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CONNECTORS, AMPHENOL, 165 SERIES (MINIATURE MS-TYPE)

GENERAL AND TECHNICAL INFORMATION

BY COMMAND OF THE DEFENCE COUNCIL

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Ministry of Defence

FOR USE IN THE

ROYAL NAVY

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AMENDMENT RECORD SHEET

To record the incorporation of an Amendment List in this publication, sign against the appropriate A.L. No. and insert the date of incorporation.

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AMPHENOL MINIATURE MS-TYPE CONNECTORS, 165 SERIES

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ILLUSTRATIONS

LEADING PARTICULARS

	VOLTAGE RATING		
Rating **	Mechanical Spacing (Nominal)	Recommended Working Voltage D.C.	A.C.
Sea level	A	700	500
	B	840	600

***RATING — B rating is for 5 — contact insert which has a higher voltage rating*
A rating is for the other inserts.

Wire sizes	0·080 *to* 0·113 *in. (size* 20 *contacts)*
	0·080 *to* 0·125 *in. (size* 16 *contacts)*
Contact plating	*Gold over silver*
Dielectric material	*Diallyl phthalate*
Standard shells	*Aluminium, chromium plated*
Temperature range	*−55 deg.C. to +125 deg.C.*
Bayonet thread lubricant	*MS4 Ref. No.* 33*C*/9424829
	*NATO. S-*736
Current rating, size 16 *contact*	17 *amp.*
*(MIL-C-*5015*) size* 20 *contact*	7·5 *amp.*
Millivolt drop at max. rated size 16 *contact*	21 *mV*
current. size 20 *contact*	14 *mV*

Introduction

1. The range of Amphenol connectors in the 165 Series (fig. 1) covers multi-contact miniature connectors of the quick-disconnect bayonet-lock type. The connectors are available as plugs, and cable and panel receptacles. Two shell sizes between them cover eight insert configurations with up to twenty-four contacts. Shell styles comprise plugs and cable mounting receptacles with cable sealing clamps for jacketed cable and panel mounting receptacles with exposed solder pockets. Cable mounting receptacles and plugs can be provided with facilities for potting to meet the pressure seal requirements of MIL-C-5015 Class C construction.

DESCRIPTION

2. The types available within the range make provision for fixed and free units with bayonet slots and pins of stainless steel. These stainless steel slots and pins reduce wear and frictional characteristics.

3. A spring-loaded coupling ring provides a positive locking action in the bayonet slot and a compensating force which eliminates permanent set in the resilient face seal.

4. The shells have a single polarizing key to simplify mating. Mismating of adjacent connectors is avoided by rotating the insert with respect to the shell as detailed in paragraph 10.

Free units

5. A free plug will mate with the corresponding free or fixed receptacle. Free units are provided with either a cable clamp for jacketed cable or a potting mould. Units may have either pin contacts (exposed) or socket contacts (shrouded) so that the live side of the connection may always be made to shrouded contacts.

Fixed units

6. Fixed receptacles are available with square flange mounting and exposed solder pockets.

Accessories

7. Expendable dust caps are available for both plugs and receptacles in large and small sizes. Part numbers are as follows:—

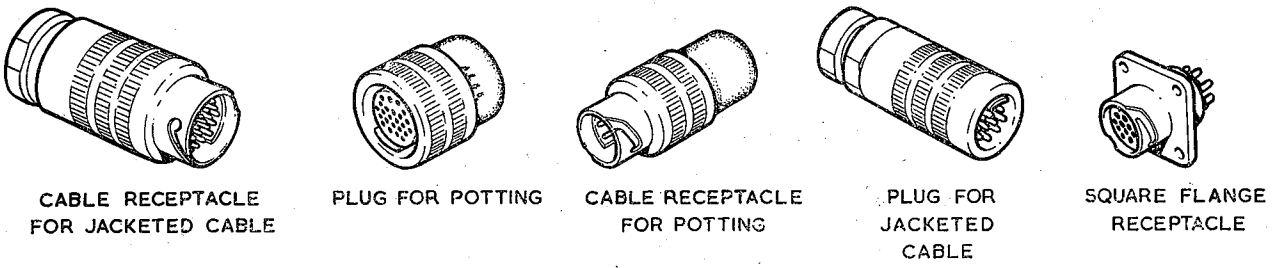


Fig. 1. Shell styles

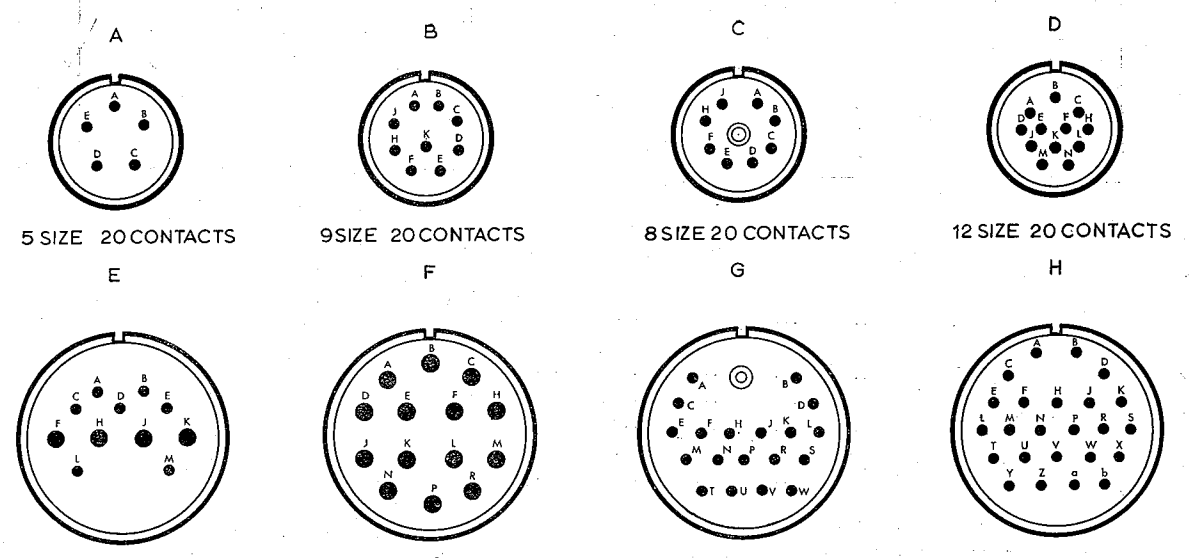


Fig. 2. Insert sizes and contact arrangements

Amphenol Part Numbers (Dust caps)

Connector	Plug	Receptacle
Large	165-636	165-634
Small	165-655	165-656

Contacts and insulation

8. The contacts are gold plated over silver plated brass and are located in a hard dialyl phahalate insert which has a high impact strength and good dielectric properties. The hard insert dielectric positively retains the contacts, whilst a resilient face seal gasket having individual barriers isolates each contact. Socket contacts are hooded to resist test prod damage.

Contact arrangements

9. The full range of contact arrangements and insert sizes is shown in Fig. 2.

Orientation of insert moulding

10. To avoid mismating of adjacent connectors, provision has been made for the inserts of the connectors to be assembled in alternative positions X and W as shown in Fig. 3.

Significance of part numbers

11. There is no set pattern in this range of connectors to tie the part number to the shell style and contact arrangement. Table 1 in conjunction with fig. 2 will enable the part no. to be determined from the shell style and contact arrangement information.

SERVICING

12. 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. trichlorethane, Ref. No. 33D/452.

Contact resistance

13. Contact resistance can be checked by measuring the mV drop across mated contacts with the full rated current flowing. Readings obtained should not exceed the values given in the leading particulars.

Insulation resistance

14. Using a 500V insulation resistance tester Type A, Ref. No. 5G/1621, measure the insulation resistance between adjacent contacts. The readings obtained should be not less than 5 megohms.

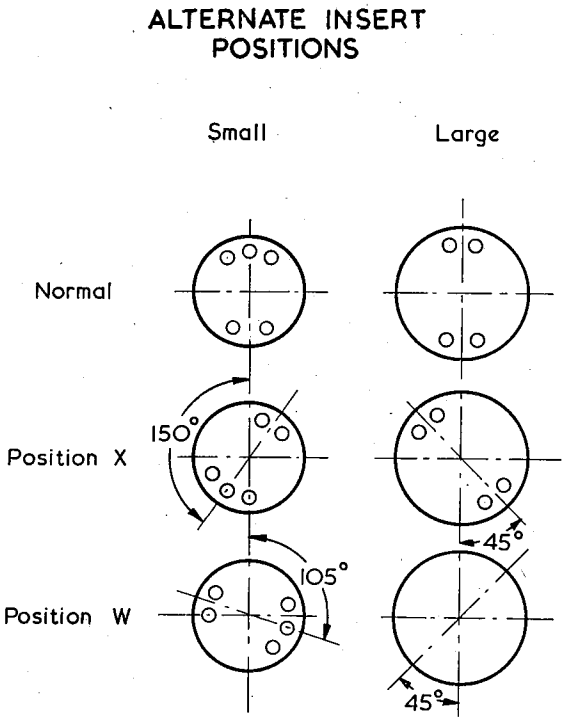
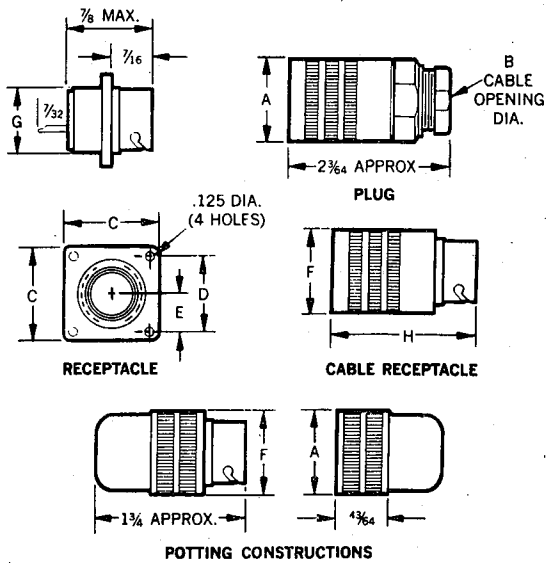


Fig. 3. Alternative insert orientations



	A	B	C	D	E	F	G
Small	57/64	3/8	1 1/16	25/32	25/64	7/8	13/16
Large	1 9/64	21/32	1 5/16	31/32	31/64	1 1/8	1 1/16

Fig. 4. Dimensions of shell styles

TABLE 1
Part number significance

Insert reference see figure 3	Insert Style	Plug	Sq. Flange Receptacle	Cable Receptacle	Plug	Receptacles Cable
A	PINS	165-33	165-35	165-35-1002	165-33-1000	165-35-1000
	SOCKETS	165-34	165-36	165-36-1003	165-34-1000	165-36-1000
B	PINS	165-13	165-15	165-15-1002	165-13-1000	165-15-1000
	SOCKETS	165-14	165-16	165-16-1003	165-14-1000	165-16-1000
C	PINS	165-82	165-73	165-73-1001	165-82-1000	165-73-1000
	SOCKETS	165-61-1008	165-83	165-83-1001	165-61	165-83-1000
D	PINS	165-9	165-11	165-11-1002	165-9-1000	165-11-1000
	SOCKETS	165-10	165-12	165-12-1002	165-10-1000	165-12-1000
E	PINS	165-17	165-19	165-19-1002	165-17-1000	165-19-1000
	SOCKETS	165-18	165-20	165-20-1003	165-18-1000	165-20-1000
F	PINS	165-29	165-31	165-31-1003	165-29-1000	165-31-1000
	SOCKETS	165-30	165-32	165-32-1006	165-30-1000	165-32-1000
G	PINS	165-86	165-84	165-84-1001	165-86-1000	165-84-1000
	SOCKETS	165-62-1007	165-85	165-85-1001	165-62	165-85-1000
H	PINS	165-25	165-27	165-27-1005	165-25-1000	165-27-1000
	SOCKETS	165-26	165-28	165-28-1003	165-26-1000	165-28-1000

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