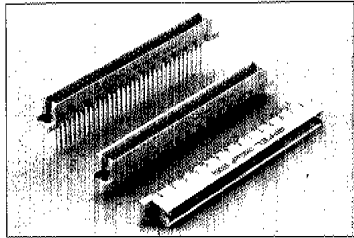


# Apfel DIN41612 Connectors

## APFEL

## DIN 41612 EUROCARD CONNECTORS

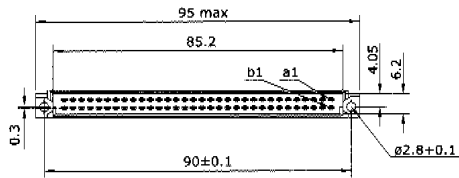
### Vertical Male Type Q Compliant Press-Fit Connectors-Inversed



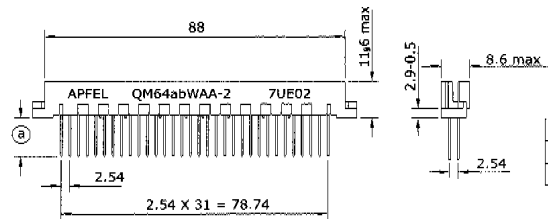
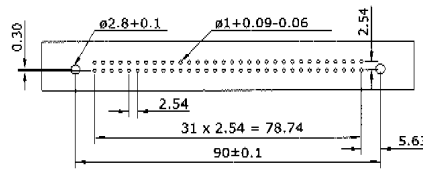
**Option:**

- Extended male contact
- Coded connector
- Variations
- Please refer to page 33 for complete part number coding.
- Other variations, please consult factory.

**Dimensions**



**Recommended P.C.B. layout**



	P	PWAA	PWAB	PWBA	PWBB
a =	5	13	13	17	17
K =		0.64x0.64	0.6x0.6	0.64x0.64	0.6x0.6

**Ordering Information**

Number of contacts	Rows/Positions with Contact	Class3			Class2			Pitch
		-FG Flash gold on tail			-2Tin-plated on tail -FG Flash gold on tail -2G Gold-plated on tail			
		5.0mm	13mm Wrap post	17mm Wrap post	5.0mm	13mm	17mm	
64	a+b	QM64ab P	QM64ab PWAA QM64ab PWAB	QM64ab PWBA QM64ab PWBB	QM64ab P-2	QM64ab PWAA-2 QM64ab PWAB-2	QM64ab PWBA-2 QM64ab PWBB-2	2.54mm
32	a+b All even no.	QM32ab P	QM32ab PWAA QM32ab PWAB	QM32ab PWBA QM32ab PWBB	QM64ab P-2	QM32ab PWAA-2 QM32ab PWAB-2	QM32ab PWBA-2 QM32ab PWBB-2	5.08mm half-loaded

**Remarks:**

P—Straight press-fit 5.0mm tail length

PWAB, PWAA—Straight press-fit 13mm tail length

PWBB, PWBA—Straight press-fit 17mm tail length

K—Cross section of wrap post (Thickness x Width)

Dimensions shown are for reference purpose only. All dimensions are in millimeters unless otherwise specified.

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# Apfel DIN41612 Connectors

## APFEL

## FEATURES OF DIN 41612 EUROCARD

### Two-piece printed circuit connectors

#### ■ Indirect connectors

It can eliminate the problems of board warpage, different board thickness

#### ■ High density

96 contacts in 2.54mm grid are available in a compact body.

#### ■ High reliability

Dual beam metal-to-metal contact polarized connectors for all series to prevent mismatching.

This connectors are versatily used in telecommunications, instruments, computers, control system ect.

#### • General specifications:

**Number of contacts:** 16,24,32,48,64,96

**Contact spacing:** 2.54mm(0.1"),5.08mm(0.2" half-loaded)

#### Material

**Insulator:** Glass filled polyester (PBT, UL flammability 94V-0)

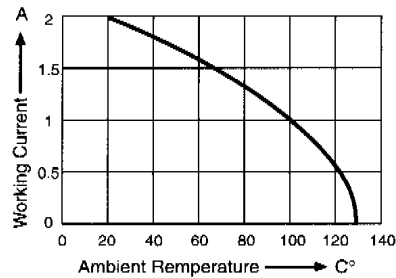
**Contacts:** Female copper alloy, male brass

**Contact finish:** Contact area: gold over nickel (per requirements of performance class 3, class 2)

**Termination area:** TIN-plated or gold-plated for long wrap post

#### Mechanical

**Insertion force:** 96 contacts max 90N  
64 contacts max 60N  
48 contacts max 45N  
32 contacts max 30N  
16 contacts max 15N  
Withdrawl force per contact: min 0.15N  
Temperature range:-55°C to +125°C  
Air and creepage distance 1.2mm min



#### Electrical

**Current rating:** 20°C 2A  
70°C 1A  
100°C 0.5A

**Contact resistance:** ≤20mΩ

(testing current 100mA) ≤40mΩ after 400 mating cycles

**Capactance between adjacent contacts:** Appr.2PF

**Insulation resistance:** ≥10<sup>12</sup>Ω (between adjacent cotacts at 100VDC)

**Test voltage:** 1,000Vrms between contacts (2.54mm spacing)

1,550Vrms between contacts (5.08mm spacing)

1,550Vrms between contacts and body

**Operating voltage:** 250V AC

- Specifications are subject to change without prior notice.
- All dimensions are in mm (milli meter)

#### Agency Approval

- U/L File E149341,Electric rating:250V, 2A

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# Apfel DIN41612 Connectors

**APFEL**

**DIN 41612 EUROCARD CONNECTORS**

**OPTIONS:**

**-X**

**EXTENDED MALE CONNECTORS  
—EARLY MAKE/LATE BREAK**

APFEL provides the early make /late break extended male contacts connectors. Before entering order, please advise the positions of extended male contacts of Row a, Row b, Row c and request for correct P/N coding for this variation. Please refer to page 33 for complete part number coding. E.G. CM96abc R-X1(contact positions, a1.b1.c1.a32.b32.c32, with extended longer contact.)



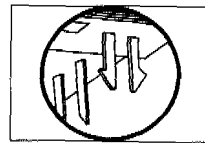
**-MC**

**CONNECTORS WITH PRE-INSTALLED  
SNAP-IN MOUNTING CLIPS**

The mounting clips are designed for use with 1.6mm (0.062")P.C.B. thickness. The material of mounting clips is copper alloy and it is Tin plated.

All solder connectors can be ordered with this feature.

Please refer to page 33 for the complete part number coding. E.G. CM 64ac R-MC1, CF64ac T-MC2.



**-C**

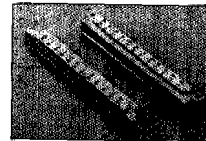
**WITHOUT LOSS OF CONTACTS  
CODING SYSTEM**

APPEL provides coded connectors for type B.C.Q.R.M.

The coded connectors are with following advantages

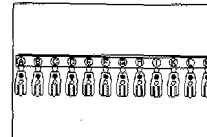
- Without loss of contact
- No need to break off the plastic housing, no tools are required.
- Manually keying, keying can be changed and corrected easily.

E.G. CM64ac R-C



**KEYING COMB SET**

Each comb set includes 12keys, please order separately. Ordering part number for this plastic comb set is CS12



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# Apfel DIN41612 Connectors

## DIN 41612 EUROCARD CONNECTORS

# APFEL

### PRESS-FIT TERMINATION CONNECTORS

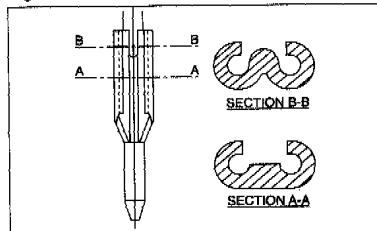
APFEL provides the unique patented compliant twin-eye of the needle press-in terminations.

It owns the following advantages:

- Tapered entry.
- Gas tight and larger contact area with the wall of the plated through hole.
- Conform to the hole variance.

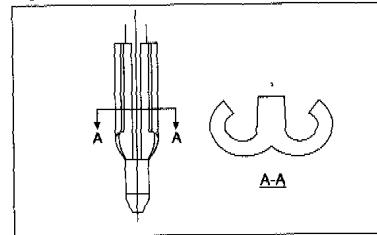
### PATENTED CONSTRUCTION

Fig 1



Construction of female short press-fit contact  
5mm tail length

Fig 2



Construction of long post (13mm, 17mm) male &  
female connectors, male press-fit 5mm tail length

Diameter of P.C.B plated through hole:

$\varnothing=0.94-1.09\text{mm}(0.037-0.43\text{inch})$

P.C. board thickness:

$\geq 1.6\text{mm}(0.062\text{inch})$

Recommended P.C. board holes:

hole  $1.15^{+0.02}\text{mm}(0.0453^{+0.0008}\text{inch})$

Copper plating:

25-50 $\mu\text{m}$ (0.001 inch min.)

Tin plating:

5-15 $\mu\text{m}$ (0.002 inch min.)

Push-in force per pin for plated through hole:

max 8kg/pin (17.5 lbs/pin)

Push-out force per pin for plated through hole:

min. 3.5kg/pin(7.5lbs/pin)

Fig 3



Cross section of an assembled P.C. Board.

Fig 4



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# Apfel DIN41612 Connectors

## PRESS-FIT TOOLING

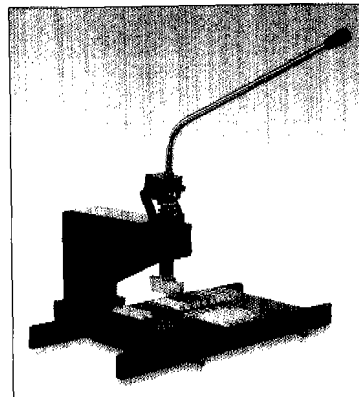
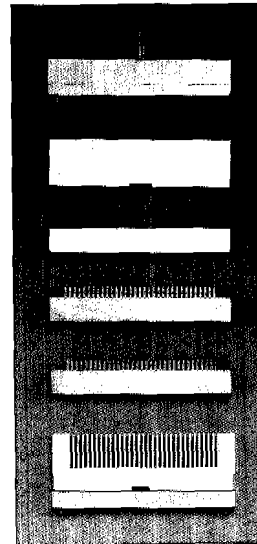
**APFEL**

**DIN 41612 EUROCARD CONNECTORS**

### HAND-ACTUATED PRESS-FIT EQUIPMENT

### THE MOST EASY WAY TO PRESS IN PRESS-FIT CONNECTOR

1. Hand bench press  
Working stroke: approx. 25mm  
Press force: approx. 15KN  
Hole  $\phi$  in the RAM: 10mm  
Weight: approx. 30kg  
Adjustable distance for stroke: approx. 25mm
2. Guide frame  
adjustable guide for P.C.board  
max: 330mm X 600mm (min P.C.B. width 100mm)  
Part No. for item 1, and item 2, in one set is HPE01
3. Mounting tool P/N: MT01  
This tool is to be fastened to the 10mm RAM of hand bench press.
4. Alignment tool P/N: AT01  
This tool is to make alignment for mounting tool and bottom tool.
5. Female top tool P/N: FTT01  
This tool is to be mounted with mounting tool for press-in female connectors.
6. Male top tool  
For RM type, P/N: TL-03  
For QM type, P/N: TL-02  
For 1/2 RM type, P/N: TS-03  
For 1/2 QM type, P/N: TS-02
7. Bottom tool P/N: BT-01  
This tool is to be mounted on the base of guide frame.



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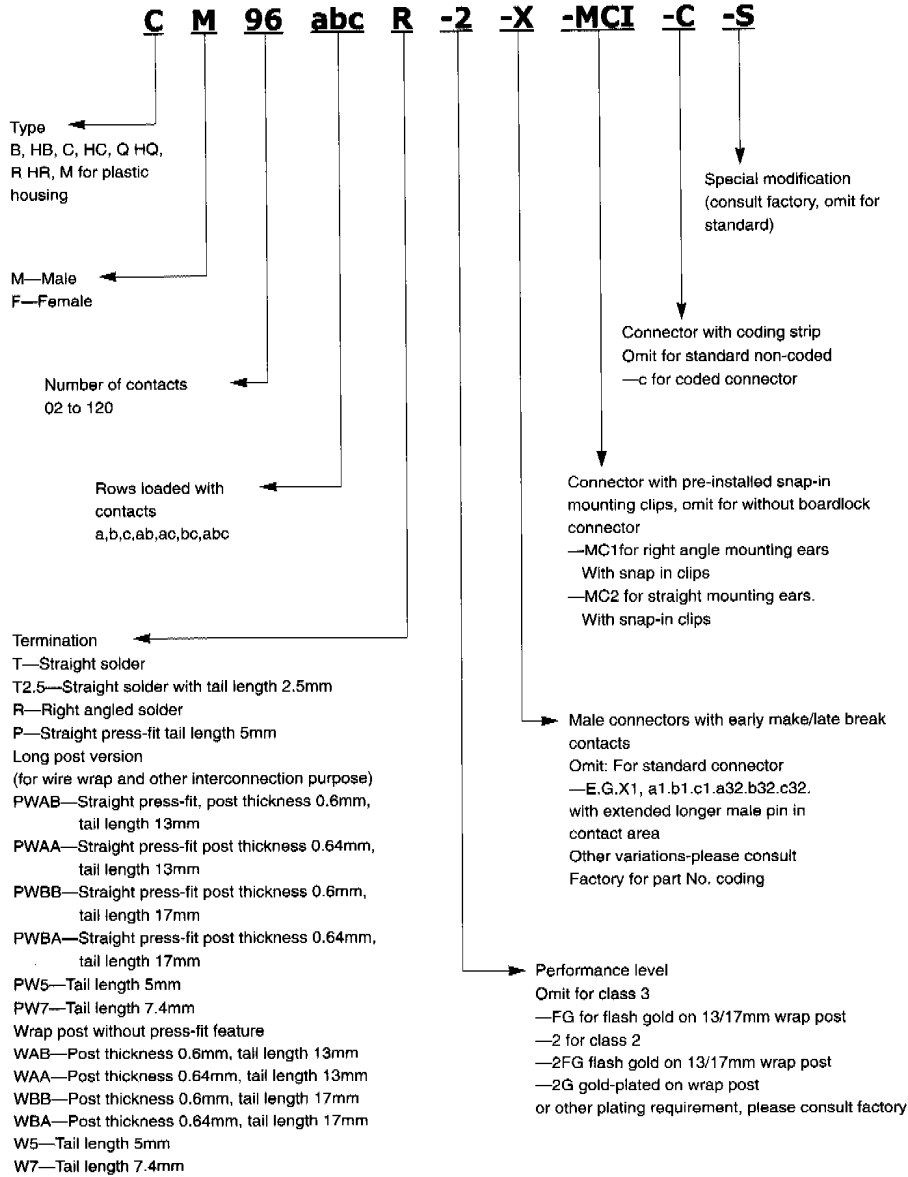
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# Apfel DIN41612 Connectors

## DIN 41612 EUROCARD CONNECTORS

# APFEL

### How to Order



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