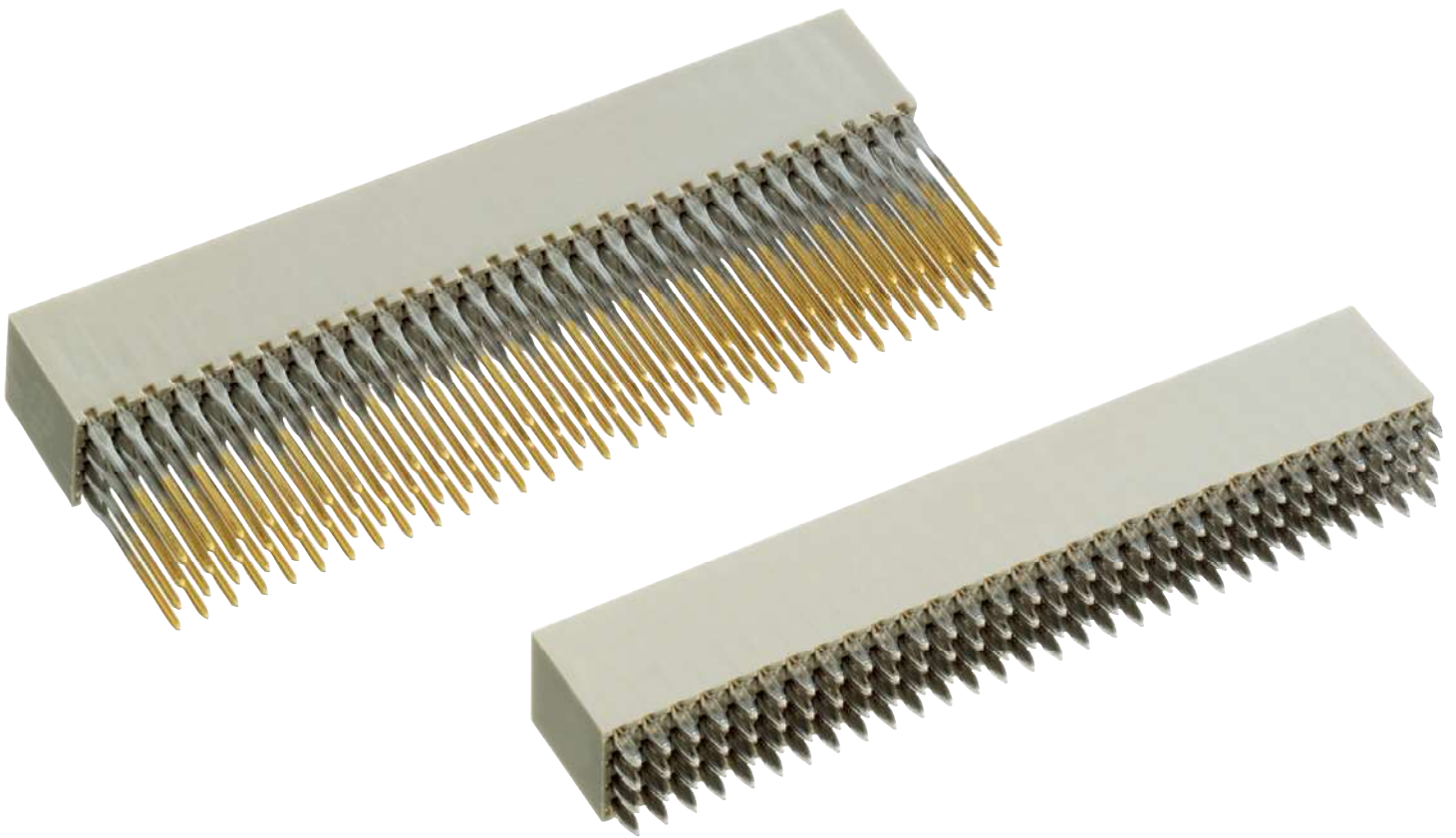


• • • ept  
*connectors*



**PC/104, PC/104-Plus**

Highest Quality for Established Form Factor

Introduction	3
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### PC/104, PC/104-Plus

#### Highest Quality for Established Form Factor

PC/104 and PC/104-Plus is a standard for PC-compatible modules which are intermateable to set up a complete computing system. The PC/104 and PC/104-Plus ensures complete hardware and software compatibility, is extremely compact (96 mm x 90 mm), and comes with a standardized PC/104 Bus (ISA). Due to this standardization, different PC/104 cards can be combined to implement a defined task.

Based on PC/104, many different boards are offered such as:

- complete single-board computers
- I/O boards for digital or analog I/O
- boards for CAN, Profibus, LON, Ethernet
- PCMCIA boards

#### Key Features:

- ept's proven press-fit technology Tcom press®
- PC/104-Plus available for 22 mm Board-to-Board distance
- shrouds as accessory available
- individual performance level and contact number possible

#### Applications:

- PC/104
- PC/104-Plus
- Board-to-Board for PCB distance 15.24 mm and 22 mm



#### Termination



Press-fit

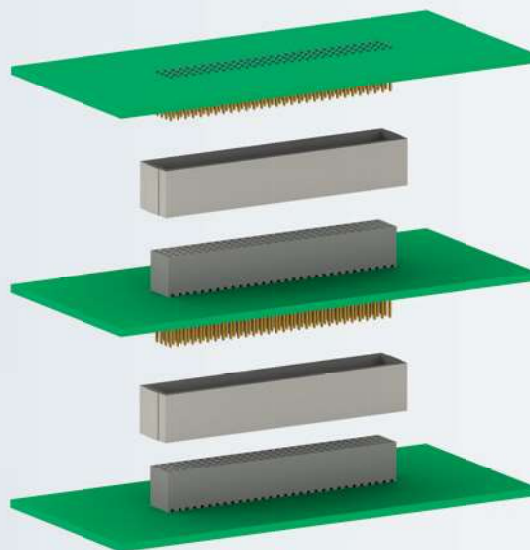


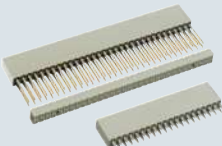
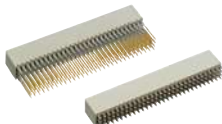
Solder

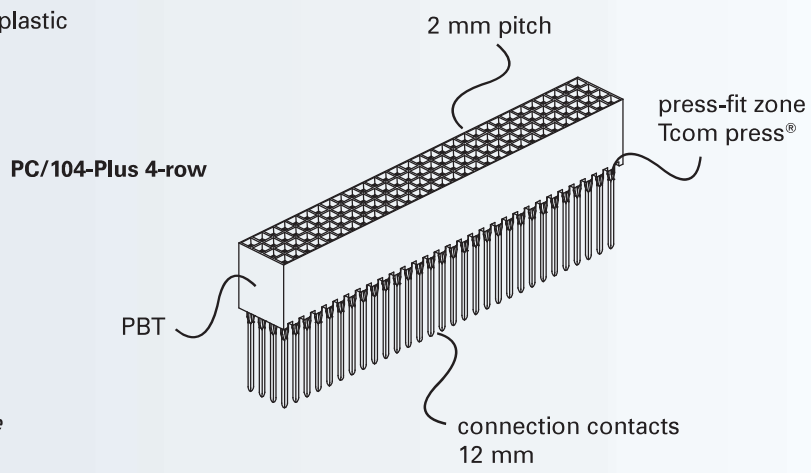
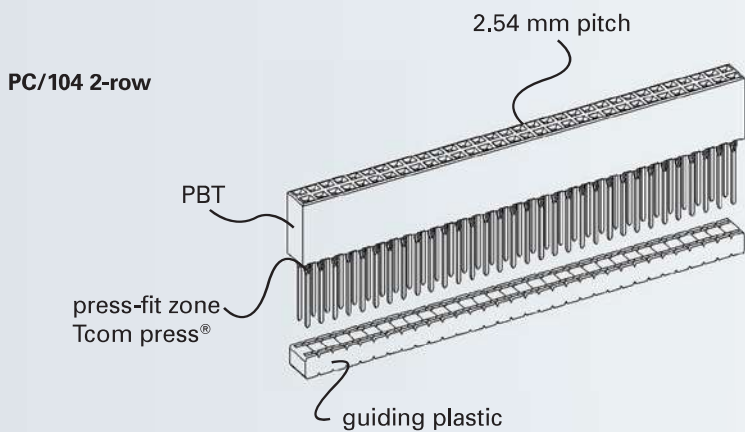
#### Mating Configuration



Parallel



	Type	Pitch (mm)	Number of contacts	Termination	Mating connector	Page reference
<b>PC/104</b>		2.54	40 / 64	Press-fit, solder	PC/104 Female connector	p. 9
<b>PC/104-Plus</b>		2	120	Press-fit, solder	PC/104-Plus Female connector	p. 11
		2	120	Press-fit	PC/104-Plus Female connector	p. 12
		2	60	Press-fit	PC/104-Plus Female connector	p. 13



available with or without transfer zone



### PC/104 and PC/104-Plus

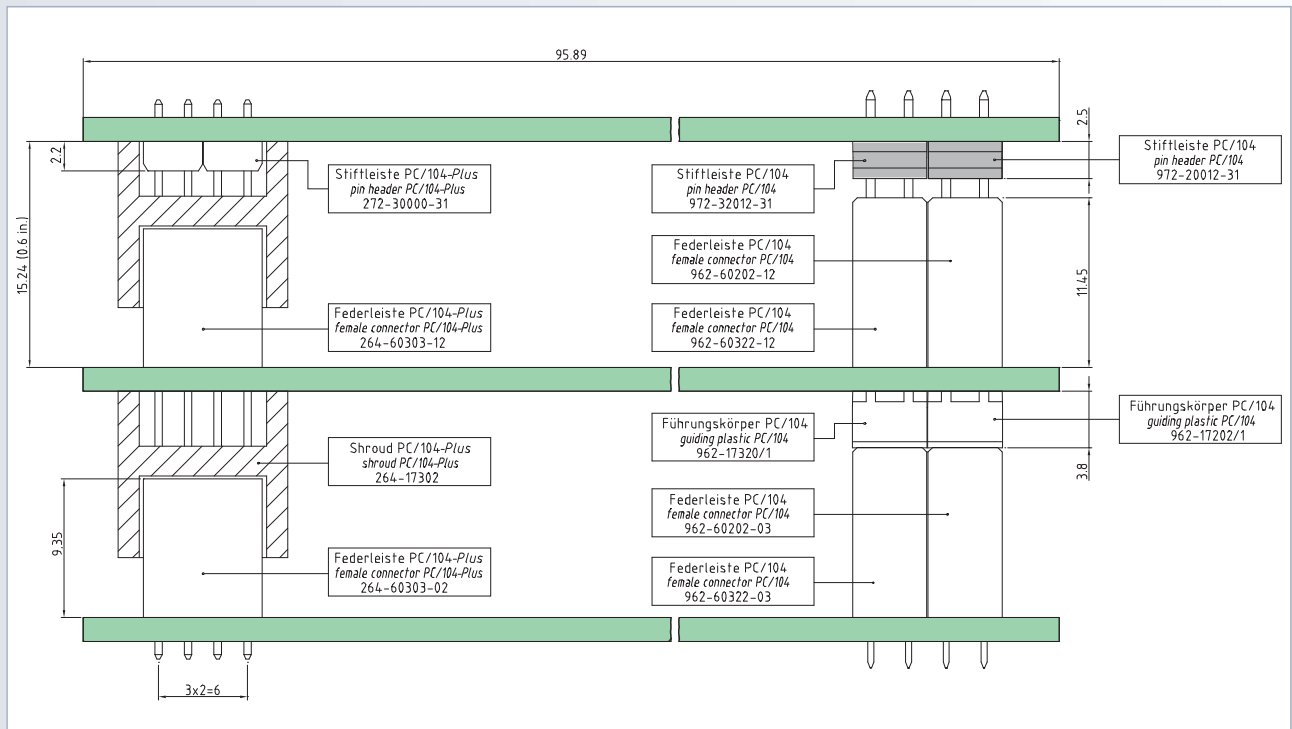
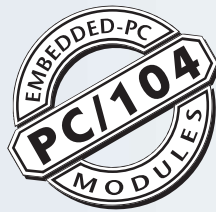
Since more powerful components are available, the PC/104 systems had to be supplemented with a faster bus system. The PC/104 system was supplemented with the PCI bus and thus it was further developed. This supplement is described in the PC/104-Plus specification.

#### PC/104 and PC/104-Plus Connector

While the PC/104 bus comprises two connectors with 40 and 64 pins which can be placed side-by-side and a grid size of 2.54 mm, the PC/104-Plus features 120 pins with a distance of 2.00 mm.

By using connectors with long pins in press-fit technology, several boards can be stacked on top of each other (see

figure). The clearances specified by the PC/104 consortium are ensured by using spacers and shrouds. The additional use of spacing bolts is therefore not required.



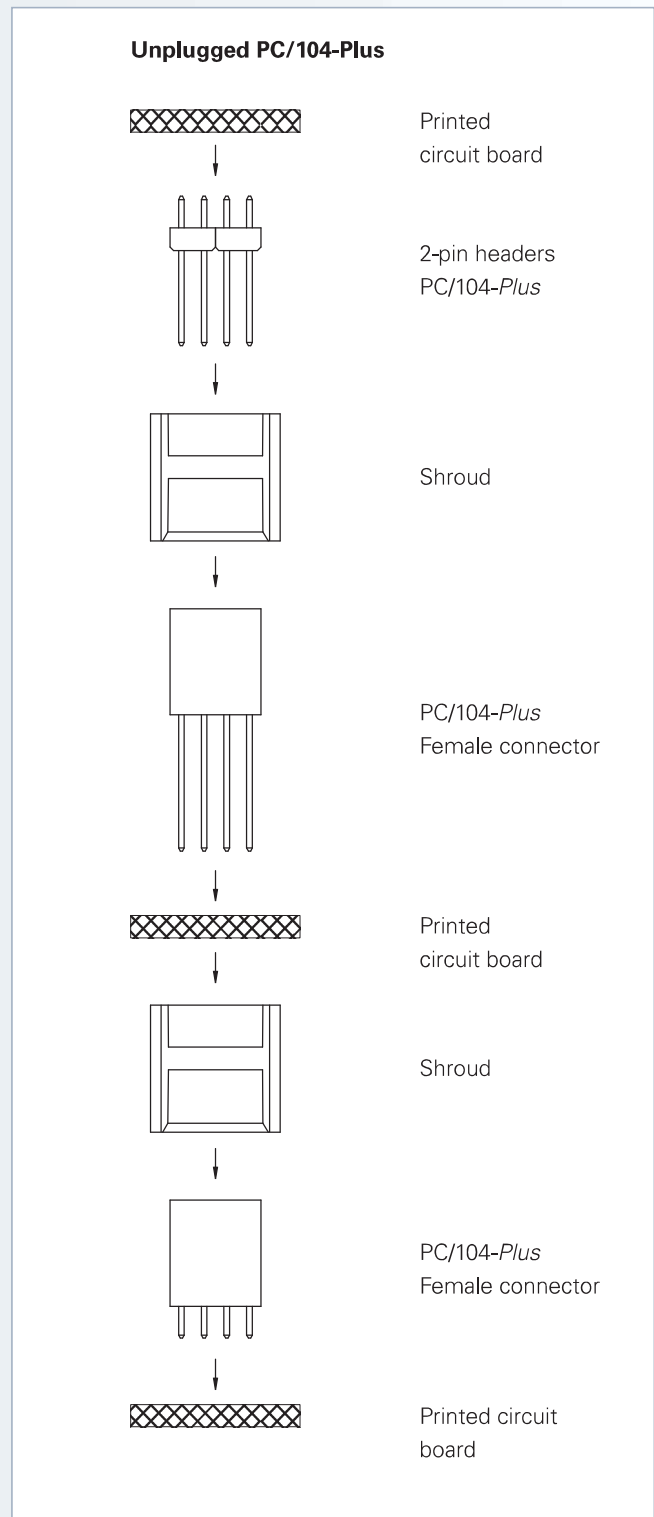
PC/104 and PC/104-Plus press-fit connectors from ept offer various advantages:

- The female connectors are pressed in by means of a simple flat rock press-fit tool
- No additional costs due to complex manual soldering
- No reworking at the rear mating zone (solder bridges, solder splashes)
- Less inspection overhead
- Lower engaging and separating forces; therefore bending of the rear mating zone is prevented
- When female connectors with rear mating zone are pressed in, a guiding block is pushed up from below. This offers the following advantages:
  - No bending of the rear mating zone
  - Serves as spacer so that the clearance of 0.6" is achieved when the modules are plugged in
  - Serves as support tool when pressing in and prevents that the strip lines between the through connections are damaged.

The shroud is reliably fixed on the PCB by additional press in of the shroud housing onto the rear mating zone.

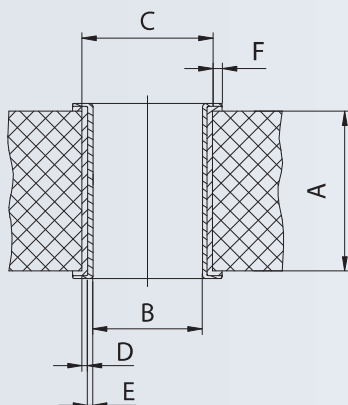
#### Customer-specific Solutions

Within the scope of PC/104 and PC/104-Plus applications, upon request ept also offers various customer-specific solutions with 2.0 mm and 2.54 mm grid.



## Technical Specifications

Technical Specifications	PC/104, PC/104-Plus	
	PC/104	PC/104-Plus
<b>Basics</b>		
Specification	PC/104	PC/104-Plus
Performance level	2 / 3	
Number of contacts	40 to 120	
Termination	Press-fit, solder	
Operating temperature range	-55°C to +125°C	
<b>Material</b>		
Insulator material	PBT glass filled, UL 94 V-0	
Contact material	Copper alloy	
Contact surface	Au over PdNi or Au over NiP over Ni	
<b>Mechanical</b>		
Pitch	2.54 mm	2.0 mm
Mating force per pin	max. 0.9 N	max. 1.5 N
Separating force per pin	max. 0.6 N	min. 0.3 N
<b>Electrical</b>		
Operational current	max. 1.9 A	max. 1.7 A
Operating voltage	150 V	100 V
Contact resistance	< 20 mΩ	
Clearance and creepage	1.2 mm	min. 0.5 mm
Insulation resistance	> 10 <sup>6</sup> M Ω	
<b>Processing</b>		
Packaging	Tray	
<b>Approval</b>		
Flammability	UL (file: E130314)	
Environment	RoHS compliant	



## Hole Specifications Press-fit

### Plated through-hole according to IEC 60352-5

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

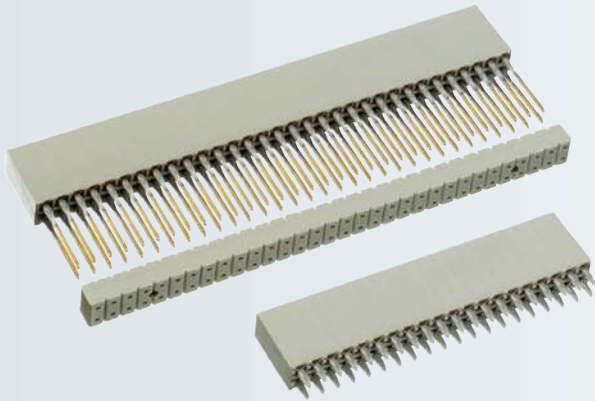
		PC/104-Plus	PC/104
Nominal hole		Ø 0.85 mm	Ø 1.0 mm
<b>imm. Sn printed circuit boards</b>			
<b>A</b>	PCB thickness	min. 1.4 mm	min. 1.4 mm
<b>B</b>	Plated hole	Ø 0.85 + 0.10/- 0.05 mm	Ø 1 + 0.09/- 0.06 mm
<b>C</b>	Drill hole	1.0 ± 0.025 mm	1.15 ± 0.025 mm
<b>D</b>	Cu plating	min. 25 µm	min. 25 µm
<b>E</b>	imm. Sn plating	max. 1.5 µm	max. 1.5 µm
<b>F</b>	Annular ring	min. 0.1 mm	min. 0.1 mm
<b>Ni, Au printed circuit boards</b>			
<b>A</b>	PCB thickness	min. 1.4 mm	min. 1.4 mm
<b>B</b>	Plated hole	Ø 0.85 + 0.09/- 0.05 mm	Ø 1 + 0.09/- 0.06 mm
<b>C</b>	Drill hole	1.0 ± 0.025 mm	1.15 ± 0.025 mm
<b>D</b>	Cu plating	min 25 µm	min. 25 µm
<b>E</b>	Ni, Au plating	0.05 – 0.2 µm Au over 2.5 – 5µm Ni	0.05 – 0.2 µm Au over 2.5 – 5 µm Ni
<b>F</b>	Annular ring	min 0.1 mm	min 0.1 mm
<b>pure Cu printed circuit boards</b>			
<b>A</b>	PCB thickness	min. 1.4 mm	min. 1.4 mm
<b>B</b>	Plated hole	Ø 0.85 + 0.10/- 0.05 mm	Ø 1 + 0.09/- 0.06 mm
<b>C</b>	Drill hole	1.0 ± 0.025 mm	1.15 ± 0.025 mm
<b>D</b>	Cu plating	min. 25 µm	min. 25 µm
<b>E</b>	OSP*	e.g. GLICOAT-SMD (F2) with 0.12 – 0.15 µm	e.g. GLICOAT-SMD (F2) with 0.12 – 0.15 µm
<b>F</b>	Annular ring	min. 0.1 mm	min. 0.1 mm
<b>HAL Sn printed circuit boards</b>			
<b>A</b>	PCB thickness	min. 1.4 mm	min. 1.4 mm
<b>B</b>	Plated hole	Ø 0.85 + 0.10/- 0.05 mm	Ø 1 + 0.09/- 0.06 mm
<b>C</b>	Drill hole	1.0 ± 0.025 mm	1.15 ± 0.025 mm
<b>D</b>	Cu plating	min. 25 µm	min. 25 µm
<b>E</b>	HAL Sn	5 – 15 µm	5 – 15 µm
<b>F</b>	Annular ring	min. 0.1 mm	min. 0.1 mm

\* OSP = Organic Solderability Preservatives



# PC/104, PC/104-Plus

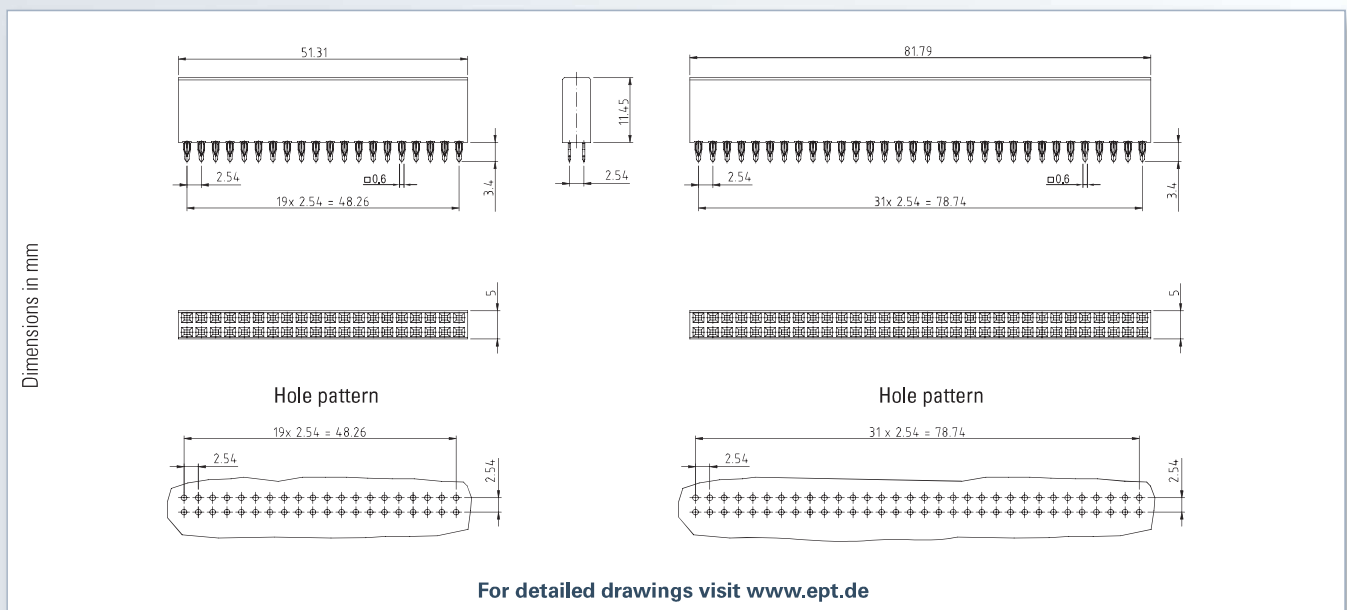
## PC/104 Female Connector



**Type:** Female connector straight  
**Termination:** Press-fit, solder  
**Number of contacts:** 40, 64  
**Pitch:** 2.54 mm  
**Operational current:** 1.9 A  
**Packaging:** Tray  
**Standard:** PC/104



Technical Specifications on page 7



### Accessories

- Processing tools see catalog

### Note


At a contact length of 12.2 mm a guiding block is scope of delivery.

### Mating connector / Application:

- PC/104 Female connector (p. 9)
- VarPol Straight pin header




**Press-fit** 

No. of contacts	Performance level	Termination length L 	
		3.4 mm	12.2 mm
		Part number	
40	II	962-60206-03	962-60206-12
40	III	962-60202-03	962-60202-12
64	II	962-60326-03	962-60326-12
64	III	962-60322-03	962-60322-12

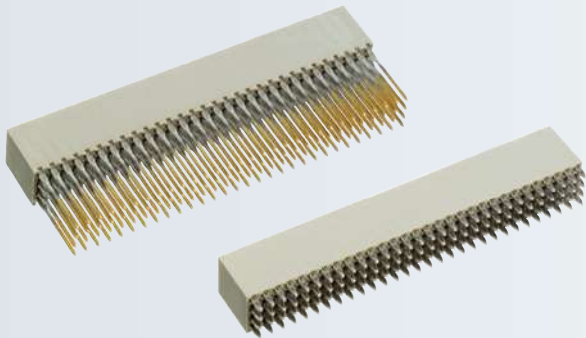


**Solder** 

No. of contacts	Performance level	Termination length L 
		3.4 mm
		Part number
40	II	962-40206-03
40	III	962-40202-03
64	II	962-40326-03
64	III	962-40322-03

# PC/104, PC/104-Plus

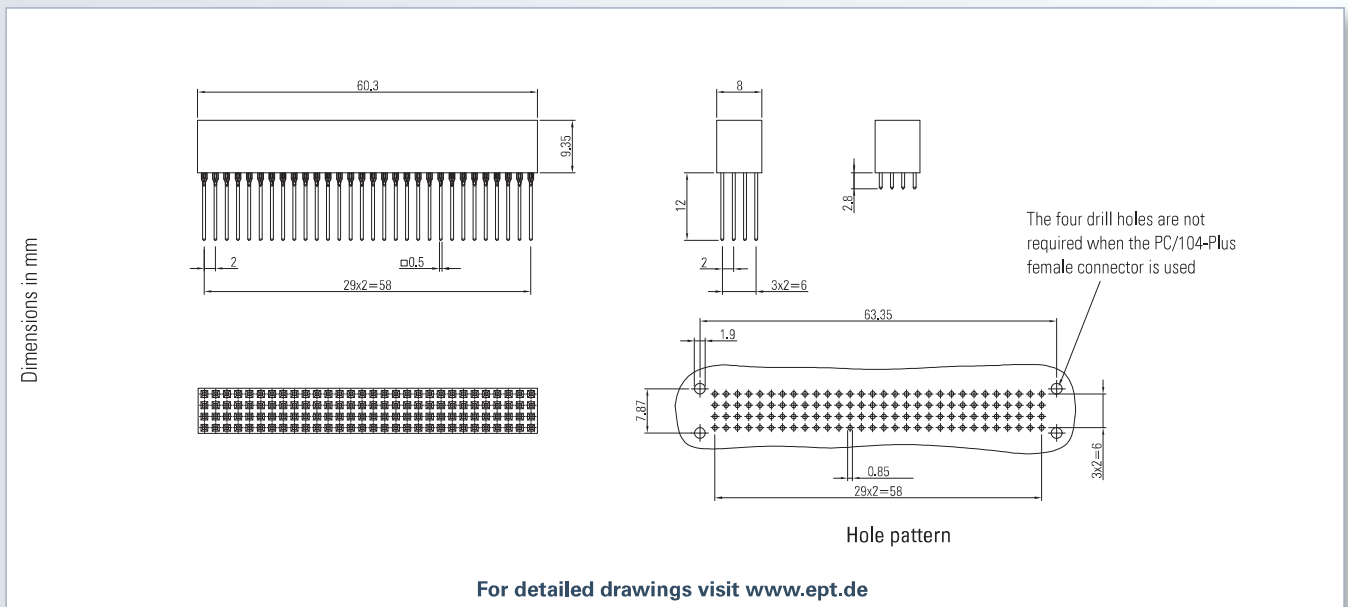
## PC/104-Plus Female Connector




**Type:** Female connector straight  
**Termination:** Press-fit, solder  
**Number of contacts:** 120  
**Pitch:** 2.0 mm  
**Operational current:** 1.7 A  
**Packaging:** Tray  
**Standard:** PC/104-Plus



Technical Specifications on page 7



### Press-fit - Performance level III


No. of contacts	Termination length L 	
	2.8 mm	12 mm
Part number		
120	264-60303-02	264-60303-12

**On request**

• other no. of contacts




### Solder - Performance level III

No. of contacts	Termination length L 
	2.8 mm
Part number	
120	264-40303-02

#### Accessories

- Processing tools see catalog
- Shroud p. 14

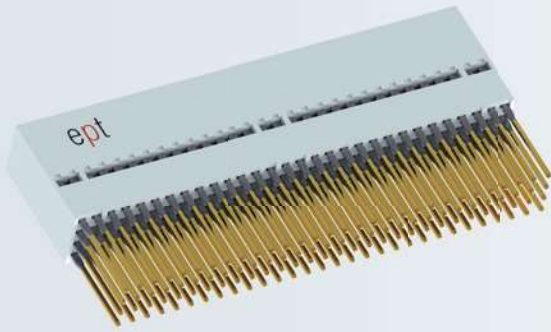
#### Mating connector / Application:

-  PC/104-Plus Pin header (p. 13)
-  PC/104-Plus Female connector (p. 11)



# PC/104, PC/104-Plus

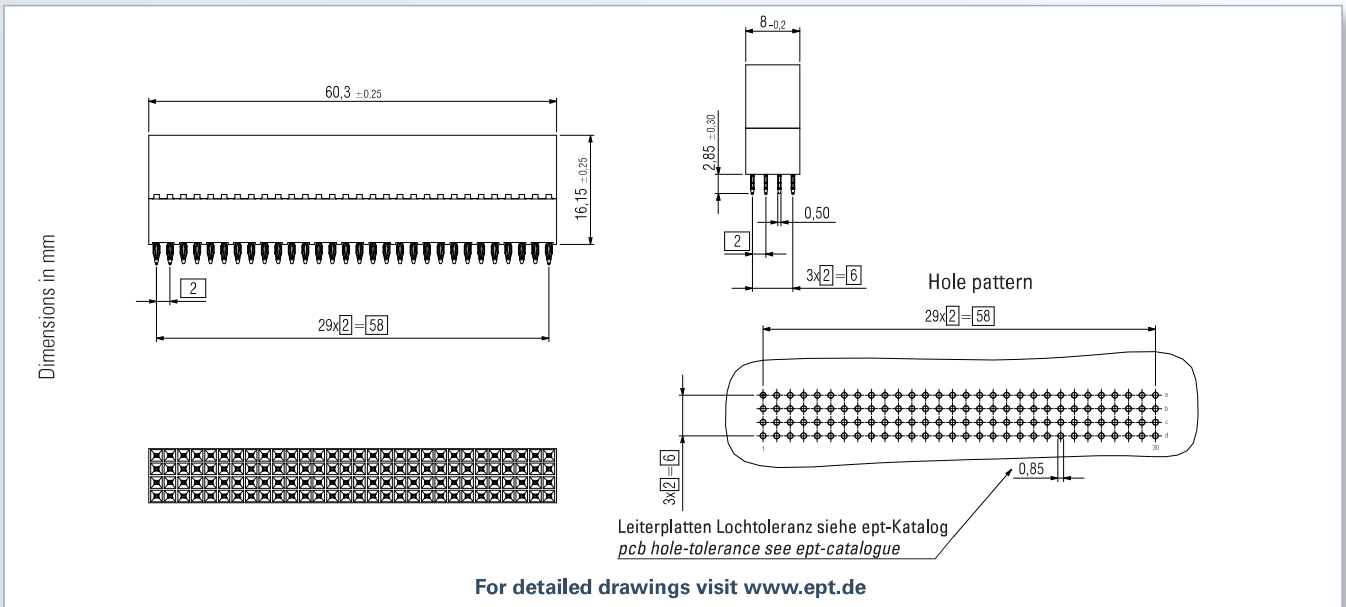
## PC/104-Plus Female Connector 22 mm



- Type:** Female connector straight
- Termination:** Press-fit
- Number of contacts:** 120
- Pitch:** 2.0 mm
- Operational current:** 1.7 A
- Packaging:** Tray
- Standard:** PC/104-Plus



Technical Specifications on page 7



### Press-fit - Performance level III

No. of contacts	Termination length L	
	Part number	
120	264-61303-02	264-61303-12

**On request**

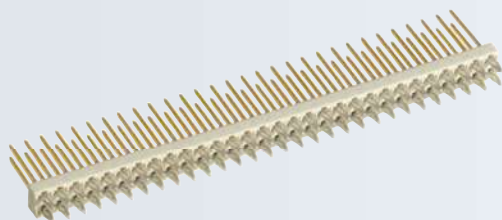
- other no. of contacts

#### Accessories

- Processing tools see catalog
- Shroud p. 14

#### Mating connector / Application:

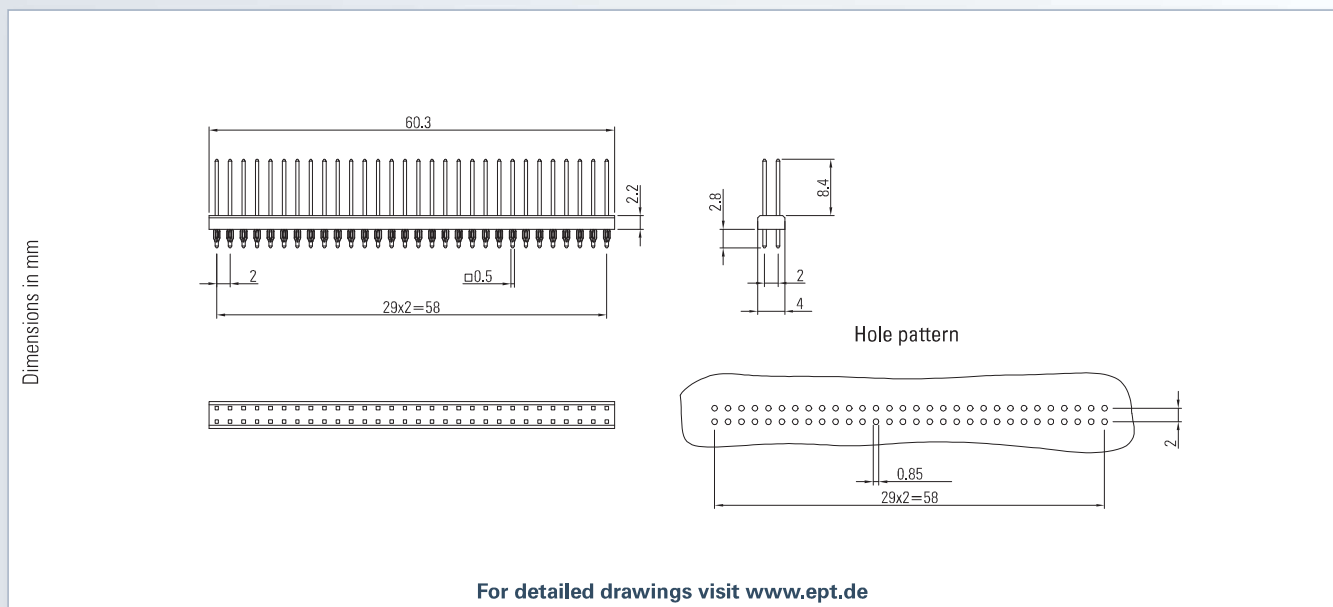
- PC/104-Plus Pin header (p. 13)
- PC/104-Plus Female connector (p. 11)



**Type:** Male connector straight  
**Termination:** Press-fit  
**Number of contacts:** 60  
**Pitch:** 2.0 mm  
**Operational current:** 1.7 A  
**Packaging:** Tray  
**Standard:** PC/104-Plus



Technical Specifications on page 7



**Press-fit - Performance level III**

	Termination length
No. of contacts	
	Part number
60	272-30000-31

**On request**

- other lengths
- other contact numbers

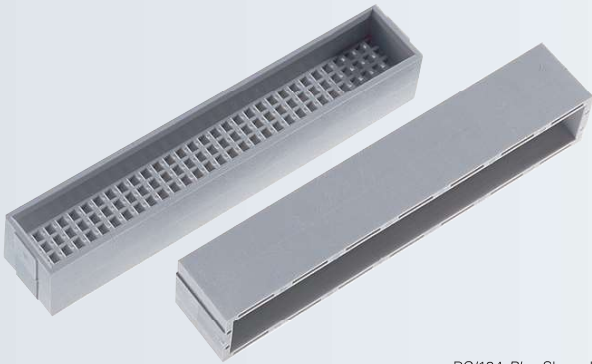
**Accessories**

- Processing tools see catalog

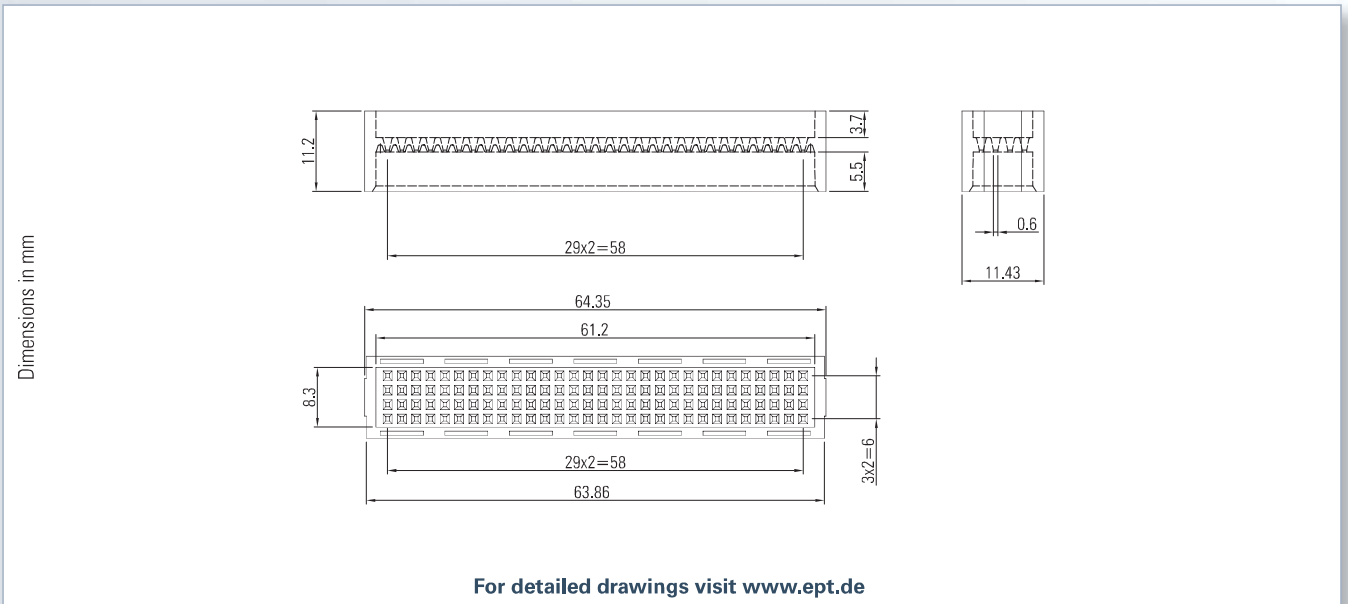
**Mating connector / Application:**



PC/104-Plus Female connector (p. 11)



PC/104-Plus Shroud



	PC/104-Plus	
	Shroud	Spacer
No. of contacts		
	Part number	
120	264-17302	264-16302

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