
International Standard



5866

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

**Aircraft — 2 and 3A plug-in base change-over relays,
Type II, with crimped connections — Clearance
and fixing dimensions**

Aéronefs — Relais de commutation à socle 2A et 3A, type II, avec raccordements à sertir — Dimensions d'encombrement et de fixation

First edition — 1983-11-01

UDC 621.318.5 : 629.7

Ref. No. ISO 5866-1983 (E)

Descriptors : aircraft industry, aircraft, electric relays, plug-in relays, dimensions, dimensional tolerances, designation.

Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5866 was developed by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, and was circulated to the member bodies in April 1982.

It has been approved by the member bodies of the following countries :

Australia	Egypt, Arab Rep. of	Romania
Austria	France	South Africa, Rep. of
Belgium	Ireland	Spain
Brazil	Italy	Sweden
Canada	Netherlands	USA
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The member bodies of the following countries expressed disapproval of the document on technical grounds :

China
Germany, F.R.
United Kingdom

Aircraft — 2 and 3A plug-in base change-over relays, Type II, with crimped connections — Clearance and fixing dimensions

1 Scope and field of application

This International Standard lays down the dimensions and specifies the fixing and the designations of 2 and 3A two pole and 3A four pole plug-in base change-over relays, Type II, with crimped connections for use in aircraft.

The characteristics and performance requirements of these relays will be specified in forthcoming International Standards.

2 Reference

ISO 1101, *Technical drawings — Geometrical tolerancing — Tolerances of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings.*

3 Definition

type II plug-in base relays : Plug-in base relays, where the dimensions and fixing are in accordance with one of the figures shown in this International Standard.

4 Dimensions

4.1 2 and 3A two pole and 3A four pole plug-in base relays

Two and four pole plug-in base change-over relays with and without a device for the mechanical protection of the connections.

4.1.1 Relays without a device for the mechanical protection of the connections

The dimensions of these plug-in base relays are defined in figure 1 and table 1.

Dimensions in millimetres (Dimensions in inches in parentheses)

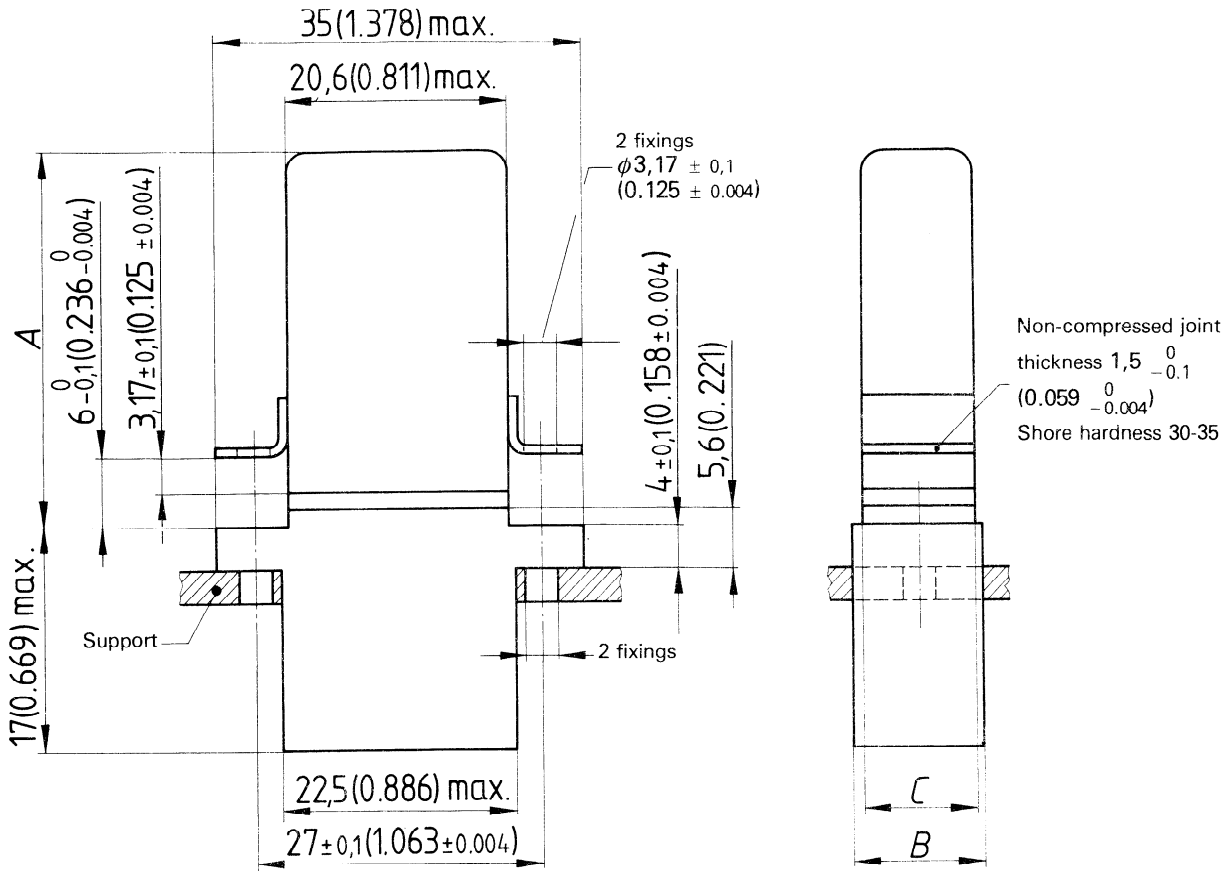


Figure 1 — Relays without a device for the mechanical protection of the connections

Table 1

Dimensions max.	2 pole 2A change-over relays		2 pole 3A change-over relays		4 pole 3A change-over relays	
	mm	in	mm	in	mm	in
A	19	0.748	39	1.536	39	1.536
B	12,5	0.492	12,5	0.492	22,5	0.886
C	10,4	0.410	10,4	0.410	20,6	0.811

NOTES

- 1 All connections shall be marked on each connecting surface of the relay base.
- 2 At least one coil connection shall be identified by appropriate marking.
- 3 If it is necessary to indicate the preferred polarity, the plus sign (+) shall be used near the corresponding coil connection.
- 4 The operating diagram and the location of the contacts shall be marked indelibly on the relays.

4.1.2 Relays with a mechanical protection device for the connections

The dimensions of these plug-in base relays are shown in figure 2 and defined in table 2.

In this case the base may receive relays with or without the protection device for the connections.

Dimensions in millimetres (Dimensions in inches in parentheses)

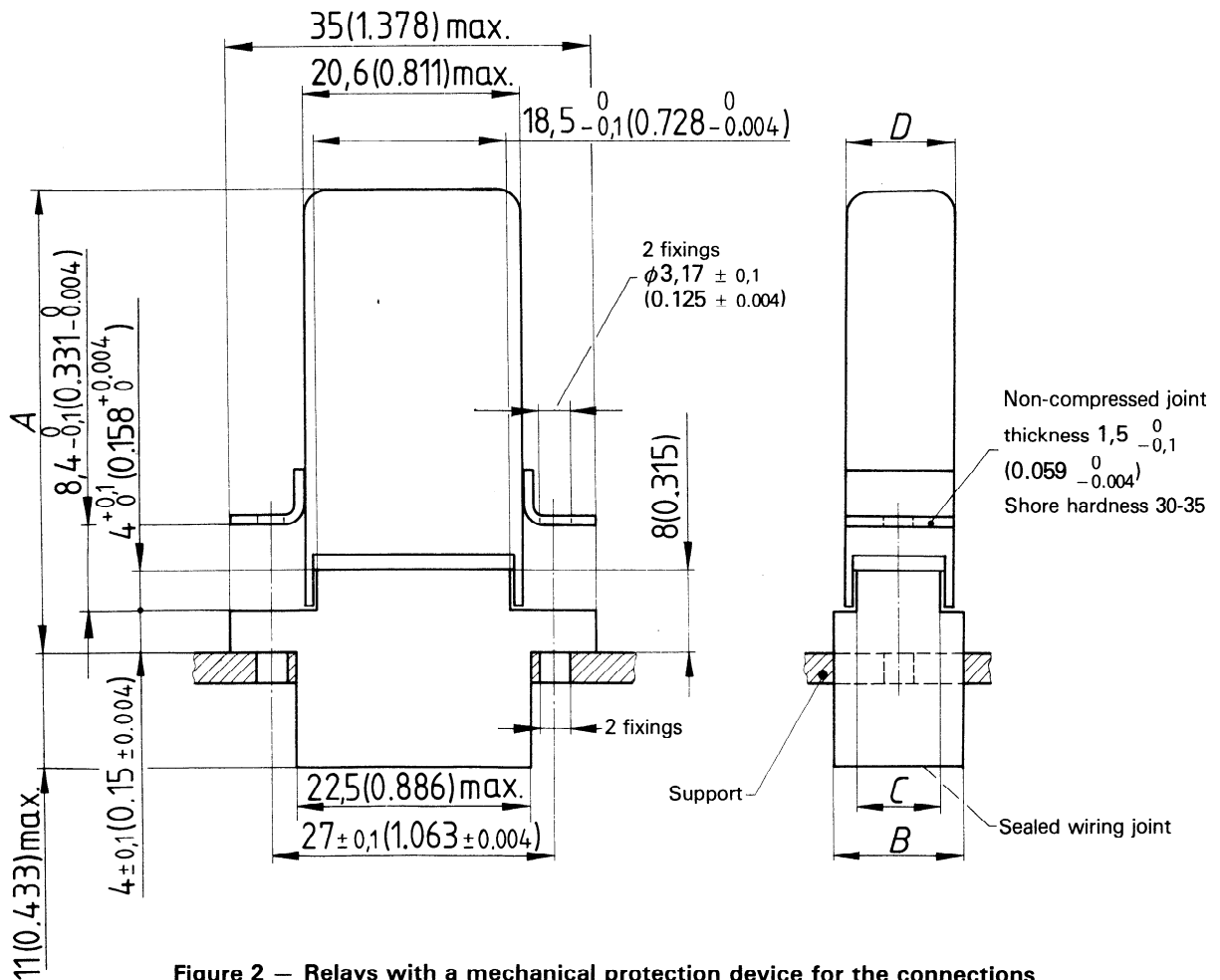


Figure 2 – Relays with a mechanical protection device for the connections

Table 2

Dimensions	2 pole 2A change-over relays		2 pole 3A change-over relays		4 pole 3A change-over relays	
	mm	in	mm	in	mm	in
A max.	21	0.827	42	1.654	42	1.654
B max.	12,5	0.492	12,5	0.492	22,5	0.886
C $\text{}_{-0,1}^0$	8,5	0.335	8,5	0.335	18,5	0.728
D max.	10,4	0.410	10,4	0.410	20,6	0.811

NOTES

- 1 All connections shall be marked on each connecting surface of the relay base.
- 2 At least one coil connection shall be identified by an appropriate marking.
- 3 If it is necessary to indicate the preferred polarity, the plus sign (+) shall be used near the corresponding coil connection.
- 4 The operating diagram and the location of the contact shall be marked indelibly on the relays.

4.2 Arrangement of terminals of bases (side view of the relays) and dimensions after coupling the contacts.

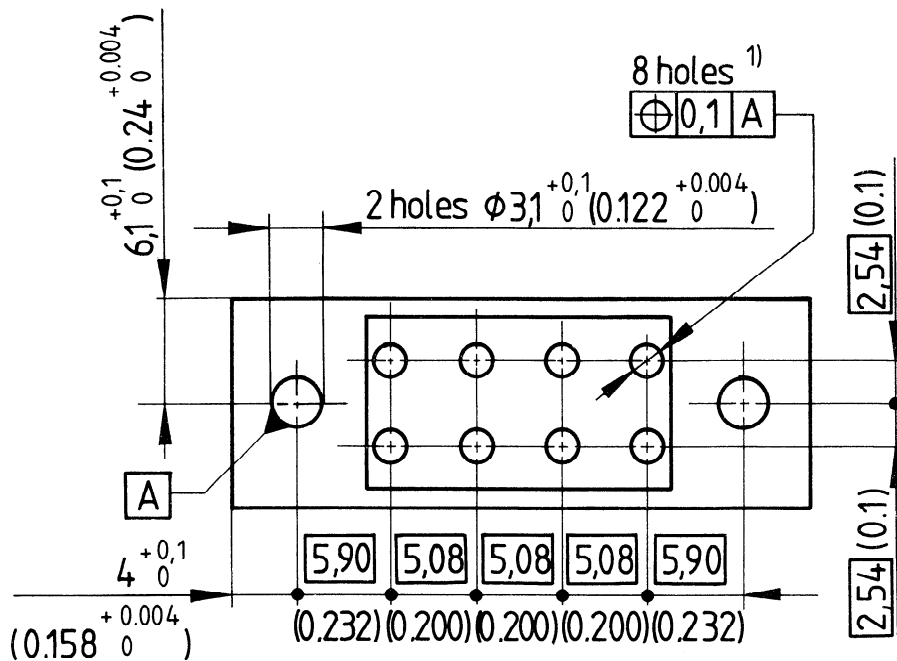
The arrangements of the terminals of the two and four pole plug-in base change-over relays are shown in figures 3 and 4.

The tolerances on the position and concentricity of the holes in the bases shall be compatible with those for the pins of the relays, in order to permit correct mounting of the relays on the bases.

4.2.1 Base for two pole, 2 and 3A change-over relays

This base has eight holes, minimum depth 5 mm (0.197 in) for male contact of diameter $0,8 \begin{smallmatrix} +0,01 \\ -0,07 \end{smallmatrix}$ mm ($0.032 \begin{smallmatrix} +0,0004 \\ -0,003 \end{smallmatrix}$ in).

Dimensions in millimetres (Dimensions in inches in parentheses)

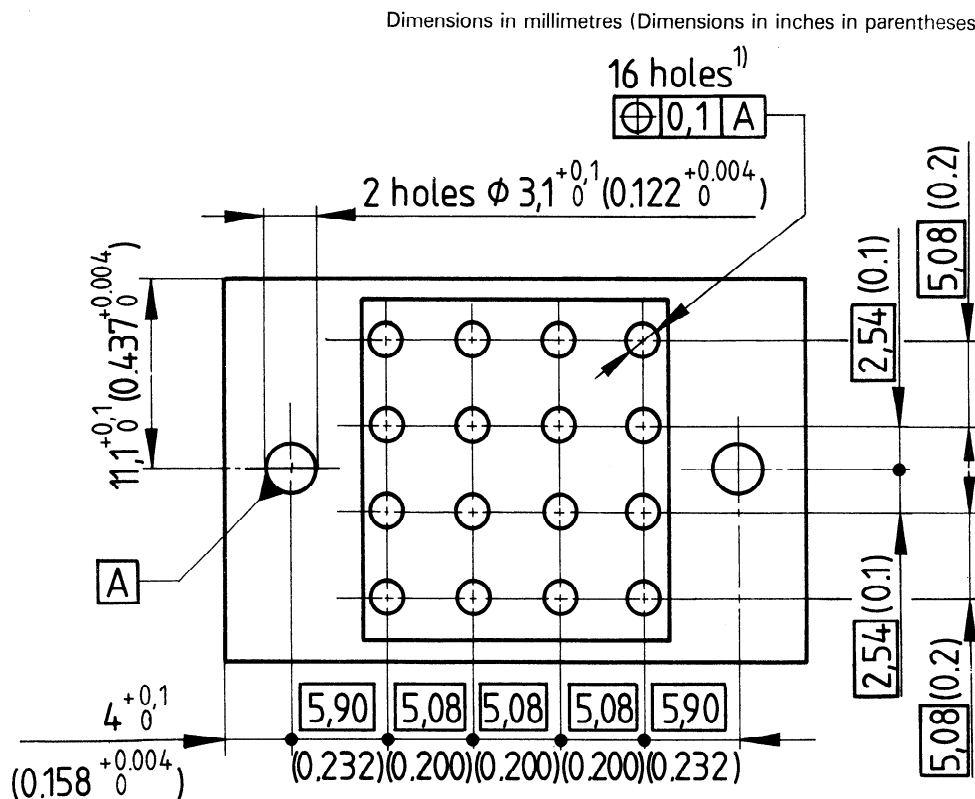


1) Since the positioning of the system for holding the contacts can vary with different manufacturing methods, the diameter of these holes is considerably greater than the corresponding diameter of the pins and it is proposed not to mention this.

Figure 3 — Dimensions of the base for two pole 2A and 3A change-over relays

4.2.2 Base for four poles 3A change-over relays

This base has 16 holes, of minimum depth 5 mm (0.197 in) for male contacts of diameter $0,8 \begin{smallmatrix} +0,01 \\ -0,07 \end{smallmatrix}$ mm ($0.032 \begin{smallmatrix} +0.0004 \\ -0.003 \end{smallmatrix}$ in).



1) Since the positioning of the system for holding the contacts can vary with different manufacturing methods, the diameter of these holes is considerably greater than the corresponding diameter of the pins and it is proposed not to mention this.

Figure 4 – Dimensions of the base for four pole 3A change-over relays

Figures 5 and 6 show certain dimensions for the male and female contacts and for the electrical contact zone.

Dimensions in millimetres (Dimensions in inches in parentheses)

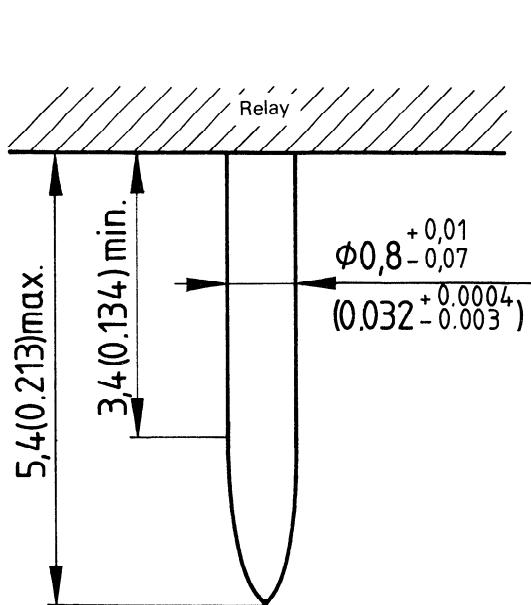


Figure 5 – Dimensions of the male contact

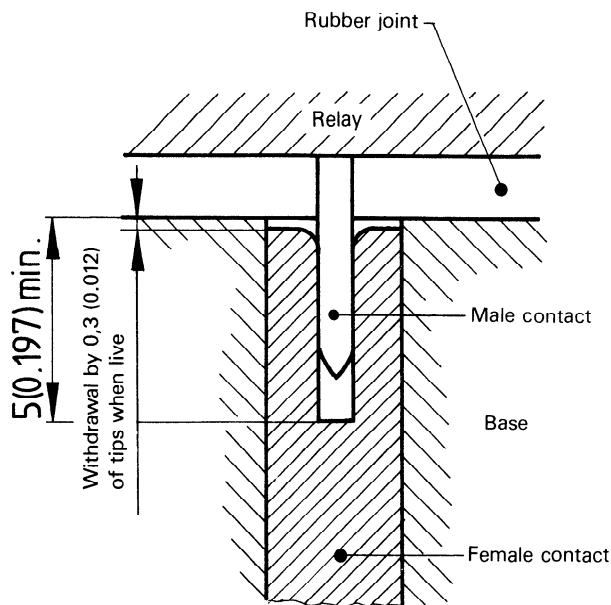


Figure 6 – Dimensions of the female contact

4.3 Holes in the support

The holes in the support, which enable two and four pole plug-in base relays to be received are shown in figures 7 and 8.

Dimensions in millimetres (Dimensions in inches in parentheses)

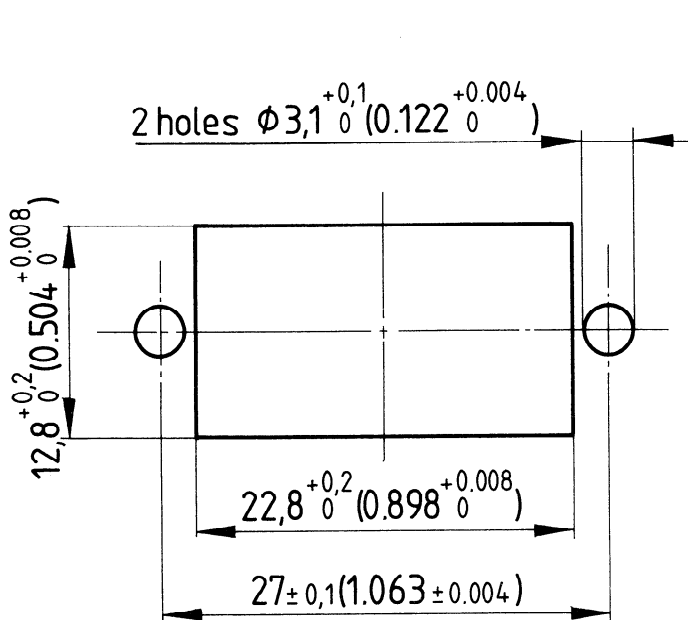


Figure 7 — Dimensions of holes in the support of two pole plug-in base relays

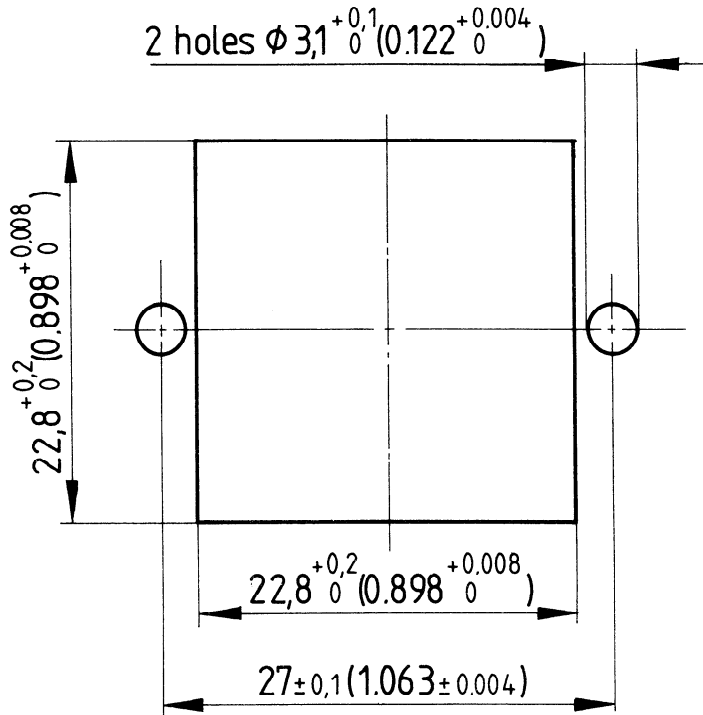


Figure 8 — Dimensions of holes in the support of four pole plug-in base relays

4.4 Connections for crimping

The connections are carried out using wires and contacts for crimping, the rear part of which, in accordance with figure 9, shall be capable of receiving wires with cross-sectional areas from 0,22 mm² to 0,60 mm² inclusive (sizes 20 to 24 inclusive).

The dimensions of the contacts are shown in figure 9 and specified in table 3.

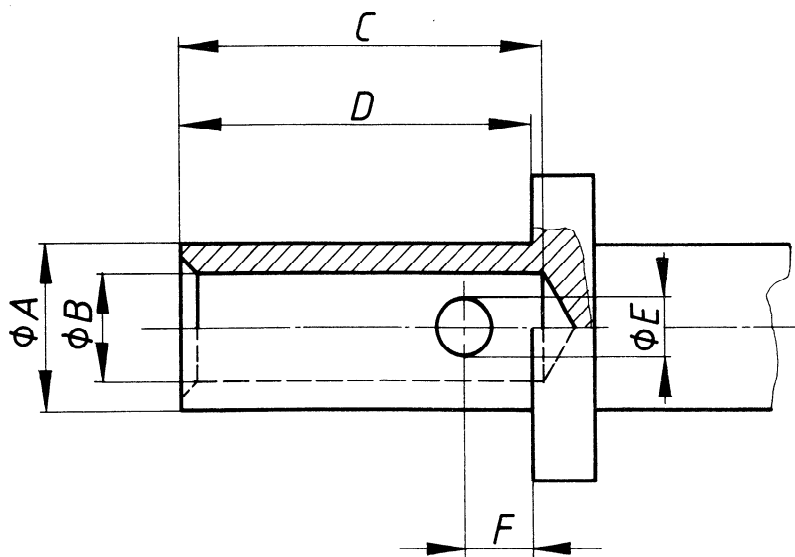


Figure 9 — Dimensions of the rear part of the connections for crimping

Table 3

Dimension	mm	in
<i>A</i>	1,98 $\begin{smallmatrix} 0 \\ -0,05 \end{smallmatrix}$	0.078 $\begin{smallmatrix} 0 \\ -0.002 \end{smallmatrix}$
<i>B</i>	1,22 $\begin{smallmatrix} +0,05 \\ 0 \end{smallmatrix}$	0.048 $\begin{smallmatrix} +0.002 \\ 0 \end{smallmatrix}$
<i>C</i>	4,37 ± 0,38	0.172 ± 0.015
<i>D</i>	4,22 ± 0,13	0.166 ± 0.005
<i>E</i>	0,80	0.031
<i>F</i>	0,50 ± 0,20	0.020 ± 0.008

5 Designation

Plug-in base relays, which conform to this International Standard shall be designated as shown in the example below :

Plug-in base relay type II - ISO5866 - A - 3A

The various elements which may be included in the designation of the plug-in base relays type II are defined as follows :

A : plug-in base relays with a device for the mechanical protection of the connections

S : plug-in base relays without a device for the mechanical protection of the connections

2A : 2 amperes

3A : 3 amperes

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