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CONNECTORS, AMPHENOL 133/143 SERIES

GENERAL AND TECHNICAL INFORMATION

BY COMMAND OF THE DEFENCE COUNCIL

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Prelim

AMENDMENT RECORD SHEET

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CONNECTORS, AMPHENOL 133/143 SERIES

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TABLES

ILLUSTRATIONS

LEADING PARTICULARS

Rating, voltage	600*V r.m.s. at sea level*
Rating, current	5 *amp.*
Contact resistance	25*mV at max. rated current*
Insulation resistance between contacts	5 *megohms*
Dielectric	*Diallyl phthalate*
Contact material—133	*Brass*
Contact material—143	*Phosphor bronze*
Contact plating	*Gold over silver*
Contact centres	0·156 *in.*
P.C. board thickness	0·054 *in. to* 0·070 *in.*
Temperature range	−60 *deg. C. to* +125 *deg. C.*

Introduction

1. Plugs of the 133 Series flush mount directly to printed circuit boards and are used where repeated insertion and withdrawal is required. The plugs mate with 143 Series receptacles, polarizing to prevent mismating being achieved by omitting a contact on the plug and inserting a key at the corresponding position in the receptacle. 143 Series receptacles can be used as direct mating connectors for printed circuit boards.

DESCRIPTION

133 Series plugs

2. The plugs are moulded of diallyl phthalate dielectric, the body being held rigidly together by the rolled over ends of cadmium-plated, brass guide pins. Provision is made for bolting to a printed circuit board, and cadmium-plated end plates prevent damage to the mounting holes when the mounting screws are tightened. The plugs are available in a choice of contact tail styles for different applications. Eleven tail styles are available to cater for single or double boards, and for alternative board orientations. A conventional eyelet style solder tail is included. A typical plug is shown at fig. 1.

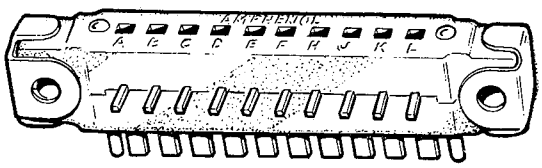

Fig. 1. Typical 133 Series plug

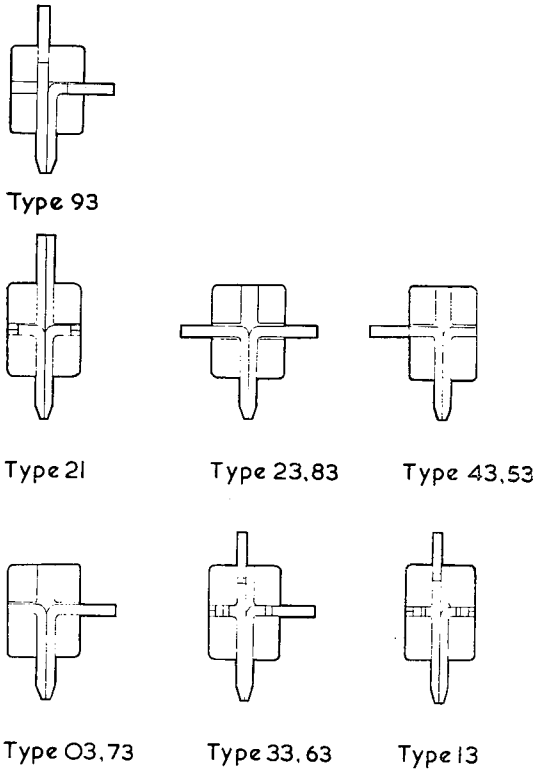

Fig. 2. 133 Series contact styles

Significance of part numbers

3. A typical part number is 133-010-21-1005. The significance of the component parts of this number is as follows:—

133	Series number
010	Number of contact positions, in this example 10. Alternatives are 006, 012, 015, 018, 022, 028 and 036
21	Style of contact (fig. 2)
1005	Omission of contact to engage with polarizing key (Table 1)

Note . . .

Where two numbers occur together in fig. 2 *the difference is in tail length only, the lower number has pin length* $\frac{5}{32}$ *in., the higher number a pin length* $\frac{1}{8}$ *in.*

143 Series receptacles

4. 143 Series receptacles are used in conjunction with printed circuit boards or with 133 Series plugs. A typical receptacle is illustrated at fig. 3 showing 18 contacts: alternative styles provide from 6 to 36 contacts.

5. The moulded diallyl phthalate body is flush mounting and incorporates tuning fork type contacts which will form-fit any 0·054 in. to 0·070 in. board. There is a wide range of effective contact accommodation, and excellent 'wiping action' even on printed circuit boards varying in thickness to both the low and high tolerance extremes. Nine

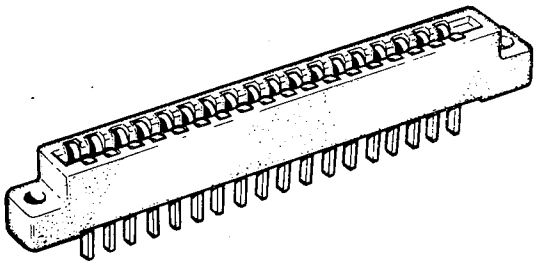

Fig. 3. Typical 143 Series receptacle

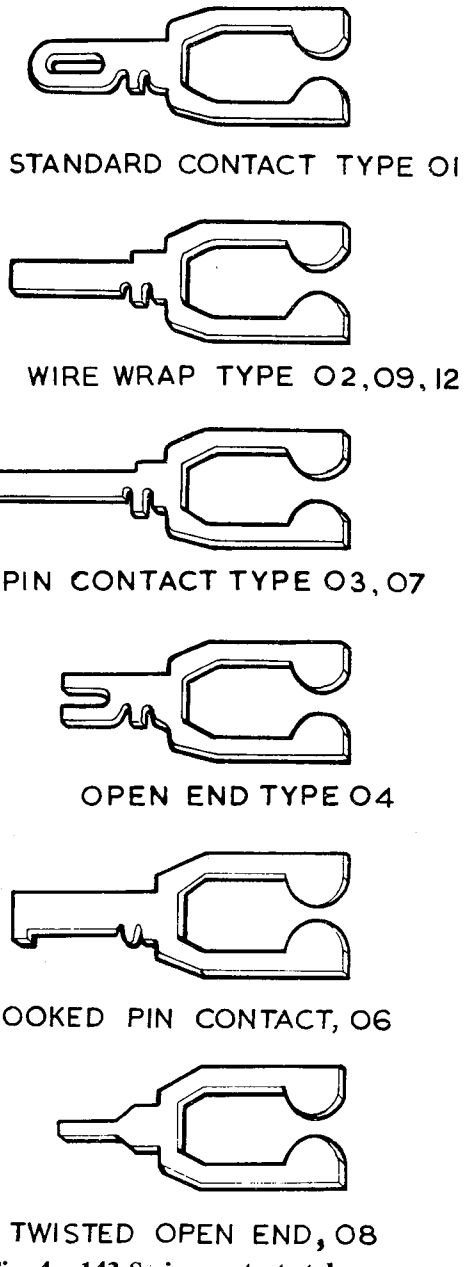

Fig. 4. 143 Series contact styles

styles of contact as illustrated at fig. 4 provide eyelet, dip solder and wire wrap tails. Where numbers occur together the difference is in tail length only, 02 and 07 have a tail $\frac{1}{4}$ in. long, 12 has tail length $\frac{15}{32}$ in. and 03 has a tail length $\frac{13}{32}$ in.

Significance of part numbers

6. A typical part number is 143-006-01-1005. The significance of the component parts of this number is as follows:—

143	Series number
006	Number of contact positions, in this example 6. Alternatives are 010, 012, 015, 018, 022, 028 and 036
01	Style of contact (fig. 4)

Insertion of polarizing key (Table 1)

101	Where present, indicates 0·0001 in. gold over copper contact plating

SERVICING

7. Servicing is restricted to a physical examination for damage to the contacts or the dielectric. Should cleaning be necessary, due to contamination with oil, grease, etc., any approved cleaning agent may be used, e.g. Inhibisol.

Contact resistance test

8. Contact resistance can be checked by measuring the mV drop across mated contacts with the full rated current flowing. Readings obtained should not be more than 25mV.

Insulation resistance test

9. Using a 500V insulation resistance tester measure the insulation resistance between adjacent contacts. The readings obtained should not be less than 5 megohms.

TABLE 1

Contact omission (133 Series)
Polarizing key location (143 Series)

A	1001—	P	1013—	c	1025—
B	1002—	R	1014—	d	1026—
C	1003—	S	1015—	e	1027—
D	1004—	T	1016—	f	1028—
E	1005—	U	1017—	g	1029—
F	1006—	V	1018—	h	1030—
H	1007—	W	1019—	j	1031—
J	1008—	X	1020—	k	1032—
K	1009—	Y	1021—	m	1033—
L	1010—	Z	1022—	n	1034—
M	1011—	a	1023—	p	1035—
N	1012—	b	1024—	r	1036—

TABLE 2

NATO and Stores Ref. Numbers

Part No.	NATO Stock No. or Stores Ref. No.
Plugs 133 Series	
133-015-21-(101)	5935-99-944-8634
133-015-43-1004-(101)	10H/24960
133-015-43-1006-(101)	10H/24959
1008	10H/24958
1010	10H/24957
1012	10H/24956
133-018-03	5935-99-580-7505
Receptacles 143 Series	
143-015-01-(101)	5935-99-947-8314
1004-(101)	7744
1006-(101)	7745
1008-(101)	8042
1010-(101)	8041
1012	8313
143-018-01	580-7504