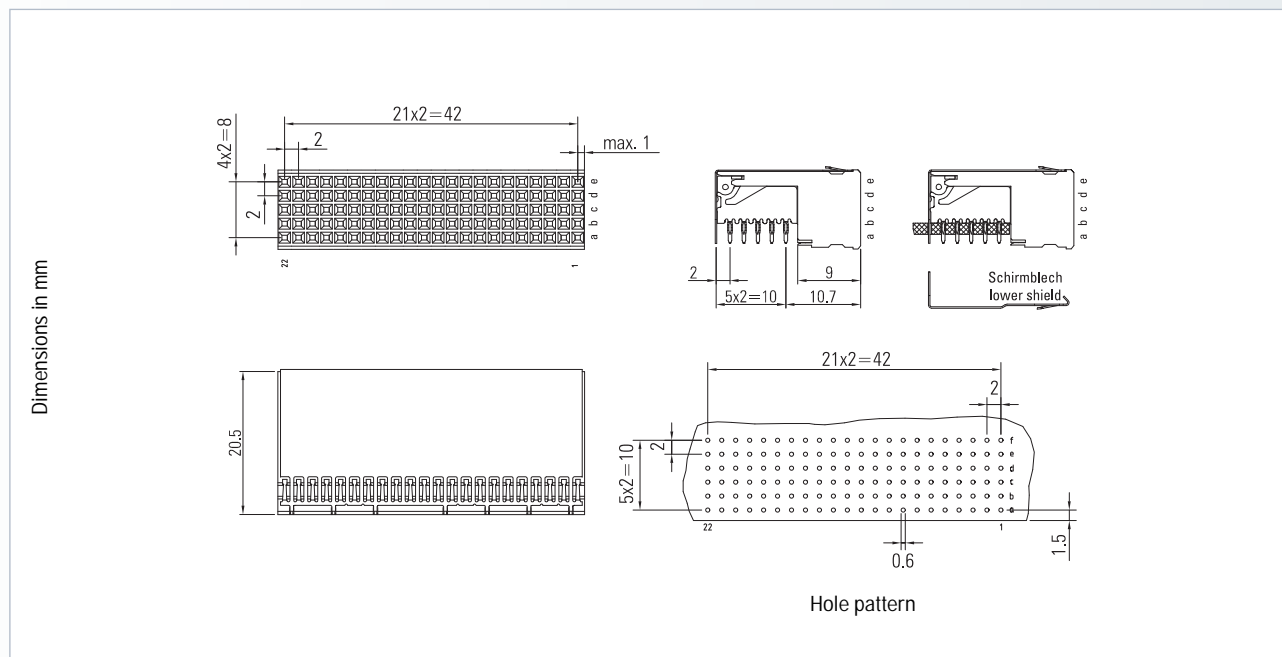
- Press-fit tool (see page 200)
- Support tool (see page 201)
- Shroud (see page 66)

Cross reference

- Pin lengths (see page 34)

Note

- CompactPCI P2/P5
- For PCB thickness 1.4 - 2.2 mm use part number 243-22xxx-05



| No. of contacts | Description | Press-fit technology Performance level II |
|-----------------|-------------------|--|
| | | Part number |
| 110 | Without shielding | 244-22000-15 |
| 110 | With shielding | 244-22300-15 |
| – | Lower shield | 244-22600-1 |



On request

- Performance level I or customer-specific
- Also in THTR

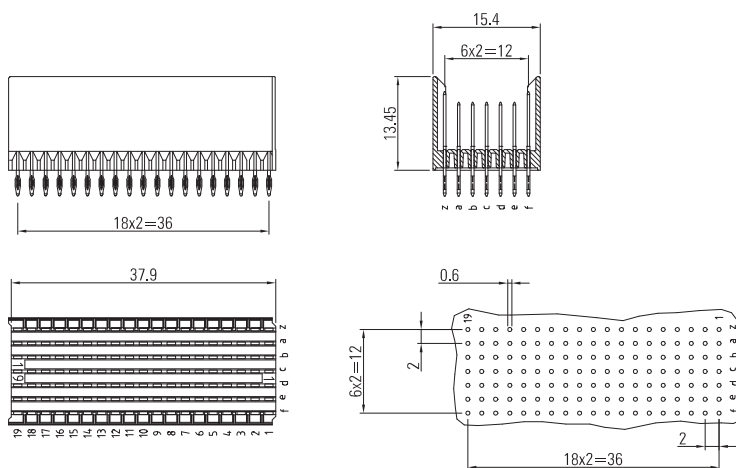
Accessories

- Press-fit tool (see page 202)
- Support tool (see page 203)

Note

- CompactPCI J2/J5

Dimensions in mm



Hole pattern

| No. of contacts | Contact arrangement | Press-fit technology – Performance level II |
|-----------------|---------------------|---|
| | | PCB thickness > 2.2 |
| | | Part number |
| 133 | | 243-23310-15 |
| 133 | | 243-23320-15 |
| 133 | | 243-23360-15F |
| 133 | | 243-23700-15F |



On request

- Performance level I or customer-specific
- Contact arrangement (see page 71)

Accessories

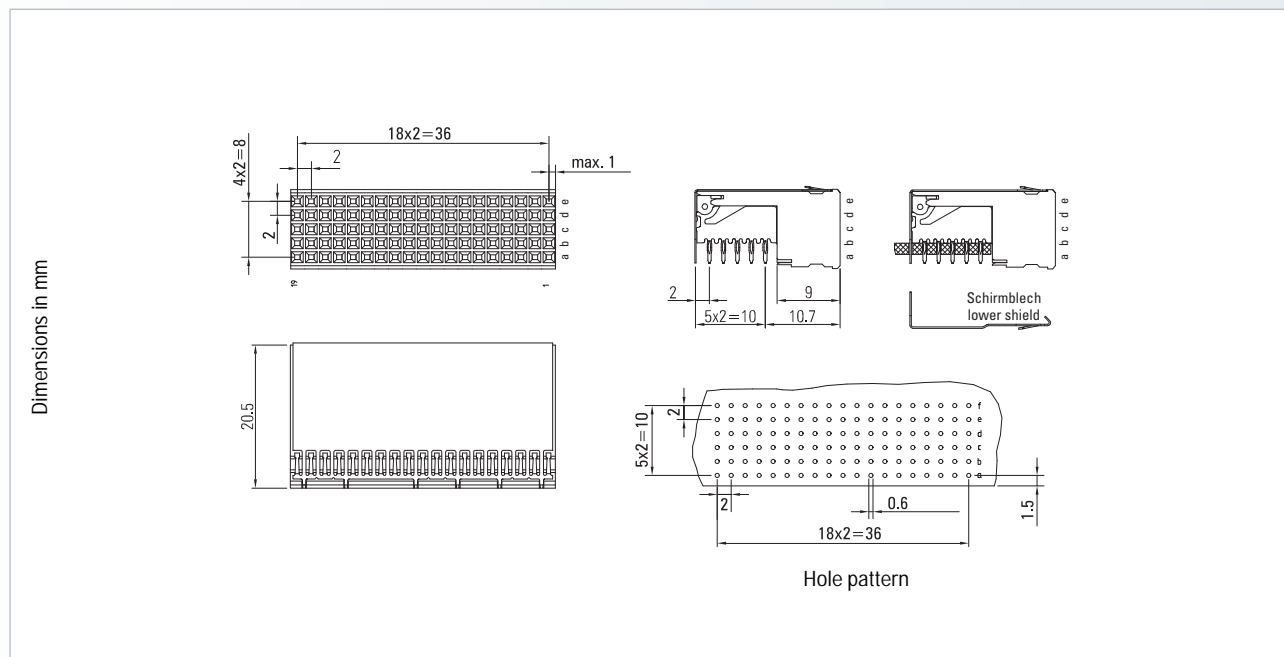
- Press-fit tool (see page 200)
- Support tool (see page 201)
- Shroud (see page 66)

Cross reference

- Pin lengths (see page 34)

Note

- VME J0 and cPCI P3
- For PCB thickness 1.4 - 2.2 mm use part number 243-23xxx-05



| No. of contacts | Description | Press-fit technology |
|-----------------|-------------------|----------------------|
| | | Performance level II |
| | | Part number |
| 95 | Without shielding | 244-23000-15 |
| 95 | With shielding | 244-23300-15 |
| — | Lower shield | 244-23600-1 |



On request

- Performance level I or customer-specific
- Also in THTR

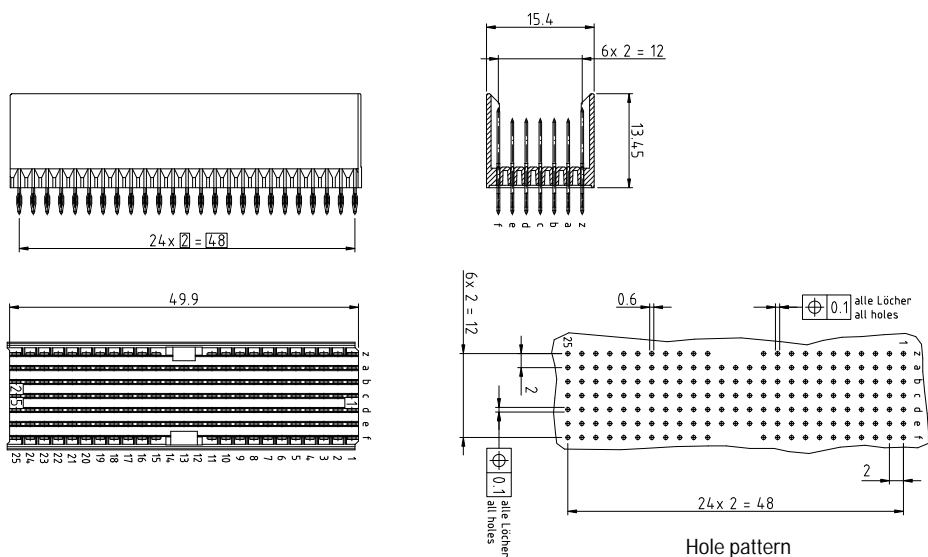
Accessories

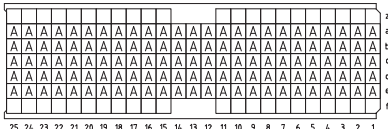
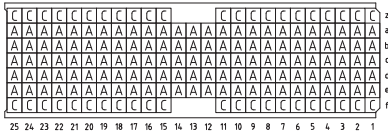
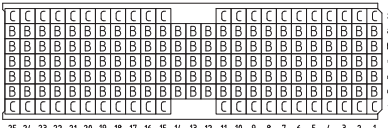
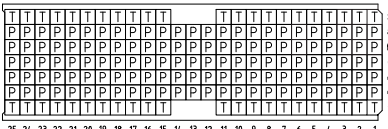
- Press-fit tool (see page 202)
- Support tool (see page 203)

Note

- VME P0 and cPCI J3

Dimensions in mm



| No. of contacts | | Press-fit technology – Performance level II |
|---------------------|---|---|
| | | PCB thickness > 2.2 |
| Contact arrangement | | Part number |
| 125 |  | 243-61010-15 |
| 169 |  | 243-61310-15 |
| 169 |  | 243-61320-15 |
| 169 |  | 243-61360-15F |



On request

- Performance level I or customer-specific
- Contact arrangement (see page 72)

Accessories

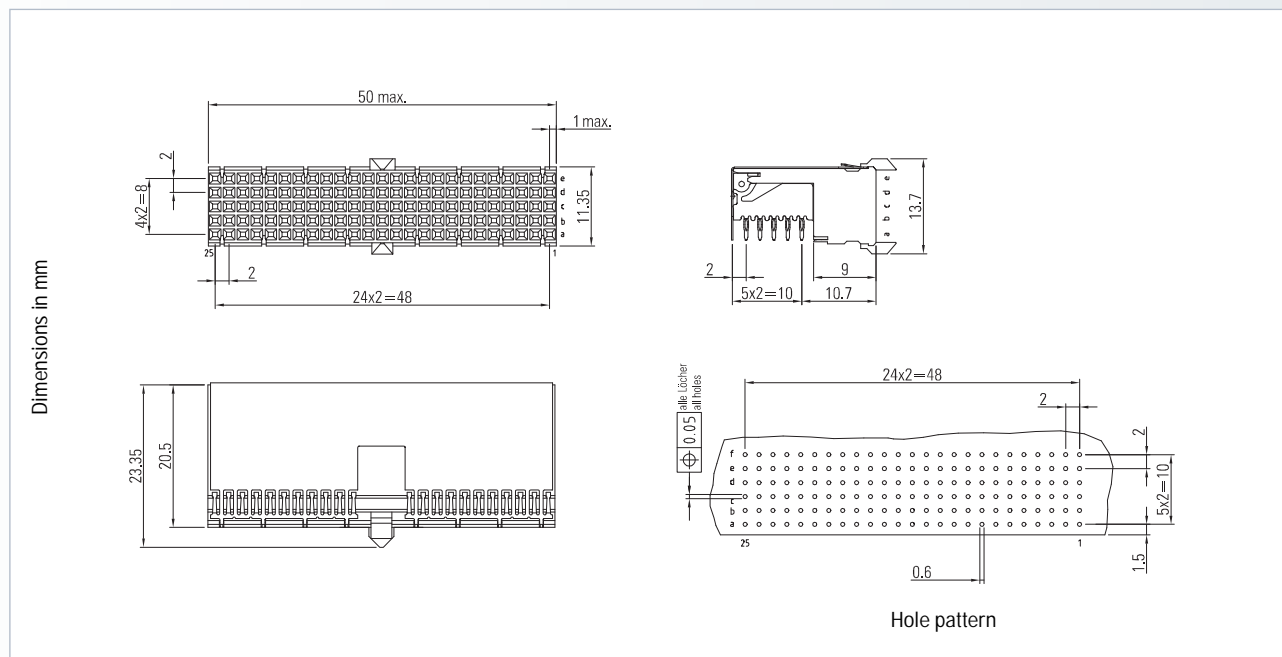
- Press-fit tool (see page 198)
- Support tool (see page 199)
- Shroud (see page 67)

Cross reference

- Pin lengths (see page 34)

Note

- For PCB thickness 1.4 - 2.2 mm use part number 243-61xxx-05



| No. of contacts | Description | Press-fit technology |
|-----------------|-------------------|----------------------|
| | | Performance level II |
| | | Part number |
| 125 | Without shielding | 244-61000-15 |
| 125 | With shielding | 244-61300-15 |
| – | Lower shield | 244-11600-1 |

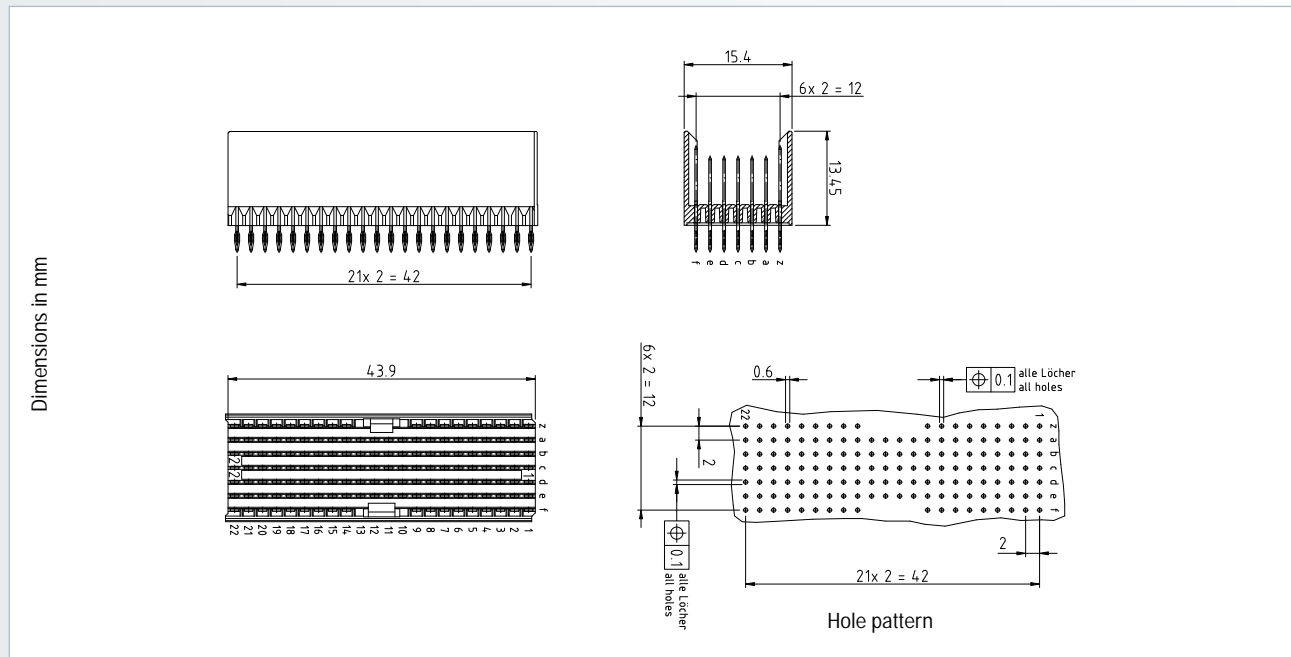


On request

- Performance level I or customer-specific
- Also in THTR

Accessories

- Press-fit tool (see page 202)
- Support tool (see page 203)



| No. of contacts | Contact arrangement | Press-fit technology – Performance level II |
|-----------------|---------------------|---|
| | | PCB thickness > 2.2 |
| | | Part number |
| 110 | | 243-62010-15 |
| 146 | | 243-62310-15 |
| 146 | | 243-62320-15 |
| 146 | | 243-62360-15F |



On request

- Performance level I or customer-specific
- Contact arrangement (see page 72)

Accessories

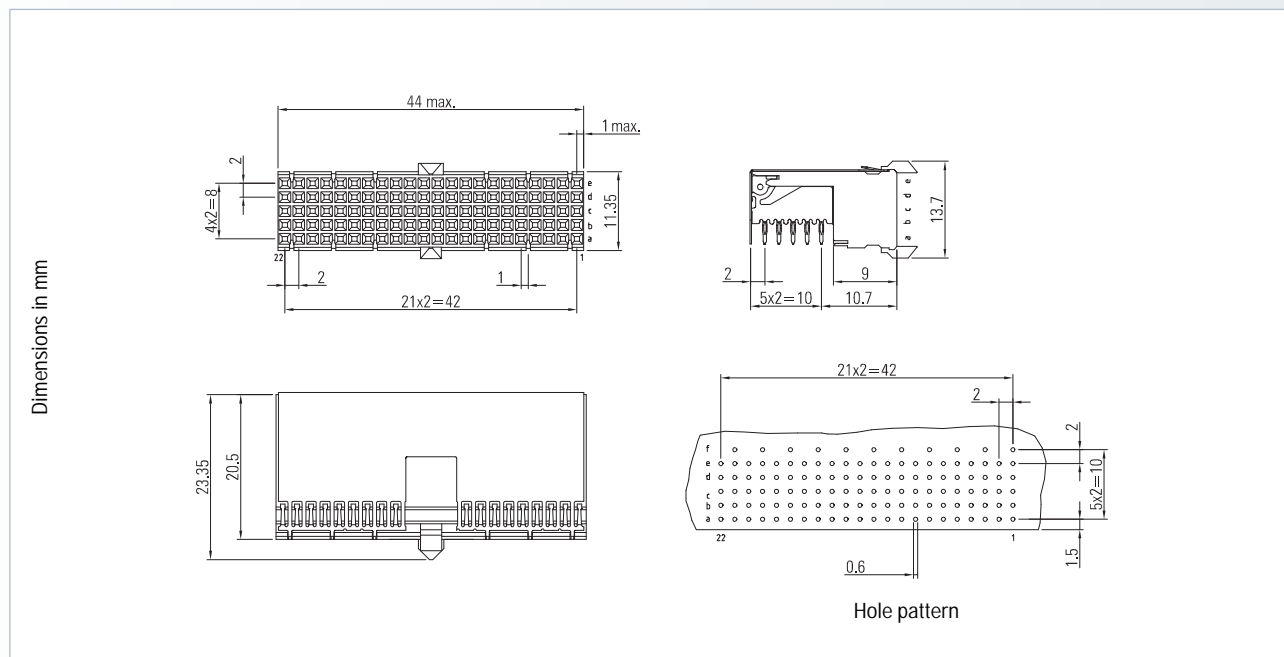
- Press-fit tool (see page 198)
- Support tool (see page 199)
- Shroud (see page 67)

Cross reference

- Pin lengths (see page 34)

Note

- For PCB thickness 1.4 - 2.2 mm use part number 243-62xxx-05



| No. of contacts | Description | Press-fit technology |
|-----------------|-------------------|----------------------|
| | | Performance level II |
| | | Part number |
| 110 | Without shielding | 244-62000-15 |
| 110 | With shielding | 244-62300-15 |



On request

- Performance level I or customer-specific
- Also in THTR

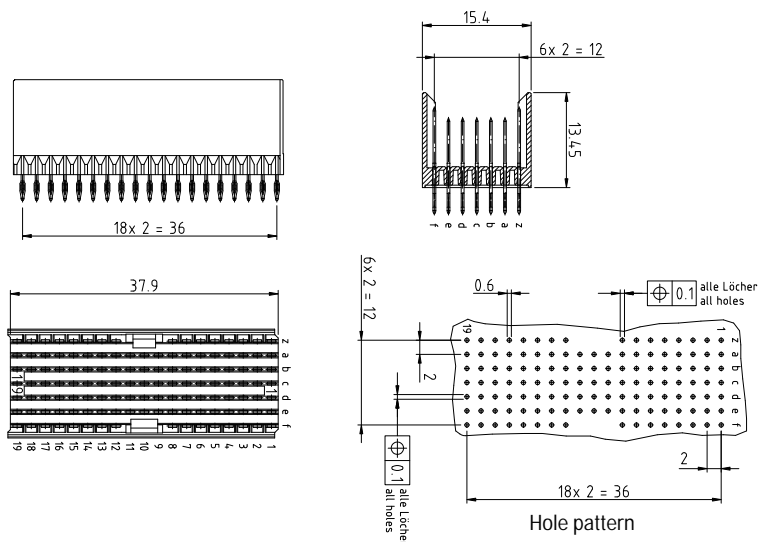
Accessories

- Press-fit tool (see page 202)
- Support tool (see page 203)

Note

- CompactPCI RJ5

Dimensions in mm



| No. of contacts | Contact arrangement | Press-fit technology – Performance level II |
|-----------------|---------------------|---|
| | | PCB thickness > 2.2 |
| | | Part number |
| 95 | | 243-63010-15 |
| 127 | | 243-63310-15 |
| 127 | | 243-63320-15 |
| 127 | | 243-63360-15F |



On request

- Performance level I or customer-specific
- Contact arrangement (see page 72)

Accessories

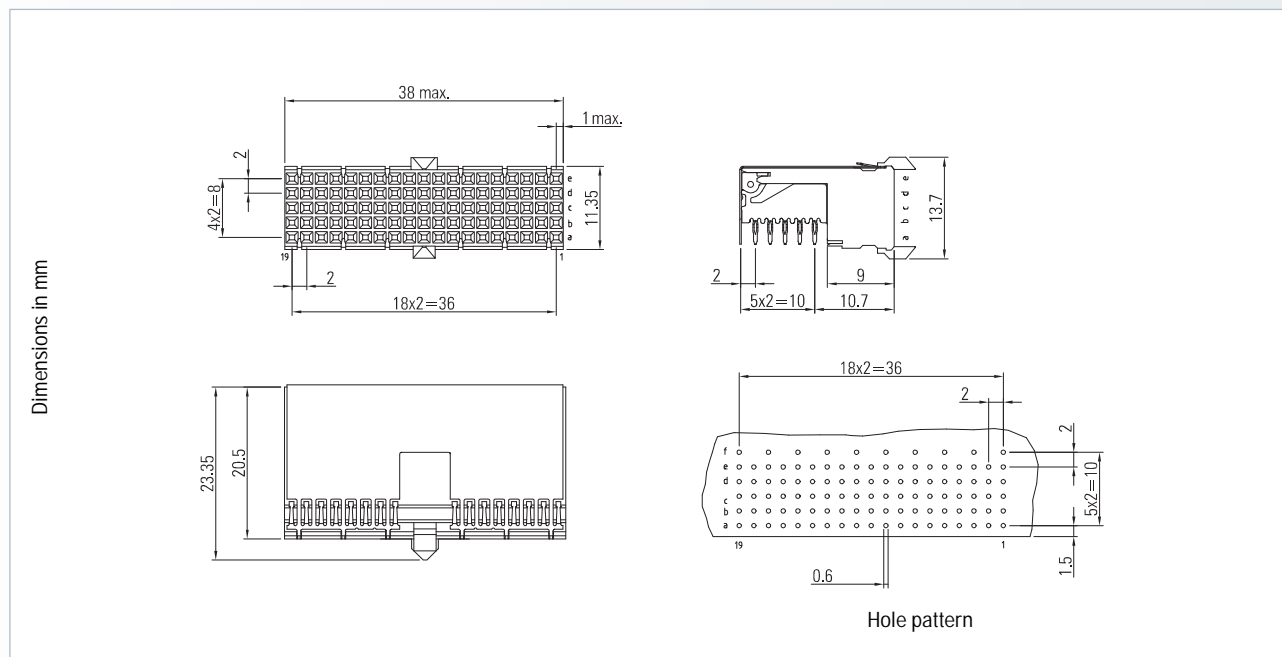
- Press-fit tool (see page 198)
- Support tool (see page 199)
- Shroud (see page 67)

Cross reference

- Pin lengths (see page 34)

Note

- For PCB thickness 1.4 - 2.2 mm use part number 243-63xxx-05



| No. of contacts | Description | Press-fit technology |
|-----------------|-------------------|----------------------|
| | | Performance level II |
| | | Part number |
| 95 | Without shielding | 244-63000-15 |
| 95 | With shielding | 244-63300-15 |



On request

- Performance level I or customer-specific
- Also in THTR

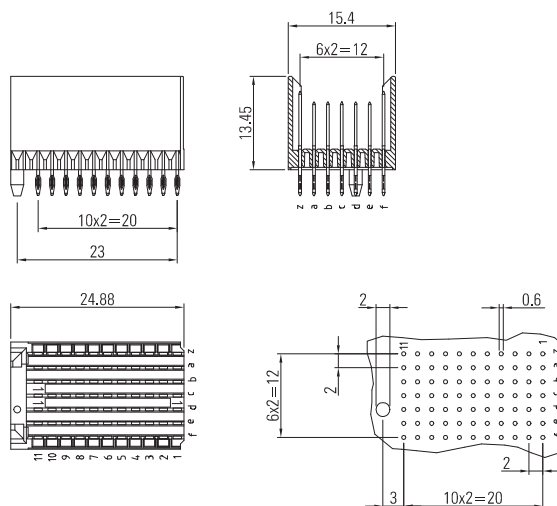
Accessories

- Press-fit tool (see page 202)
- Support tool (see page 203)

Note

- CompactPCI RJ3

Dimensions in mm



Hole pattern

| No. of contacts | Contact arrangement | Press-fit technology – Performance level II | |
|-----------------|---------------------|---|--|
| | | PCB thickness > 2.2 | |
| | | Part number | |
| 55 | | 243-31010-15 | |
| 55 | | 243-31020-15 | |
| 77 | | 243-31310-15 | |
| 77 | | 243-31320-15 | |



On request

- Performance level I or customer-specific
- Contact arrangement (see page 71)

Accessories

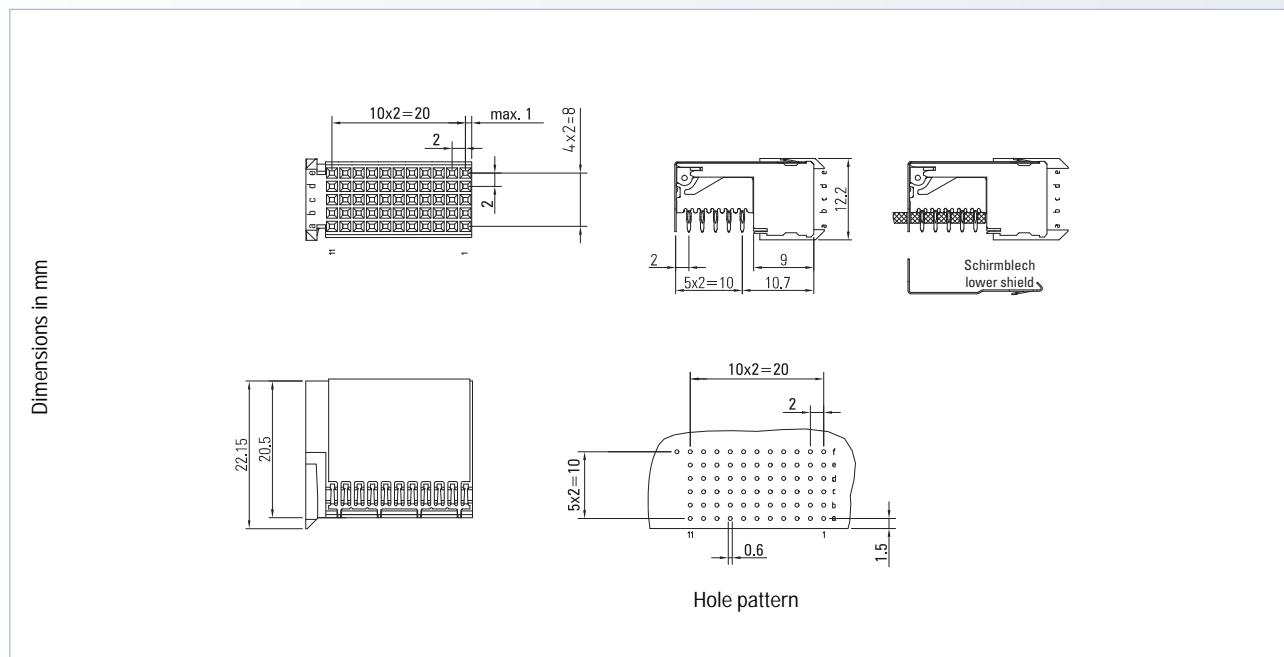
- Press-fit tool (see page 200)
- Support tool (see page 201)
- Shroud (see page 66)

Cross reference

- Pin lengths (see page 34)

Note

- For PCB thickness 1.4 - 2.2 mm use part number 243-31xxx-05



| No. of contacts | Description | Press-fit technology Performance level II |
|-----------------|-------------------|--|
| | | Part number |
| 55 | Without shielding | 244-31000-15 |
| 55 | With shielding | 244-31300-15 |
| — | Lower shield | 244-31600-1 |

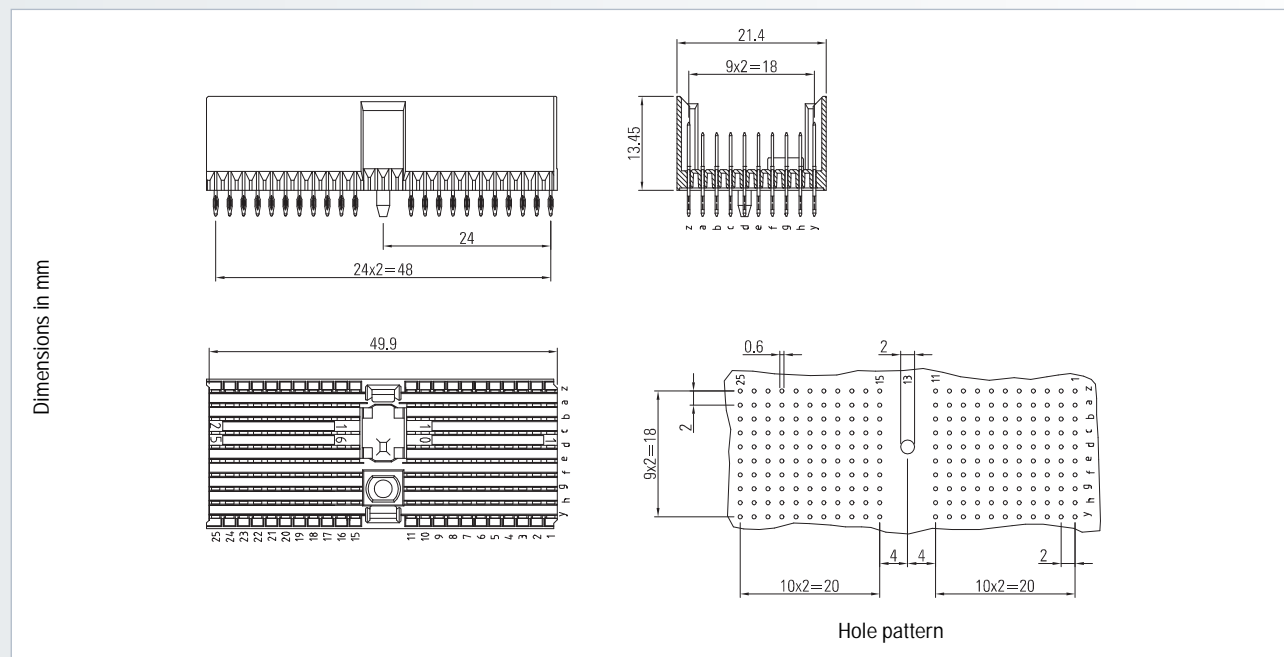


On request

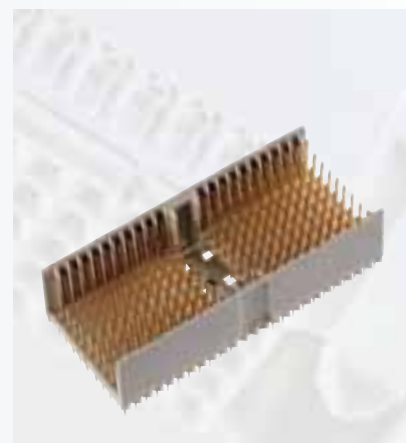
- Performance level I or customer-specific
- Also in THTR

Accessories

- Press-fit tool (see page 202)
- Support tool (see page 203)



| No. of contacts | Contact arrangement | Press-fit technology – Performance level II |
|-----------------|---------------------|---|
| | | PCB thickness > 2.2 |
| | | Part number |
| 176 | | 245-11010-15 |
| 220 | | 245-11310-15 |



On request

- Performance level I or customer-specific
- Contact arrangement (see page 73)

Accessories

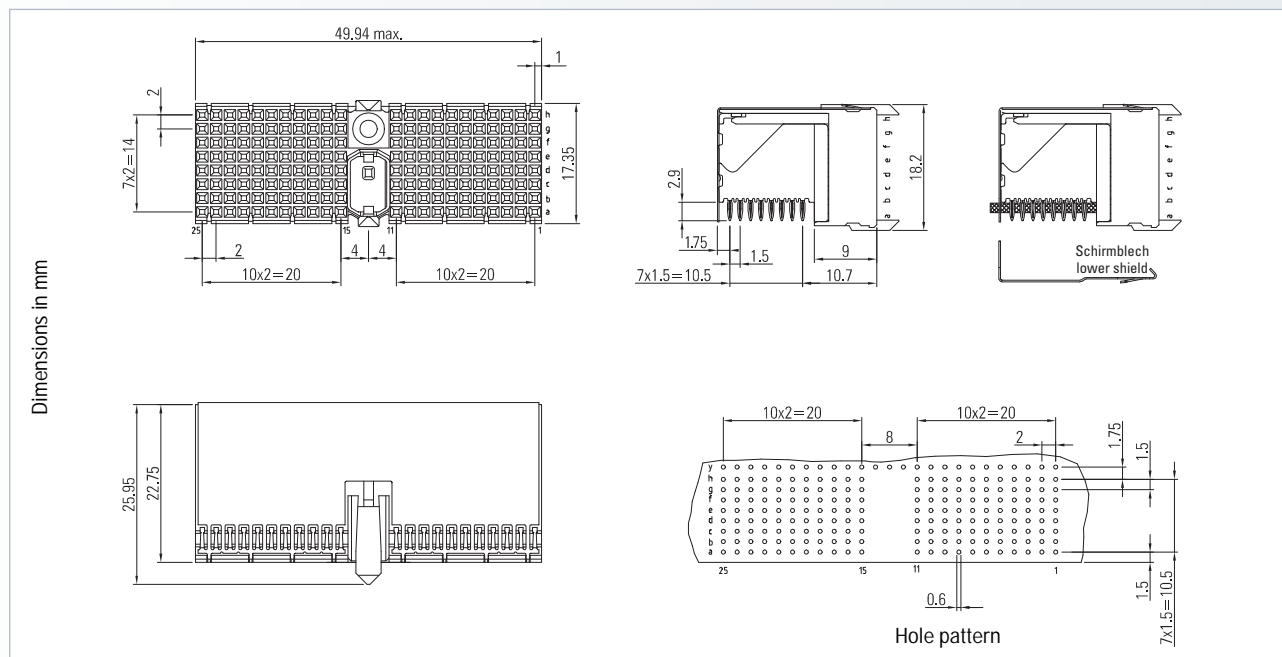
- Press-fit tool (see page 198)
- Support tool (see page 199)
- Coding keys (see page 68)

Cross reference

- Pin lengths (see page 34)

Note

- For PCB thickness 1.4 - 2.2 mm use part number 245-11xxx-05



| No. of contacts | Description | Press-fit technology Performance level II |
|-----------------|-------------------|--|
| | | Part number |
| 176 | Without shielding | 246-11000-15 |
| 176 | With shielding | 246-11300-15 |
| – | Lower shield | 246-11600-1 |



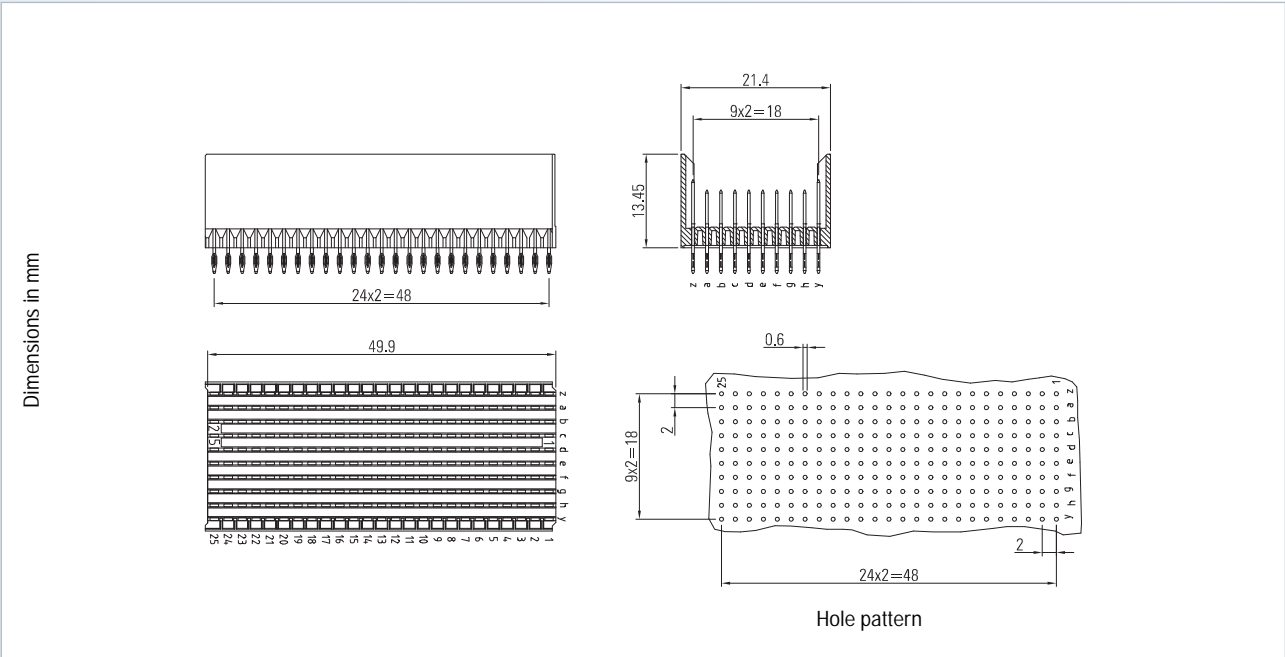
On request

- Performance level I or customer-specific

Accessories

- Press-fit tool (see page 202)
- Support tool (see page 203)
- Coding keys (see page 68)

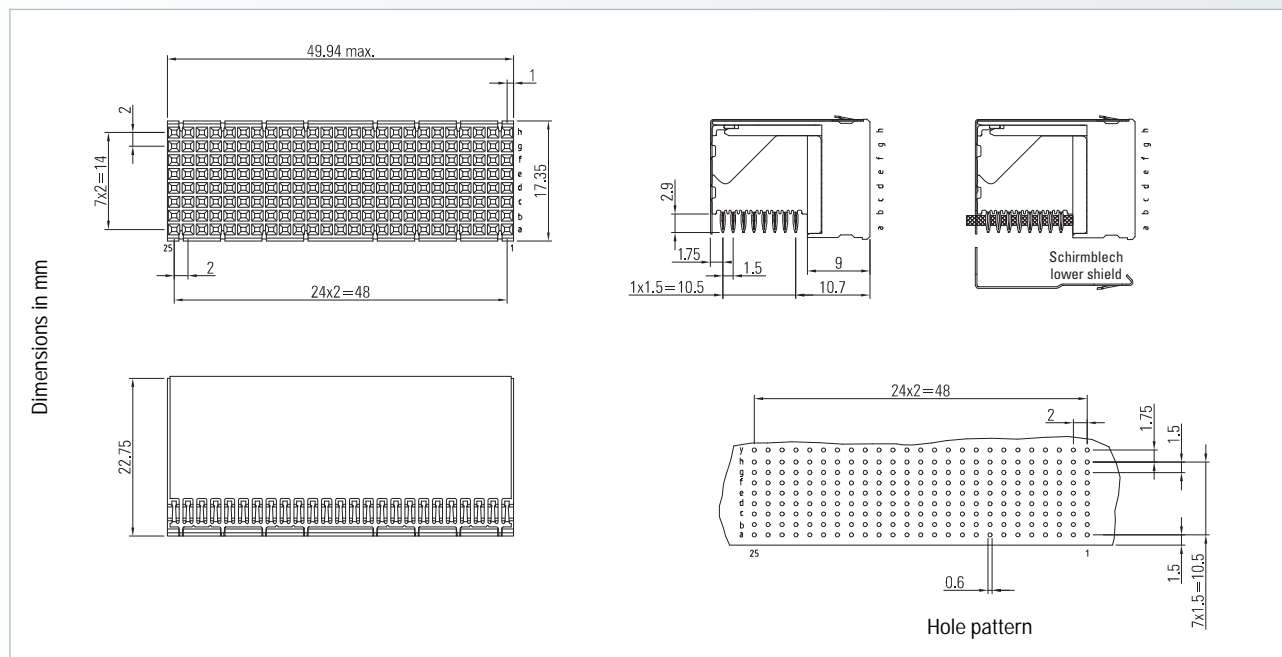
hm connectors
Type E
Male connector



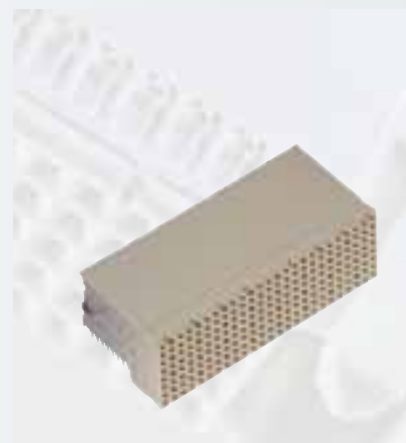
| No. of contacts | Contact arrangement | Press-fit technology – Performance level II |
|-----------------|---------------------|---|
| | | PCB thickness > 2.2 |
| | | Part number |
| 200 | | 245-21010-15 |
| 250 | | 245-21310-15 |



| | |
|--|--|
| On request <ul style="list-style-type: none">– Performance level I or customer-specific– Contact arrangement (see page 73) | Accessories <ul style="list-style-type: none">– Press-fit tool (see page 200)– Support tool (see page 201) |
| Cross reference <ul style="list-style-type: none">– Pin lengths (see page 34) | |
| Note <ul style="list-style-type: none">– For PCB thickness 1.4 - 2.2 mm use part number 245-21xxx-05 | |



| No. of contacts | Description | Press-fit technology |
|-----------------|-------------------|----------------------|
| | | Performance level II |
| | | Part number |
| 200 | Without shielding | 246-21000-15 |
| 200 | With shielding | 246-21300-15 |
| — | Lower shield | 246-21600-1 |



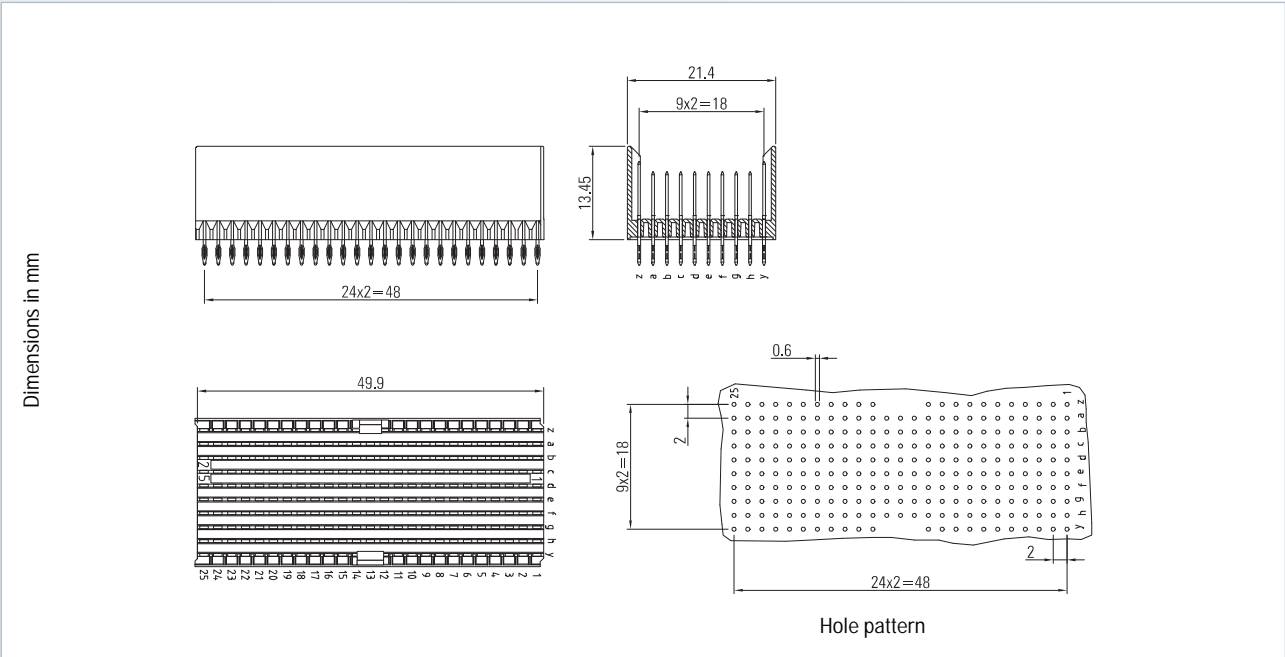
On request

- Performance level I or customer-specific

Accessories

- Press-fit tool (see page 202)
- Support tool (see page 203)

hm connectors
Type DE
Male connector



| No. of contacts | Contact arrangement | Press-fit technology – Performance level II |
|-----------------|---------------------|---|
| | | PCB thickness > 2.2 |
| | | Part number |
| 200 | | 245-61010-15 |
| 244 | | 245-61310-15 |



| | |
|--|--|
| On request <ul style="list-style-type: none">– Performance level I or customer-specific– Contact arrangement (see page 73) | Accessories <ul style="list-style-type: none">– Press-fit tool (see page 198)– Support tool (see page 199) |
| Cross reference <ul style="list-style-type: none">– Pin lengths (see page 34) | |
| Note <ul style="list-style-type: none">– For PCB thickness 1.4 - 2.2 mm use part number 245-61xxx-05 | |



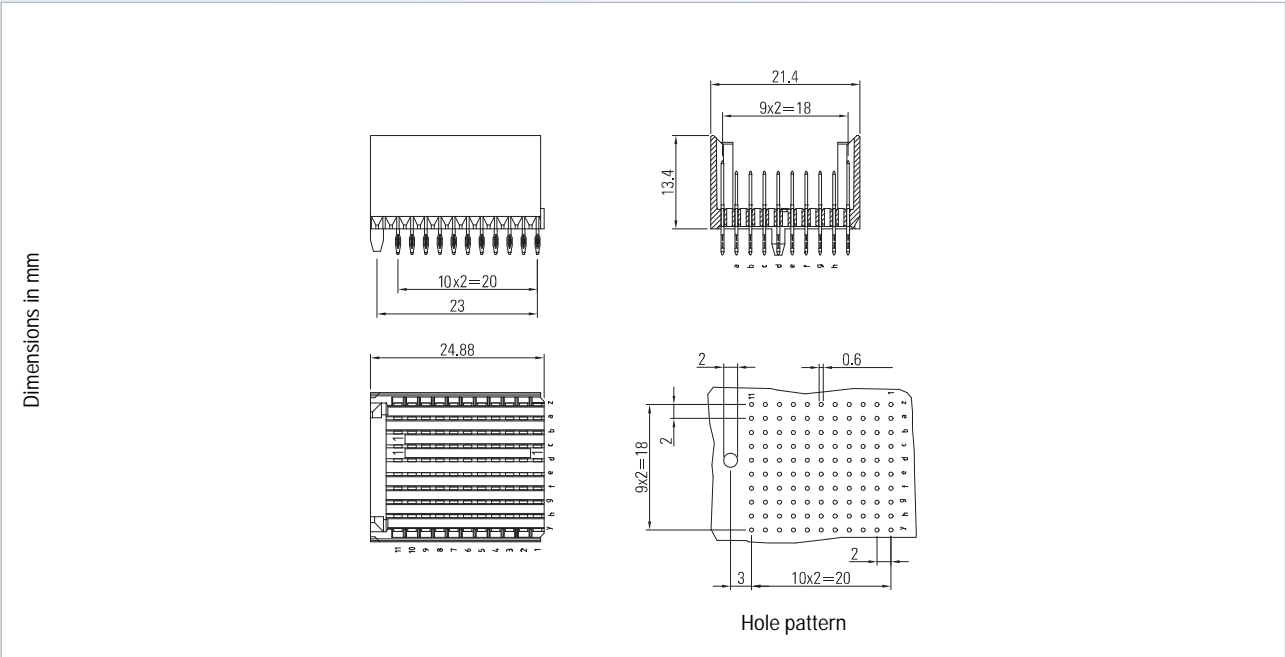
- Performance level I or customer-specific

- Press-fit tool
(see page 202)
- Support tool
(see page 203)

hm connectors

Type F

Male connector



| No. of contacts | Contact arrangement | Press-fit technology – Performance level II | |
|-----------------|---------------------|---|--|
| | | PCB thickness > 2.2 | |
| | | Part number | |
| 88 | | 245-31010-15 | |
| 110 | | 245-31310-15 | |

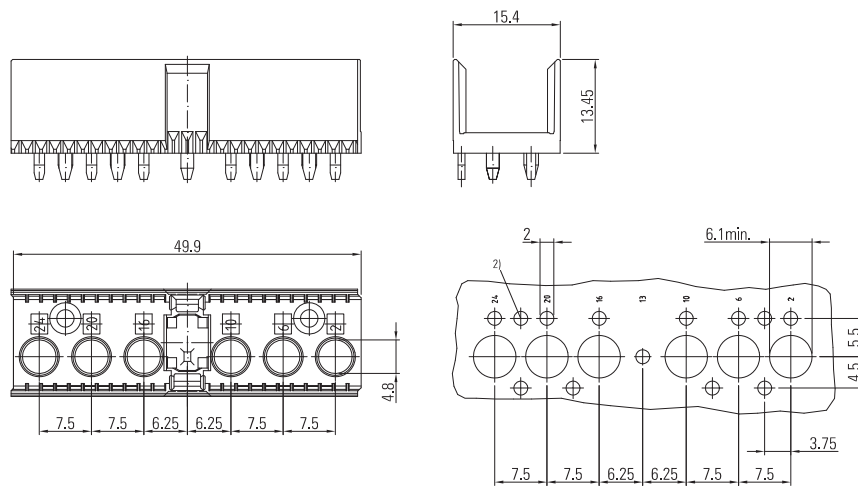


| | |
|--|--|
| On request <ul style="list-style-type: none">– Performance level I or customer-specific– Contact arrangement (see page 73) | Accessories <ul style="list-style-type: none">– Press-fit tool (see page 200)– Support tool (see page 201) |
| Cross reference <ul style="list-style-type: none">– Pin lengths (see page 34) | |
| Note <ul style="list-style-type: none">– For PCB thickness 1.4 - 2.2 mm use part number 245-31xxx-05 | |

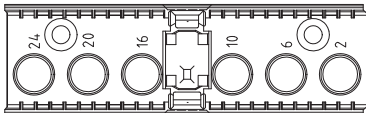


| | |
|--|---|
| On request <ul style="list-style-type: none"> – Performance level I or customer-specific | Accessories <ul style="list-style-type: none"> – Press-fit tool (see page 202) – Support tool (see page 203) |
|--|---|

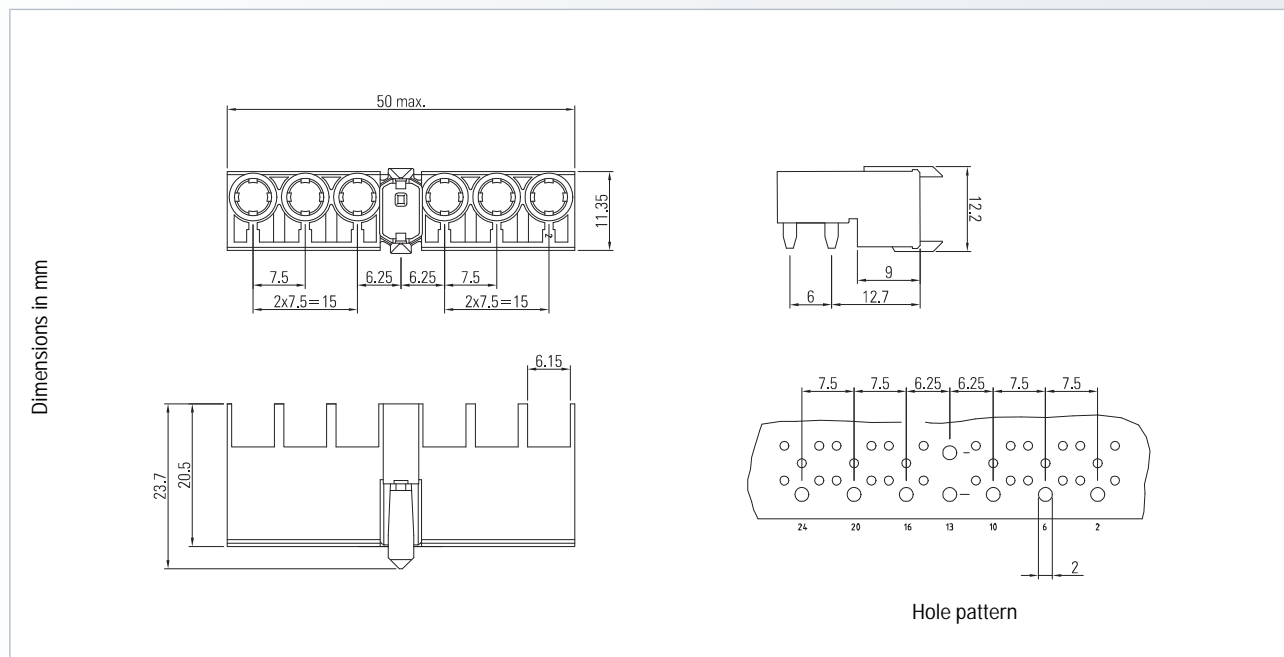
Dimensions in mm



Hole pattern

| No. of contacts | Description | Press-fit technology |
|-----------------|---|----------------------|
| | | Part number |
| 6 |  | 243-51000 |

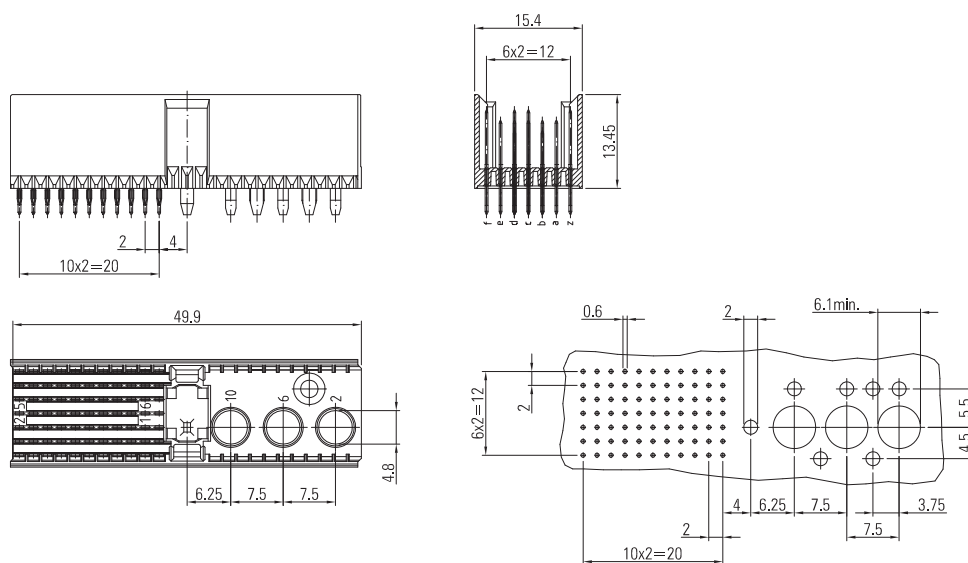




| No. of contacts | Description | Press-fit technology |
|-----------------|-------------------|----------------------|
| | | Part number |
| 6 | Without shielding | 244-51000 |



Dimensions in mm



Hole pattern

| No. of contacts | Contact arrangement | Press-fit technology – Performance level II |
|-----------------|--------------------------|---|
| | | PCB thickness > 2.2 |
| | | Part number |
| 55+3 | <p>Without shielding</p> | 243-41010-15 |
| 77+3 | <p>With shielding</p> | 243-41310-15 |



On request

- Performance level I or customer-specific
- Contact arrangement (see page 71)
- Press-fit tool
- Support tool

Accessories

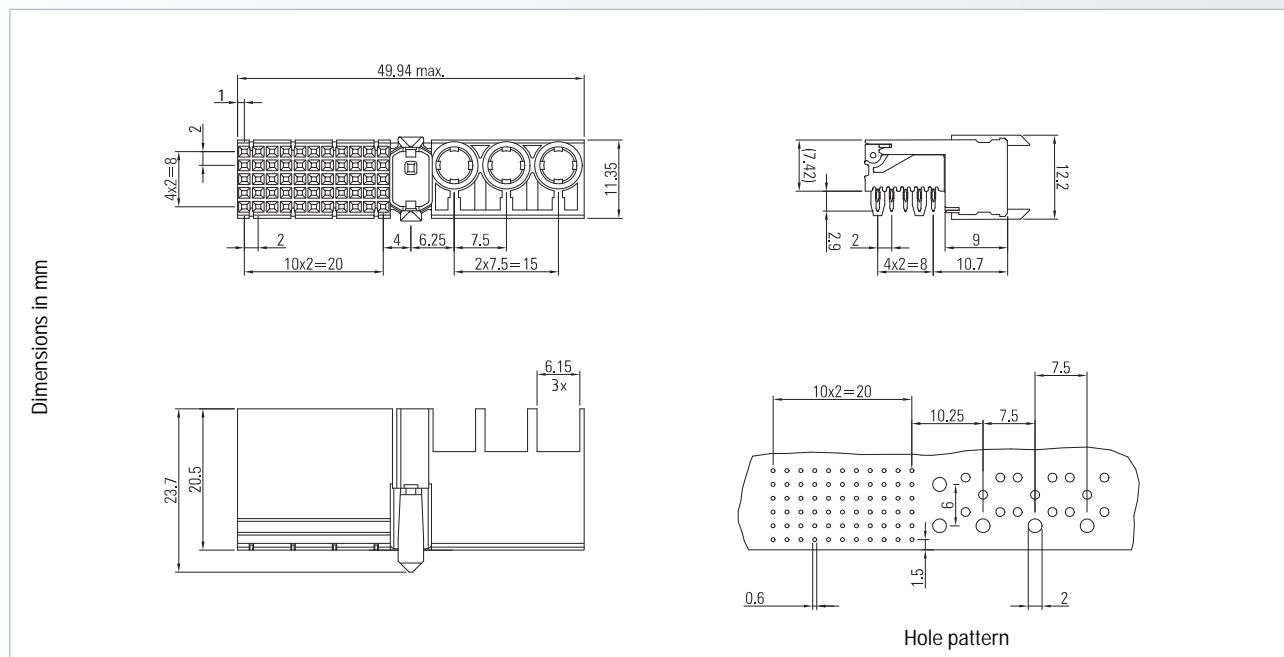
- Coding keys (see page 68)

Cross reference

- Pin lengths (see page 34)

Note

- For PCB thickness 1.4 - 2.2 mm use part number 243-41xxx-05



| No. of contacts | Description | Press-fit technology Performance level II |
|-----------------|-------------------|--|
| | | Part number |
| 55+3 | Without shielding | 244-41000-15 |
| 55+3 | With shielding | 244-41300-15 |
| — | Lower shield | 244-31600-1 |



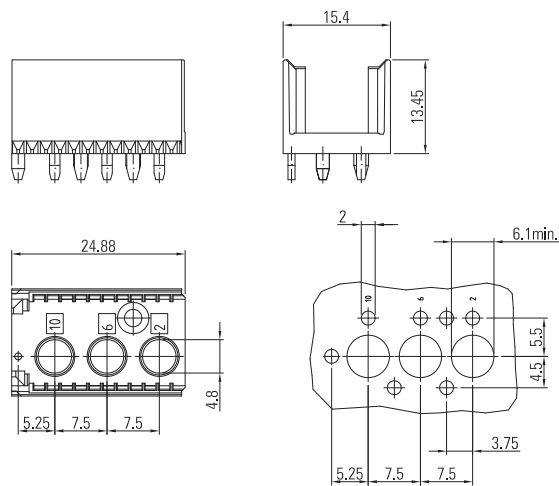
On request

- Performance level I or customer-specific
- Press-fit tool
- Support tool

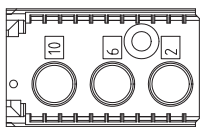
Accessories

- Coding keys (see page 68)

Dimensions in mm

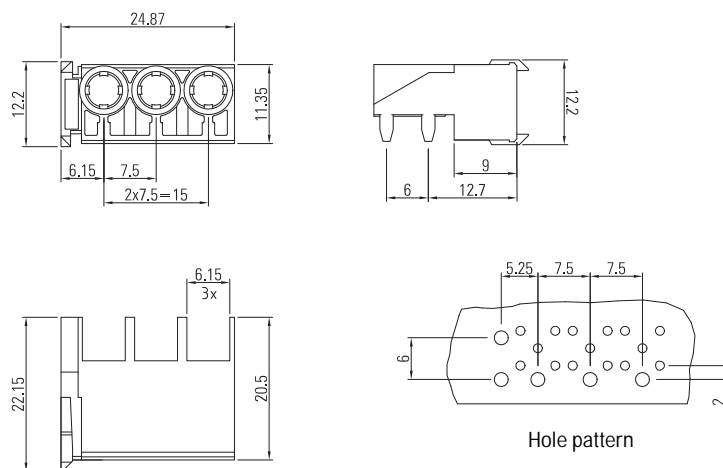


Hole pattern

| No. of contacts | Contact arrangement | Press-fit technology |
|-----------------|--|----------------------|
| | | Part number |
| 3 | <p>Without shielding</p>  | 243-52000 |

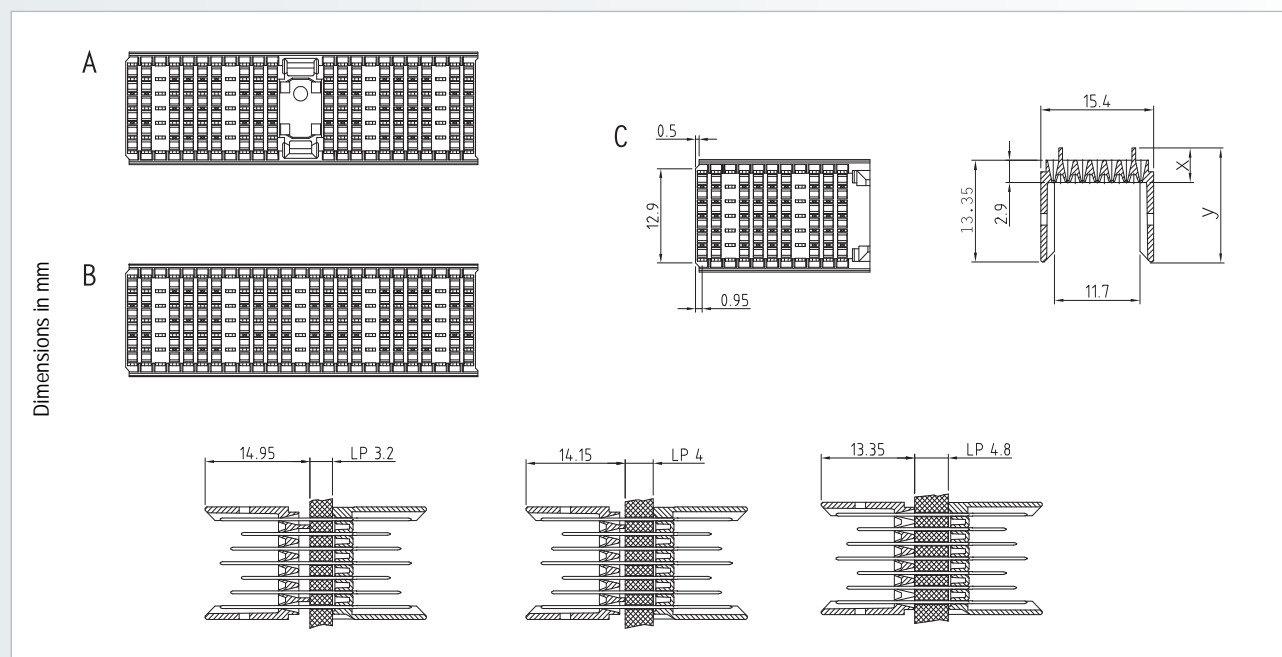


Dimensions in mm

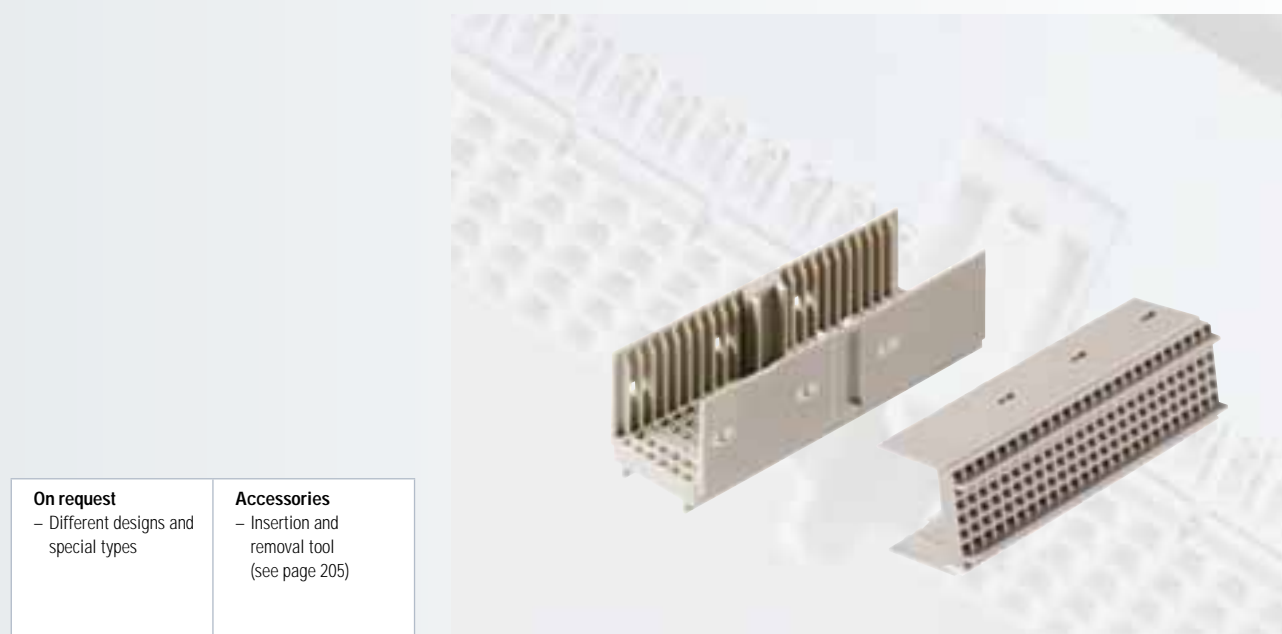


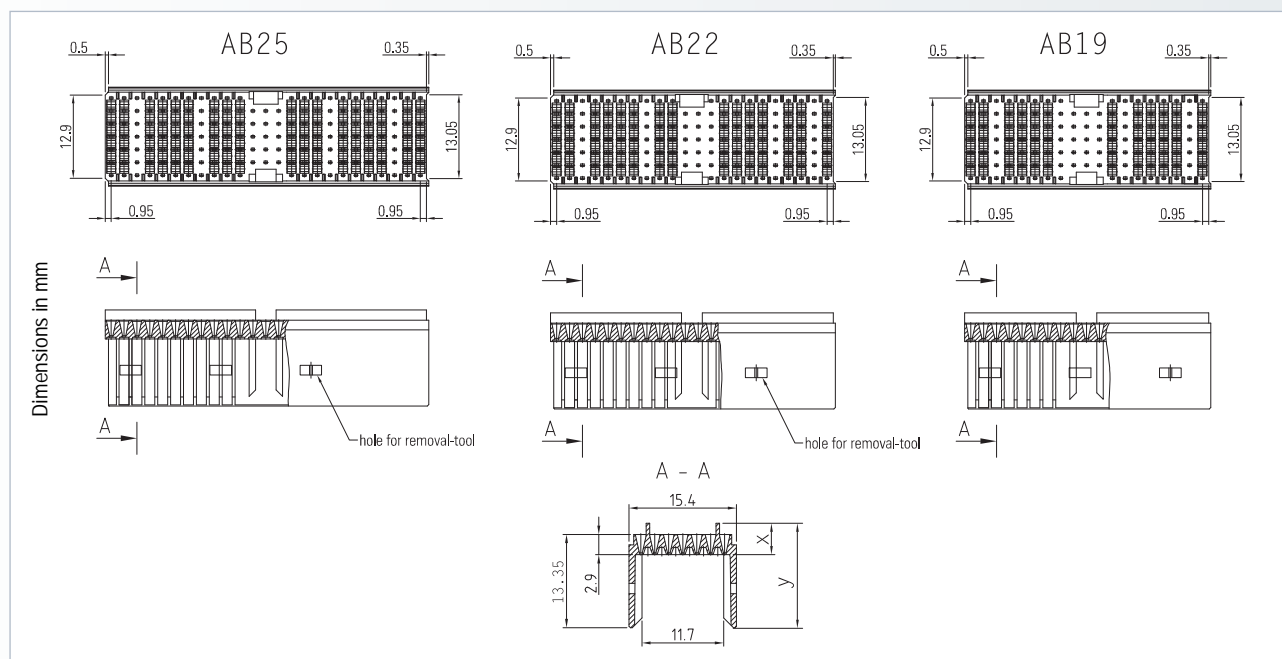
| No. of contacts | Description | Press-fit technology |
|-----------------|-------------------|----------------------|
| | | Part number |
| 3 | Without shielding | 244-52000 |





| | | | Part number | | | | |
|---------------|--------|----------|--------------|--------------|--------------|--------------|--------------|
| PCB thickness | X | Y | A | B | B22 | B19 | C |
| < 2.4 mm | 6.3 mm | 16.75 mm | 243-5525-5/1 | 243-5625-5/1 | 243-5622-5/1 | 243-5619-5/1 | 243-5511-5/1 |
| 2.4 – 3.2 mm | 4.9 mm | 15.35 mm | 243-5525-4/1 | 243-5625-4/1 | 243-5622-4/1 | 243-5619-4/1 | 243-5511-4/1 |
| 3.2 – 4.0 mm | 4.5 mm | 14.95 mm | 243-5525-1/1 | 243-5625-1/1 | 243-5622-1/1 | 243-5619-1/1 | 243-5511-1/1 |
| 4.0 – 4.8 mm | 3.7 mm | 14.15 mm | 243-5525-2/1 | 243-5625-2/1 | 243-5622-2/1 | 243-5619-2/1 | 243-5511-2/1 |
| > 4.8 mm | 2.9 mm | 13.35 mm | 243-5525-3/1 | 243-5625-3/1 | 243-5622-3/1 | 243-5619-3/1 | 243-5511-3/1 |

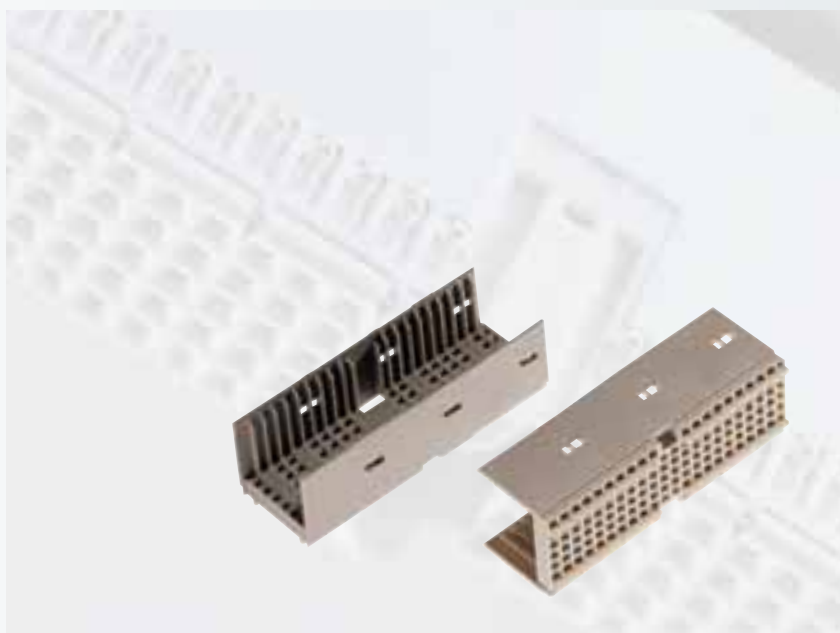




| | | | Part number | | |
|---------------|--------|----------|--------------|------------------|------------------|
| PCB thickness | X | Y | AB25 | AB22 (cPCI RP 5) | AB19 (cPCI RP 3) |
| < 2.4 mm | 6.3 mm | 16.75 mm | 243-5725-5/1 | 243-5722-5/1 | 243-5719-5/1 |
| 2.4 – 3.2 mm | 4.9 mm | 15.35 mm | 243-5725-4/1 | 243-5722-4/1 | 243-5719-4/1 |
| 3.2 – 4.0 mm | 4.5 mm | 14.95 mm | 243-5725-1/1 | 243-5722-1/1 | 243-5719-1/1 |
| 4.0 – 4.8 mm | 3.7 mm | 14.15 mm | 243-5725-2/1 | 243-5722-2/1 | 243-5719-2/1 |
| > 4.8 mm | 2.9 mm | 13.35 mm | 243-5725-3/1 | 243-5722-3/1 | 243-5719-3/1 |

On request
– Different designs and special types

Accessories
– Insertion and removal tool (see page 205)



Coding keys

| Male connector | | | |
|---|----------|---|-------------|
| Coding key | Code No. | Color | Part number |
|  | 1236 | Nut brown RAL 8011 | 243-8011 |
|  | 1248 | Strawberry red RAL 3018 Telephony Spec | 243-8012 |
|  | 1356 | Blue lilac RAL 4005 | 243-8013 |
|  | 1567 | Brilliant blue RAL 5007 5.0 V cPCI | 243-8014 |
|  | 2578 | Reseda green RAL 6011 | 243-8021 |
|  | 3456 | Cadmium yellow RAL 1021 3.3 V cPCI | 243-8031 |
|  | 3467 | Slate gray RAL 7015 | 243-8032 |
|  | 3478 | Steel blue RAL 5011 | 243-8033 |
|  | 3568 | Pastel orange RAL 2003 | 243-8034 |
|  | 4678 | Ocher yellow RAL 1024 | 243-8041 |

| Female connector | | | |
|---|----------|---|-------------|
| Coding key | Code No. | Color | Part number |
|  | 4578 | Nut brown RAL 8011 | 244-8011 |
|  | 3567 | Strawberry red RAL 3018 Telephony Spec | 244-8012 |
|  | 2478 | Blue lilac RAL 4005 | 244-8013 |
|  | 2348 | Brilliant blue RAL 5007 5.0 V cPCI | 244-8014 |
|  | 1346 | Reseda green RAL 6011 | 244-8021 |
|  | 1278 | Cadmium yellow RAL 1021 3.3 V cPCI | 244-8031 |
|  | 1258 | Slate gray RAL 7015 | 244-8032 |
|  | 1256 | Steel blue RAL 5011 | 244-8033 |
|  | 1247 | Pastel orange RAL 2003 | 244-8034 |
|  | 1235 | Ocher yellow RAL 1024 | 244-8041 |

Overview of CompactPCI connectors

| Female connectors for daughter card | Location | Shielding | Part number |
|-------------------------------------|---------------|-----------|--------------|
| Type A | J1/rJ1/J4/rJ4 | top | 244-11300-15 |
| Type B22 | J2/J5 | top | 244-22300-15 |
| Type AB22* | rJ2/rJ5 | top | 244-62300-15 |
| Type B19 | J3 | top | 244-23300-15 |
| Type AB19* | rJ3 | top | 244-63300-15 |
| Type A for telephony | J4 | divided | 244-11305-15 |
| Type A for telephony (mirrored) | rJ4 | divided | 244-11306-15 |

* For rear transition card applications the AB connectors are used with AB shroud. All connectors are also available without shield.

| Male connectors for backplanes | Position | Contact arrangement * | Part number |
|--|----------|-----------------------|---------------|
| Type A Hot Swap | P1 | CB***BC | 243-11322-15 |
| Type A Hot Swap for Midplane | P1 | TP***PT | 243-11710-15F |
| Type B22 | P2 | CBBBBBC | 243-22320-15 |
| Type B22 AB compatible | P2/P5 | *PPPPP* | 243-22361-15F |
| Type B22 AB compatible | P2/P5 | *NNNNN* | 243-22734-15F |
| Type B22 AB compatible | P2/P5 | *SSSSS* | 243-22371-15F |
| Type B19 | P3 | CBBBBBC | 243-23320-15 |
| Type B19 AB compatible | P3 | *PPPPP* | 243-23361-15F |
| Type B19 AB compatible | P3 | *NNNNN* | 243-23716-15F |
| Type B19 AB compatible | P3 | *SSSSS* | 243-23371-15F |
| Type A for telephony | P4 | —***** | 243-11323-15 |
| Type A for telephony Midplane | P4 | —***** | 243-11709-15F |
| Type A | P4 | TPPPPPT | 243-11360-15F |
| Type A | P4 | TNNNNNT | 243-11734-15F |
| Type A | P4 | TSSSSST | 243-11715-15F |
| Type B22 for telephony | P5 | C*****C | 243-22311-15 |
| Type B22 for telephony, row Z not loaded | P5 | —*****C | 243-22312-15 |
| Type B22 for telephony, row Z not loaded | P5 | —***** | 243-22351-15F |

* Different pin lengths in this row/— not loaded.

All connectors are also available with row Z unloaded/for other contact arrangements, please contact ept.

Overview of CompactPCI connectors

| Coding keys | Color | Application | Part number |
|--------------------------------|----------------|----------------|-------------|
| Male connector backplane | Brilliant blue | 5 V – P1 | 243-8014 |
| Male connector backplane | Cadmium yellow | 3.3 V – P1 | 243-8031 |
| Male connector backplane | Strawberry red | Telephony – P4 | 243-8012 |
| Female connector daughter card | Brilliant blue | 5 V – J1 | 244-8014 |
| Female connector daughter card | Cadmium yellow | 3.3 V – J1 | 244-8031 |
| Female connector daughter card | Strawberry red | Telephony – J4 | 244-8012 |

| Shroud | Position | Height | Base height | PCB thickness | Part number |
|-----------|----------|----------|-------------|---------------|-------------|
| Type A | P1/P4 | 16.75 mm | 6.3 mm | < 2.4 mm | 243-5525-5 |
| Type A | P1/P4 | 15.35 mm | 4.9 mm | 2.4 – 3.2 mm | 243-5525-4 |
| Type A | P1/P4 | 14.95 mm | 4.5 mm | 3.2 – 4.0 mm | 243-5525-1 |
| Type A | P1/P4 | 14.15 mm | 3.7 mm | 4.0 – 4.8 mm | 243-5525-2 |
| Type A | P1/P4 | 13.35 mm | 2.9 mm | > 4.8 mm | 243-5525-3 |
| Type AB22 | P2/P5 | 16.75 mm | 6.3 mm | < 2.4 mm | 243-5722-5 |
| Type AB22 | P2/P5 | 15.35 mm | 4.9 mm | 2.4 – 3.2 mm | 243-5722-4 |
| Type AB22 | P2/P5 | 14.95 mm | 4.5 mm | 3.2 – 4.0 mm | 243-5722-1 |
| Type AB22 | P2/P5 | 14.15 mm | 3.7 mm | 4.0 – 4.8 mm | 243-5722-2 |
| Type AB22 | P2/P5 | 13.35 mm | 2.9 mm | > 4.8 mm | 243-5722-3 |
| Type AB19 | P3 | 16.75 mm | 6.3 mm | < 2.4 mm | 243-5719-5 |
| Type AB19 | P3 | 15.35 mm | 4.9 mm | 2.4 – 3.2 mm | 243-5719-4 |
| Type AB19 | P3 | 14.95 mm | 4.5 mm | 3.2 – 4.0 mm | 243-5719-1 |
| Type AB19 | P3 | 14.15 mm | 3.7 mm | 4.0 – 4.8 mm | 243-5719-2 |
| Type AB19 | P3 | 13.35 mm | 2.9 mm | > 4.8 mm | 243-5719-3 |

The height/bottom thickness of the shroud depends on the thickness of the backplane.

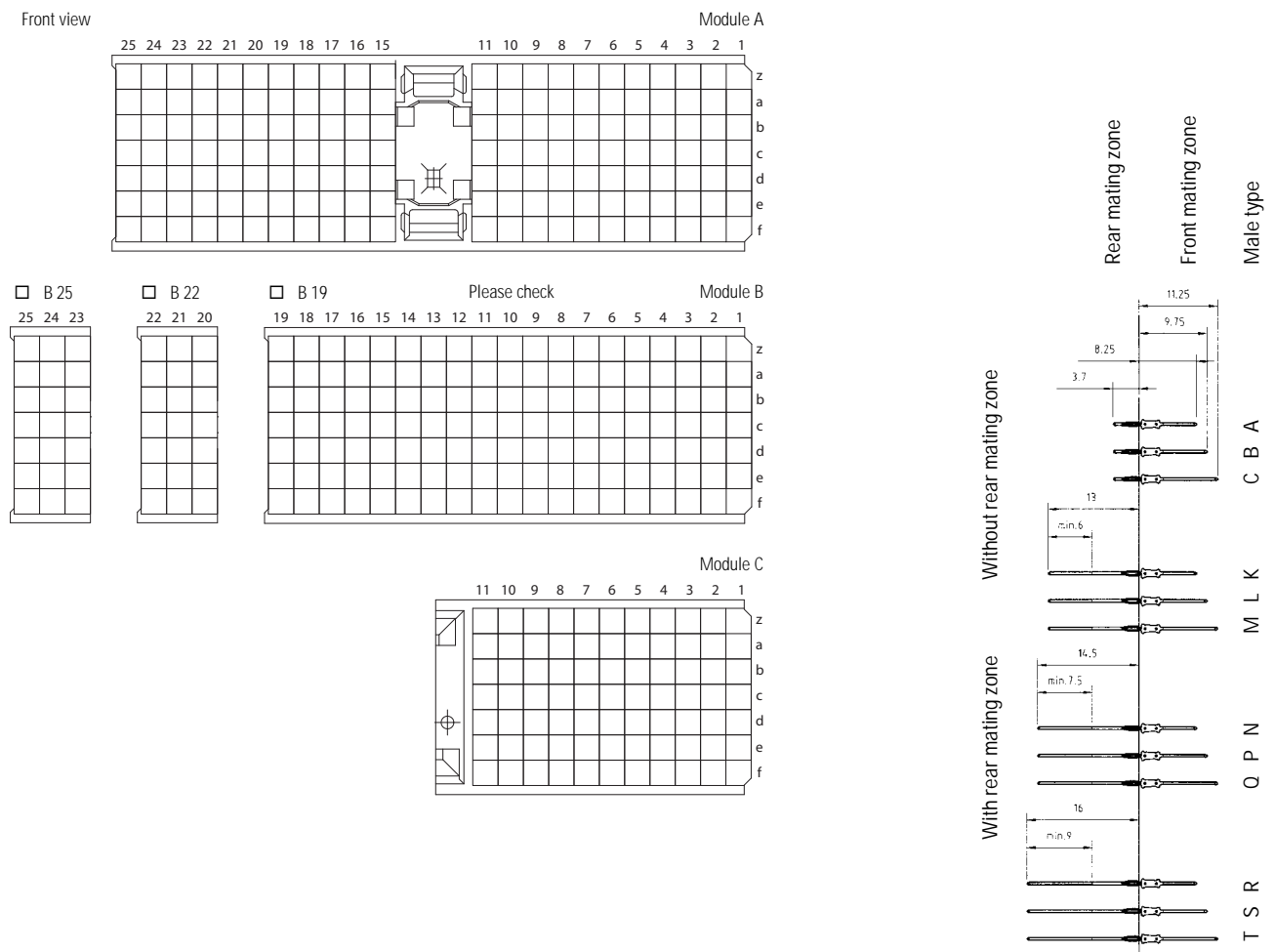
Fax request (5+2)

| | | |
|------------|------|-------|
| Company | | Phone |
| First name | Name | Fax |
| Address | | |
| Signature | | |

Estimated quantity required:

Number of required samples:

Front view



Assembly reference:

In order to achieve cost-effective assembly of the connectors, we recommend that the termination lengths are specified for each row. If only position 1 of a row is specified, the complete row will be equipped with this termination length. Exceptions can be entered at the respective position.

Surface:

Performance level II according to IEC 61076-4-101.

Fax request AB

| | | |
|------------|------|-------|
| Company | | Phone |
| First name | Name | Fax |
| Address | | |
| Signature | | |

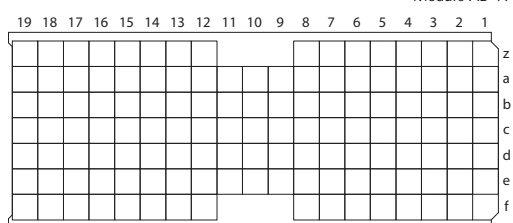
Estimated quantity required:

Number of required samples:

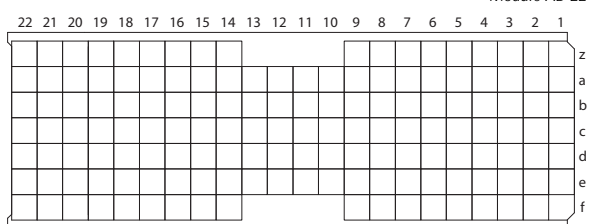
| |
|--|
| |
| |

Front view

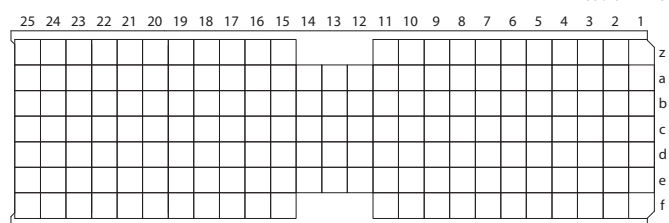
Module AB-19



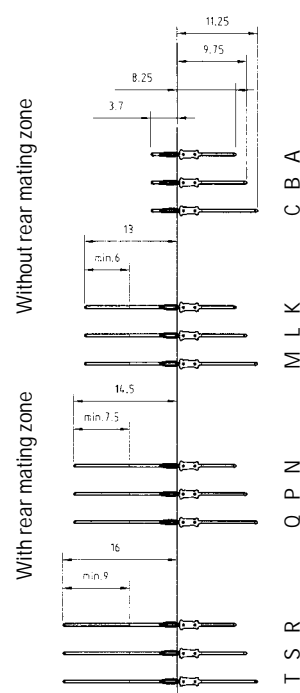
Module AB-22



Module AB-25



Rear mating zone
Front mating zone
Male type



Assembly reference:

In order to achieve cost-effective assembly of the connectors, we recommend that the termination lengths are specified for each row. If only position 1 of a row is specified, the complete row will be equipped with this termination length. Exceptions can be entered at the respective position.

Surface:

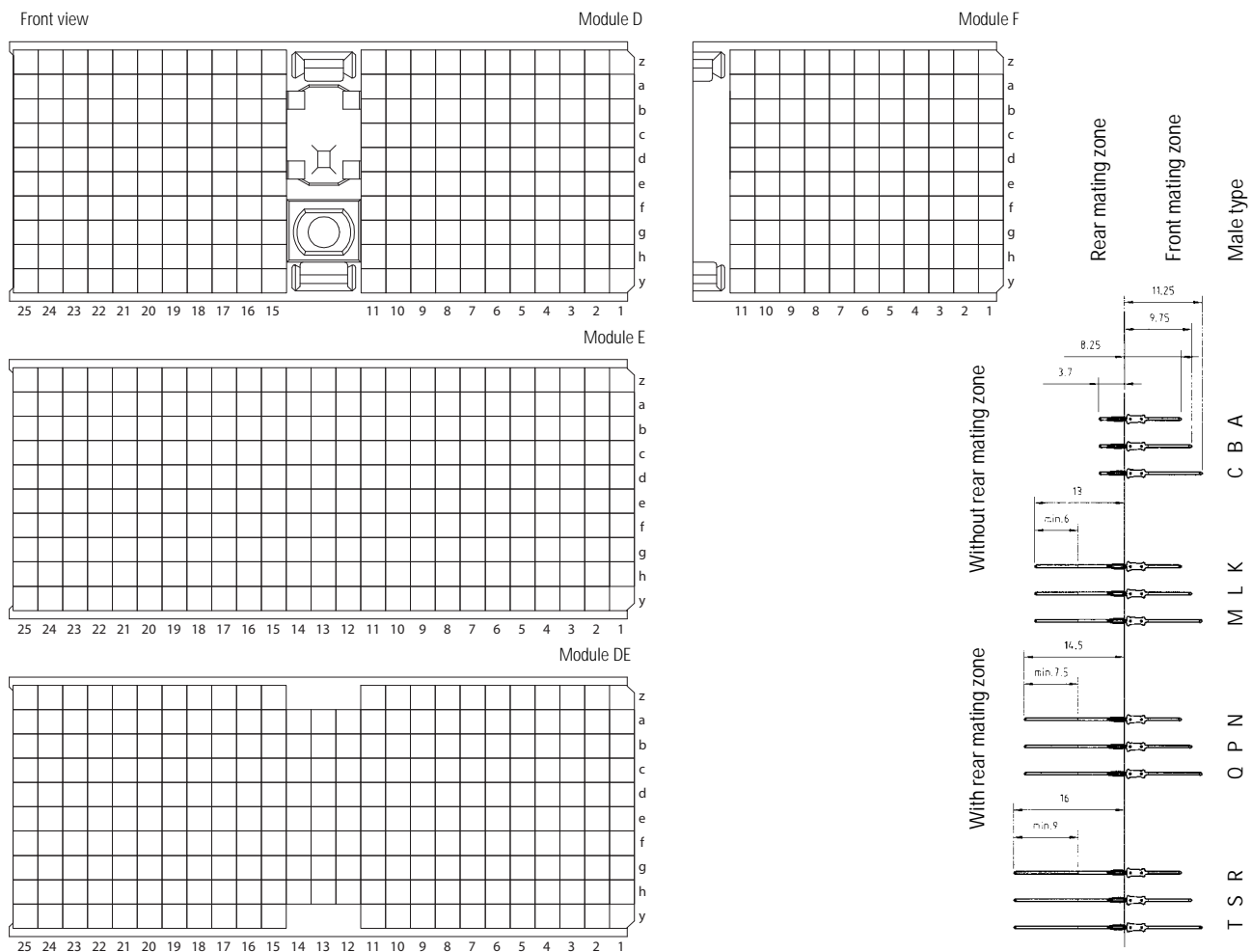
Performance level II according to IEC 61076-4-101.

Fax request (8+2)

| | | |
|------------|------|-------|
| Company | | Phone |
| First name | Name | Fax |
| Address | | |
| Signature | | |

Estimated quantity required:

Number of required samples:



Assembly reference:

In order to achieve cost-effective assembly of the connectors, we recommend that the termination lengths are specified for each row. If only position 1 of a row is specified, the complete row will be equipped with this termination length. Exceptions can be entered at the respective position.

Surface:

Performance level II according to IEC 61076-4-101.



