

COMBICON 19 Inch

19" technology for MCR technology

SKBI plug-in card blocks

Thanks to the SKBI plug-in card blocks for connectors as per IEC 60 603 1 / DIN 41 617 and IEC 60 603-2 / EN 60 603-2, single European format cards and double European format cards can be installed everywhere in the control cabinet and easily wired using a screw connection. The printed circuit board is reliably supported in the robust insulation housing and is automatically held in position by engagement catches which prevent it from falling out. The easy-to-operate ejectors make it simple to release the printed circuit board, even in narrow spaces.

SFLY/Front-SFL screw-type socket strips

The SFLY and FRONT-SFL socket strips with a screw connection at the rear have been developed for use in a 19" rack. They are suitable for 32-pos. pin strips as per IEC 60 603-2 / EN 60 603 2 for types D and F. The special feature of the Y-shaped SFLY screw-type socket strip is the angled arrangement of terminal blocks. In addition to convenient handling and a clear view during connection, the conductors can be laid in this "cable duct" without further space requirements.

Socket strip with spring-cage connection FRONT-ZFL 1,5/...

The FRONT-ZFL 1,5 D32 socket strip with a spring-cage connection at the rear has been specially developed for use in 19" racks. The installation dimensions and the labeling of individual terminal points fulfill the requirements of IEC 60 603-2 / EN 60 603 2 for type D32.

General

SKBI plug-in card blocks

For connectors as per IEC 60 603-1/DIN 41 617 and IEC 60 603-2/EN 60 603 2

SFLY screw-type socket strips

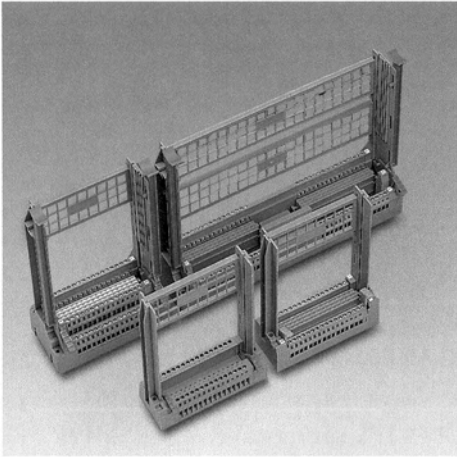
For pin strips as per IEC 60 603-2 / EN 60 603 2

Socket strips with a FRONT-ZFL spring-cage connection

For connectors as per IEC 60 603-2 / EN 60 603-2 FRONT-ZFL socket strip

FRONT-SFL screw-type socket strips

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General

Industrial electronics is advancing further and further into conventional control systems. This is happening mostly with printed circuit boards with the European format 100 x 160 mm.

Increased safety requirements and the higher density of components and connections accelerate the trend towards the indirect contacting principle with pin strips in accordance with IEC 60 603 1/ DIN 41 617 and IEC 60 603 2/EN 60 603 2.

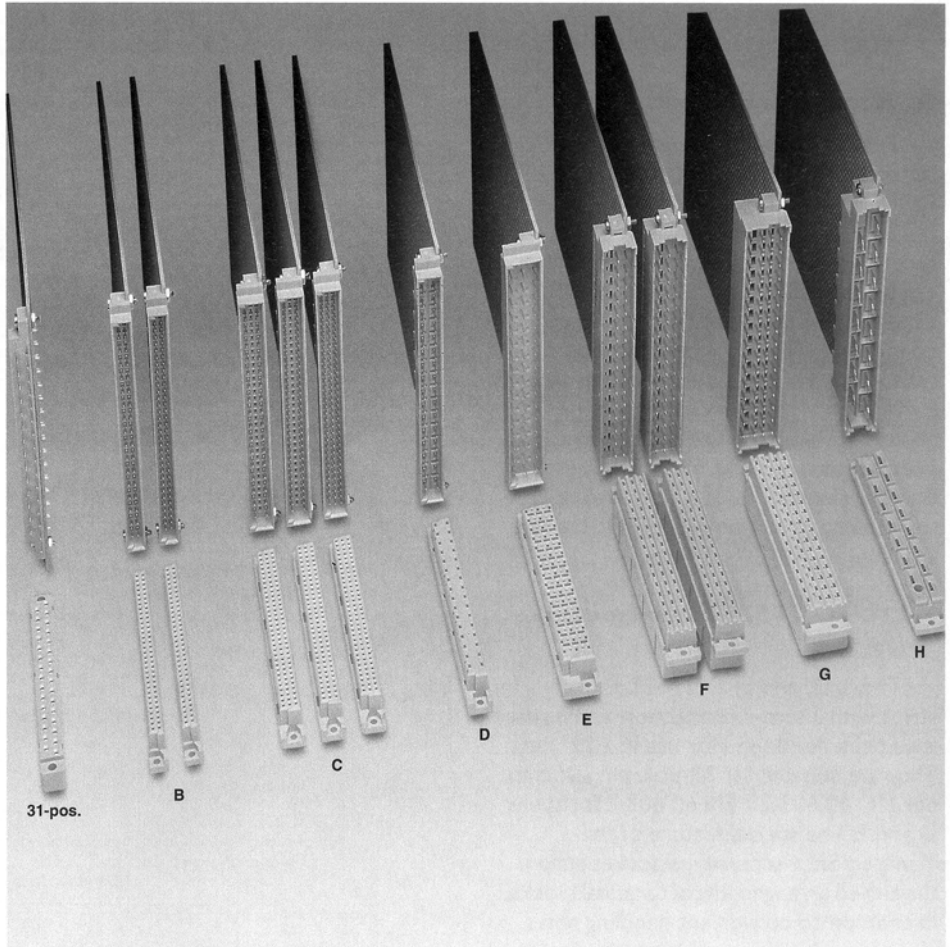
Plug-in cards are normally grouped together in the electronic racks of 19" cabinets. Although such a rack is practical for many printed circuit boards, it is costly

- if only one, two or three cards are to be installed and connected,
- if the printed circuit board is to be installed decentrally, thereby saving wiring within the cabinet, or
- if older systems are to be subsequently modernized by adding one or two electronic cards.

A rack is costly, voluminous and only accessible from the rear or with the aid of a complex swing frame. In addition, connections can often only be made using the Wire-Wrap® or TERMI-POINT® connection methods which are not suitable for heavy currents.

These disadvantages are overcome by the Phoenix SKBI plug-in card blocks. With the aid of these blocks, single or double European format cards can be installed at any position in the control cabinet and can be connected using simple screw connections.

The printed circuit board is reliably supported in the robust housing made of glass-fiber-reinforced polyamide and automatically protected against vibrations by two engagement catches after insertion to prevent loosening. The easy-to-use ejectors make it simple to release the printed circuit board even in narrow spaces.



Connectors in accordance with IEC 60 603 1/DIN 41 617 and IEC 60 603 2/ EN 60 603 2.

With the introduction of the European format 100 x 160 mm, the 31-position pin strip in accordance with IEC 60 603 1/ DIN 41 617 became common at the beginning of the 1960s as an indirect connector. The exposed, round pins in a metric 5 mm zigzag layout are characteristic of these connectors.

The rapid development in industrial electronics, i.e. the increasing packing density of electronic components on the printed circuit board, required greater numbers of contact pins. Moreover, safety requirements were designed for increased protection of the contact pins against mechanical damage and dirt. These requirements led to development of the connector in accordance with IEC 60 603 1/DIN 41 617.

All types in this range are based on the pitch dimension of 2.54 mm (one tenth of an inch). The seven vertical rows are marked from z to f, the individual pins of the lines from top to bottom are marked from 1 to 32. All contacts are gold-plated. The standards also require that connectors consisting of pin and socket strips and made

by different manufacturers should be compatible with each other.

In the course of time, two designs with different contact arrangements have emerged.

Series 1

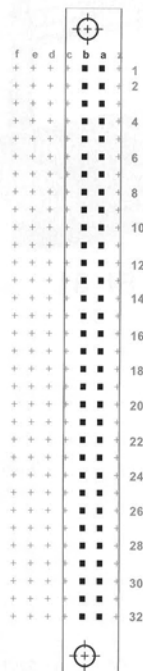
Series 2

IEC 60 603-/
DIN 41 617
31-pos.



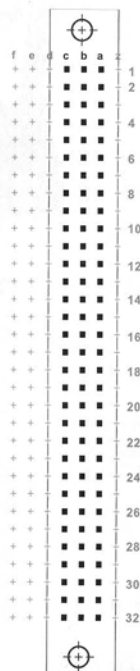
Pitch 5.0
Pin 1 mm \varnothing
Current 5 A

B
max. 64-pos.



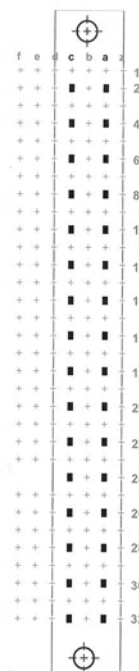
Pitch 2.54
Knife 0.7 x 0.6
Current 1 A

C
max. 96-pos.



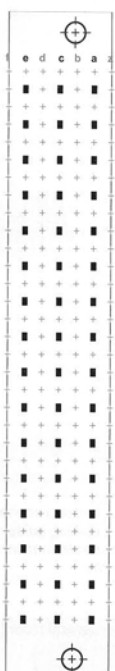
Pitch 5.08
Knife 0.7 x 0.6
Current 1 A

D
max. 32-pos.



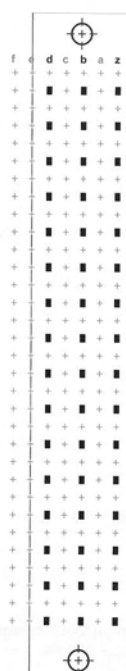
Pitch 5.08
Knife 1 x 0.6
Current 4 A

E
max. 48-pos.



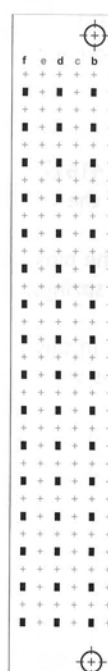
Pitch 5.0
Knife 1 x 0.6
Current 4 A

F
max. 48-pos.



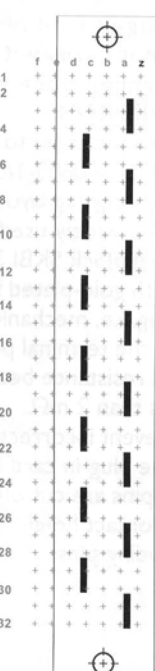
Pitch 5.08
Knife 1.5 x 0.6
Current 4 A

G
max. 64-pos.



Pitch 5.08
Knife 1.5 x 0.6
Current 4 A

H
max. 15-pos.



Knife 4.8 x 0.8
Current 15 A

Series 1

Series 1 connectors are available both as multiposition devices with closely spaced contacts and 1 A current carrying capacity, and (for industrial power electronics) with a lower numbers of positions, a large 5.08 mm contact pitch and contacts capable of carrying up to 4 A.

Type B

This 64-position connector results from the complete use of rows a and b. The contacts are dimensioned for a current carrying capacity of 1 A. The position spacing means that these connectors can be used for voltages up to 125 V in accordance with DIN VDE 0110/Size B. In the 32-position version, only the even positions are used.

Type C

Adding row c results in this 96-position connector. If only the two outer rows a and c are used, type C 64 results as an alternative.

If this is further reduced to just the even-numbered positions of rows a and c, type C 32 with a 5.08 mm horizontal and vertical spacing of the 1 A contacts results. A nominal voltage of 250 V is achieved, in accordance with DIN VDE 0110 Size C.

Type D

This connector has the same dimensions and the same contact arrangement (even-numbered positions in rows a and c) as type C 32. The only difference is the reinforced

contacts, which are capable of carrying a current of up to 4 A.

Type E

Adding rows d and e to type D 32 results in the 48-position connector with 4 A contacts in a 5.08 mm pitch. This means that all even-numbered positions in rows a, c and e are occupied.

Series 2

In the connectors in series 2, the pitch of the rear connections in both directions is 5.08 mm. The row spacing on the plug-in side is just 3.81 mm. In addition, the creepage distances to ground are increased by raising the housing at the rear, which results in a different wiring level from that of series 1.

All contacts are capable of carrying up to 4 A. For this reason, connectors of series 2 are mainly used in industrial electronics applications.

The mounting hole is almost precisely in the center of the strip. This is achieved by a trick: A further contact row z is added in front of row a. (This comes from regarding the alphabet as a closed ring and counting backwards from a.)

Type F

In addition to the complete 48-position design which uses all even-numbered positions in rows z, b and d, the DIN standard also includes a partially assembled 32-position version in rows z and b. Occasionally, (to ensure larger mutual insulation distances) the positions in rows z and d may be used.

Type G

This design results from adding the pitch rows e and f, while still using only the even-numbered positions.

Type H

These 11 or 15-position high current strips have the same dimensions as the types C and F. However, they are distinguished by a different plugging geometry and the amplified contacts with a current carrying capacity of 15 A.

Other types

In addition to the strips equipped with the same type of contacts, there are mixed types, e.g. H 7/F 24, shortened types such as C 1/2 and the inverted type R. All these, however, play a secondary role in practical industrial applications.

More details available on request.