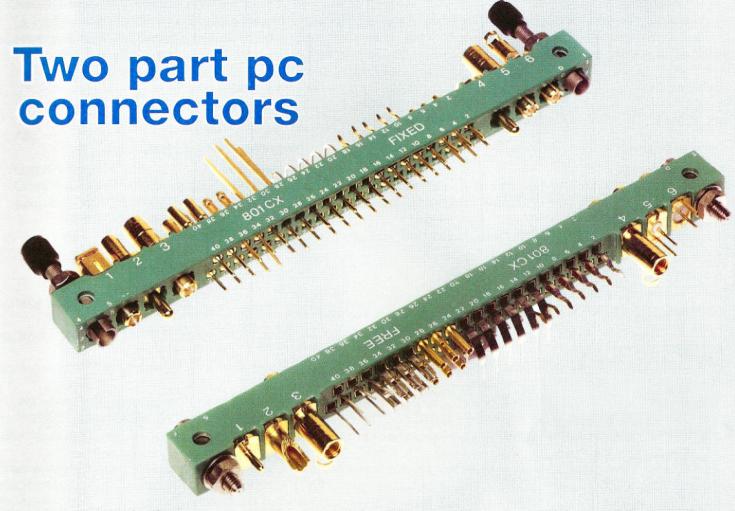
# **801/801CX SERIES**



The 801 and 801CX Series two part printed circuit board connector system utilising a 1.27mm (0.05in.) staggered pitch with 2.54mm (0.1in.) between rows has been designed to satisfy the latest requirements of various UK and international standards including BS9525 F0006, BS9525 F0012, BS9525 F0027, BS9525 F0041, NFC 93-424 (HE 801 and HE 807), MIL-C-55302 and approved to BS9525 N0001.

#### Features include:

- Low and high frequency contacts.
- Low and high power contacts.
- 19 mould sizes up to 96 way l.f. and either 53 + 3 or 41 + 6 l.f./h.f.
- I.f. terminations include solder, p.c. straight and 90°, crimp and wire wrapping.
- h.f. terminations include solder straight and 90° preserved impedance, twisted cable and p.c. straight and 90°.
- All contacts removeable.
- Polarising facilities I.f. 36 position h.f. 36 or 16 positions.
- Jacking facilities, including 1/4 turn locks.
- Covers and pin shrouds.
- Qualification approval to BS9525 N0001.
- Additional random vibration with superimposed gunfire with low ns interrupt times.



# ASSEMBLING STOCKIST DISTRIBUTOR F. C. LANE ELECTRONICS LIMITED

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#### TECHNICAL DATA

HIGH POWER AND HIGH FREQUENCY MATERIALS LOW FREQUENCY

Diallyl-phthalate Moulds

Plug contacts High grade copper alloy High Power Brass Co-axial Plug (inner) Brass

Beryllium Copper Plug (outer)

Socket contacts High grade copper alloy High Power Ph Bronze Co-axial Socket (inner) Beryllium Copper

Brass Socket (outer) Insulators p.t.f.e.

High grade copper alloy Retention clips

Guides Stainless steel or brass nickel plated

Cover Glass-filled polycarbonate Glass-filled nylon Cover cable clamp Cover jackscrews Stainless steel

Hard Acid Gold PLATING\* (L.F. AND H.F. CONTACTS)

For applications in severe climatic NG \*NOTE:

environments For replacement purposes previous plating codes, i.e. (BS9525 N0001) XG, SG, BO Series are still

MG For applications requiring conformity to MIL-C-55302

**ELECTRICAL** 

Current

available.

High Power At 85°C 15A max At 85°C 1.5A max Individual Contact (in isolation) High Power All contacts simultaneously At 25°C 3A max

At 25°C 25A max At 85°C 10A max At 85°C 1A max At 125°C 0.3A max Co-axial At 85°C 0.5A max

250V d.c. or a.c. peak Working Voltage sea-level (1013 mbar) 1000V d.c. or a.c. peak sea-level (1013 mbar) Proof voltage

250V d.c. or a.c. peak 8500m (300 mbar)

 $10m\Omega$  max High Power  $1.5 \text{m}\Omega$  max (initially) Contact resistance

Co-axial inner  $12m\Omega$  max, outer  $6m\Omega$  max

3.0m $\Omega$  max (after conditioning)  $15m\Omega$  max High power Co-axial inner  $16m\Omega$  max, outer  $8m\Omega$  max

 $5G\Omega$  min (at 500V) Insulation resistance (initially)  $100M\Omega$  min (after conditioning)

Frequency Range 0-500MHz

 $50\Omega$  nom Impedance

0.13 max (preserved impedance Reflection Co-efficient

10-500MHz)

Co-axial inner 0.15N min, outer 0.3N min

**ENVIRONMENTAL** 

55/125/56 Environmental Classification:

10Hz to 2000Hz, 0.75mm/98m/s2 (10gn) duration 6h. Vibration Severity - General

Vibration Severity - Additional 13.3Hz to 2000Hz random with superimposed sinusoids, duration 15min in each of 4 planes.

No intermittancies measured when using an H.S.L.I. (High Speed Logic interrupt) detector with a trip threshold of 2 ns.

390m/s2 (40gn), 4000 ±10 bumps. Bump Severity: 981 m/s2 (100gn), for 6ms. Shock Severity:

490m/s2 (50gn). Acceleration Severity:

MECHANICAL

500 operations Mechanical Endurance

5N max, 1N min 1N max 0.2N min High Power Engaging and Separation Force 10N max, 2N min Co-axial

(per contact pair) 50N

Contact Retention (in moulding) 20N (wire wrapping 30N) 0.15N mn High Power 0.4N min Contact holding force

NOTE: Dimensions throughout this catalogue are shown in millimetres and are maxima unless stated otherwise.

#### Guiding System (See pages 8 to 11)

The 801 and 801CX Series of two part p.c. connectors incorporate a wide choice of polarising and guiding facilities. Since their original introduction these facilities have been extended and improved such that currently the following options are available:

(a) Hexagonal

I.f. and combined I.f./h.f. connectors with polarised guides which can be orientated to any one of six angular positions of 60°. This permits a choice of 36 positions for each connector. Connectors fitted with 72, 84 or 96 I.f. contacts have an additional central guide, normally plain but a polarised guide may also be fitted which in these sizes provides 216 polarising positions.

Alternatively, the complete range of connectors may be fitted with unpolarised guides, jack screws or quarter turn locking guides, the latter having four preferred polarising positions, namely F6, D2, C5, and A5.

(b) Quadrangular

Combined I.f./h.f. connectors with polarised guides which can be orientated to any one of four angular positions of 90°. This permits a choice of 16 positions for each connector.

Alternatively the complete range of connectors may be fitted with unpolarised guides or jack screws.

#### Connector Styles and Contact Cavity Indentification

Style and contact identification is determined by the application of Fixed or Free to the connector.

Where option (a) is chosen, i.e., hexagonal guides are used the following definitions are applicable.

A **Fixed** connector is rack or mother board mounted, has **female guides** and male or female contacts. The l.f. contact cavity identification is by numbers from **right to left** and (where fitted) h.f. contact cavity identification is by numbers from left to right. This applies when viewing the mating face with the reference plane at the base.

A Free connector is cable or daughter board mounted, has male guides and male or female contacts. The l.f. contact cavity identification is by numbers from left to right and (where fitted) h.f. contact cavity identification is by numbers from right to left. This also applies when viewing the mating face with the reference plane at the base.

A Coupler connector replaces a Fixed connector in a daughter-to-daughter board mounted application has female guides and male or female contacts. The l.f. contact cavity identification is by numbers from right to left and (where fitted) h.f. contact identification is by numbers from left to right. This similarly applies when viewing the mating face with the reference plane at the base.

Connectors are supplied with guides polarised at positions A and 1 or quarter turn locking guides polarised at positions F and 6 in the unlocked condition.

The above are the preferred styles but connectors can also be supplied with **male** guides in **fixed** connectors and **female** guides in **free** connectors. These are **reverse** contact identification and are non-preferred.

Where option (b) is chosen, i.e. quadrangular guides are used in combined l.f./h.f. connectors the following definitions are applicable.

A **Fixed** connector is fitted with **male** l.f. and h.f. **contacts** and either male or female guides. The l.f. contact cavity identification is by numbers from **right to left** and h.f. contact cavity identification is by numbers from left to right. This applies as previously when viewing the mating face with the reference plane at the base.

A Free connector is fitted with **female** l.f. and h.f. **contacts** and either male or female guides. The l.f. contact cavity identification is by numbers from **left to right** and h.f. contact cavity identification is by numbers from right to left. This again applies when viewing the mating face with the reference plane at the base.

A Coupler connector is fitted and marked the same way as a Fixed connector. Guides are fitted polarised at positions A and 1.

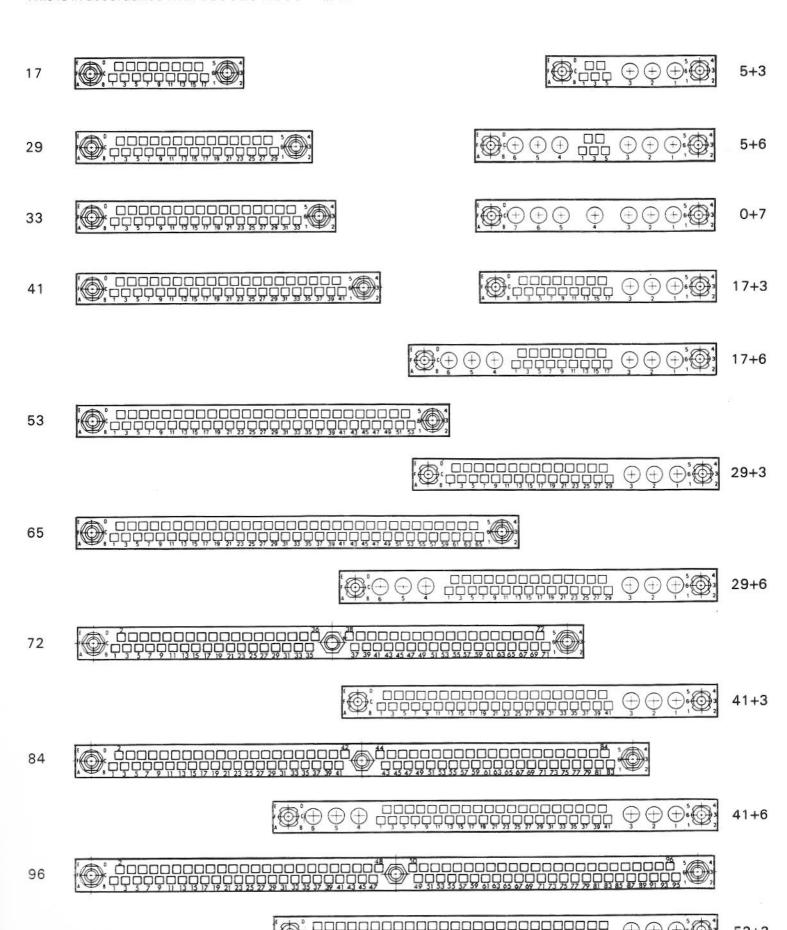
When combined l.f./h.f. connectors are used all contacts in a connector half should be of the same gender.

#### **MOULD SIZES**

#### Low and Combined Low and High Frequency (Hexagonal Guiding)

The contact identification of mouldings as illustrated applies to **Free** male and female connectors viewed on the mating face in that all Free l.f. contacts are numbered from the left hand end and all Free h.f. contacts are numbered from the right hand end. **Fixed** connectors are a mirror image of the Free connector.

This is in accordance with BS9525 N0001 Issue 2.

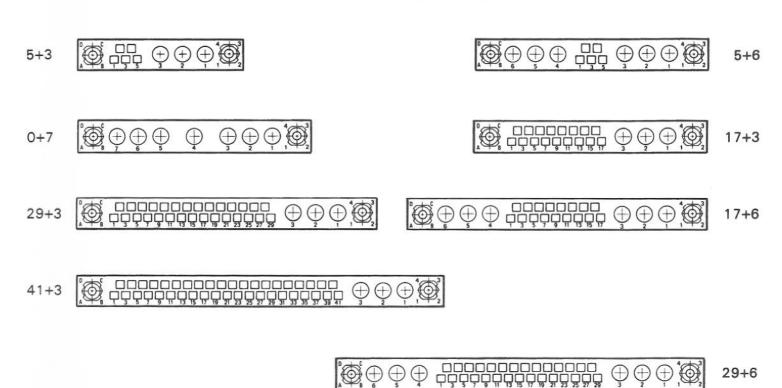


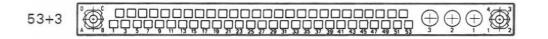
53 + 3

#### Combined Low and High Frequency (Quadrangular Guiding)

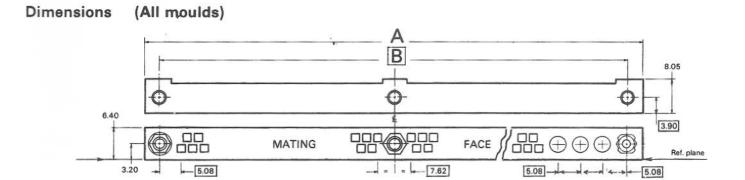
The contact identification of mouldings as illustrated applies to **Free** female connectors viewed on the mating face in that l.f. contacts are numbered from the left hand end and h.f. contacts are numbered from the right hand end. **Fixed** male connectors are a mirror image of the Free connector.

This is in accordance with BS9525 F0012, NFC 93-424 (HE 807) and MIL-C-55302.









	17	29	33	41	53	65	72	84	96
	5+3	17+3 5+6 0+7		29+3 17+6	41+3 29+6	53+3 41+6			
А	38.5	53.7	58.8	69.0	84.2	99.5	114.7	129.9	145.2
В	30.48	45.72	50.80	60.96	76.20	91.44	106.68	121.92	137.16

Male (M)

YF Male and female contacts with tails at YM 90° direct mounting on to p.c.b. Suitable 8.05for individual or flow soldering. 3.6 2.54 2.54 BS Termination Style 'L' Post 0.2 x 0.53 nom WFO W Male and female contacts with 0.6mm (0.025") square miniwrap tails suitable -14.5for up to 3 wraps of 30 a.w.g. wire. WFO6 BS Termination Style 'W' L = 6.0Male and female contacts with solder **ZFO** Z tails suitable for wire dia. up to 1 mm. - 5.4---- 8.05-BS Termination Style 'S' Crimp type male and female contacts for SMF SM wire 22-26 a.w.g. -- 8.05-BS Termination Style 'C' Male and female contacts with p.c. **YBMO** YCMO Y -4.5----8.05----4.8straight tails for direct mounting onto L = 4.5L = 5.6-8.05p.c.b.'s. Suitable for individual or flow **Y4** YBM4 soldering. L = 4.0L = 4.0YCMO an alternative to YBMO with 2.54 turned termination. Post 0.2 x 0.53 nom. YBMO Ø0.5 YCMO BS Termination Style 'T' Male and female contacts for mounting **DFM** DM edge-on double-sided p.c.b.'s. The centre of the board is on the centre line of -3.4connector. BS-Termination Style 'V' **POWER TERMINATIONS** Female (F) Male (M) FH<sub>1</sub> Male and female power contacts with MH<sub>1</sub> solder termination. Suitable for wire dia. up to 1.83mm (size 14). FH<sub>2</sub> Male and female power contacts with MH<sub>2</sub> straight p.c.b. termination.

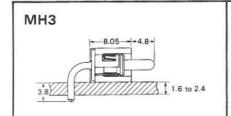
Current rating 5A @ 85°C.

Female (F)

#### POWER TERMINATIONS

Male (M)

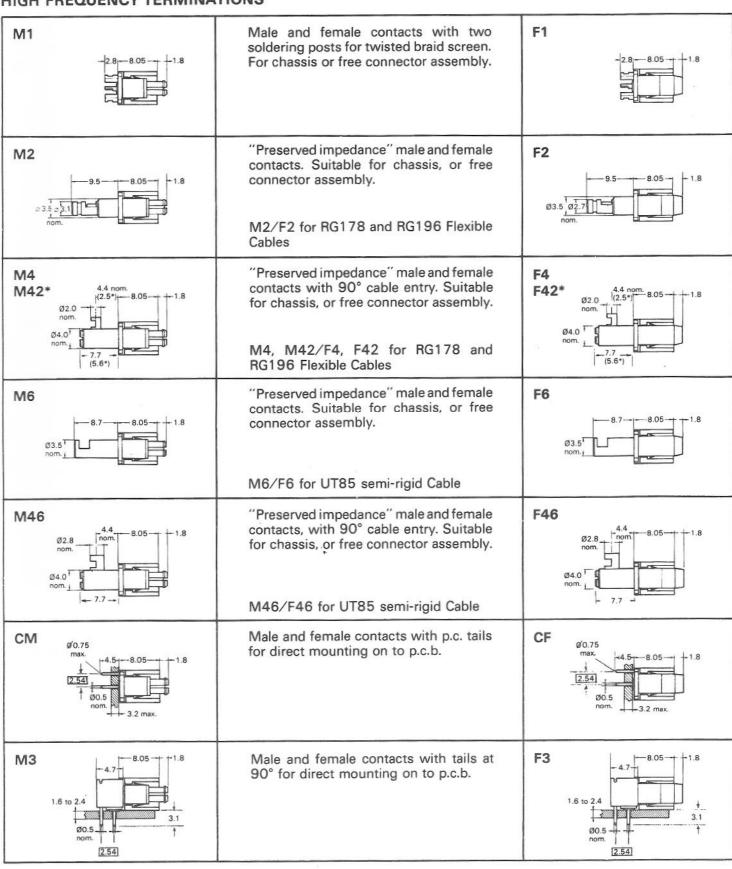
Female (F)



Male and female power contacts with 90° p.c.b. terminations. Current rating 5A @ 85°C.

3.8 11.6 to 2.4

#### HIGH FREQUENCY TERMINATIONS



#### GUIDES FOR L.F. AND L.F./H.F. CONNECTORS

Hexagonal guides may be fitted to l.f. or combined l.f./h.f. connectors. Quadrangular guides can only be fitted to combined l.f./h.f. connectors and are prefixed 'C'.

Hexagonal & Quadrangular guides do not intermate.

When ordering guides which are available in stainless steel add suffix 'S' to part number (see order codes page 16).

Connectors are normally supplied with polarising in position A & 1 except 1/4 turn locking hexagonal guides which are polarised in position F & 6 in the unlocked position.

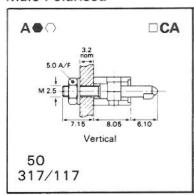
#### \* -GUIDE STYLE→ \*\*

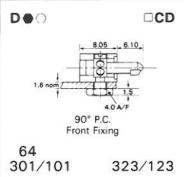
- HEXAGONAL STAINLESS BS CODES 0 AND 4
- HEXAGONAL NICKEL PLATED BS CODES 1 AND 5
- QUADRANGULAR NICKEL PLATED

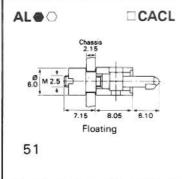
#### GUIDE REF. NOS.

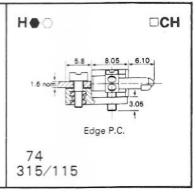
00 - BS9525 N0001 Iss. 2 000/000 - NF-C93-424 (1981) Stainless Steel/Brass

#### Male Polarised

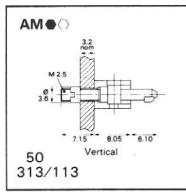


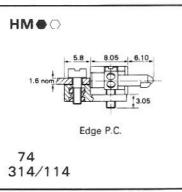


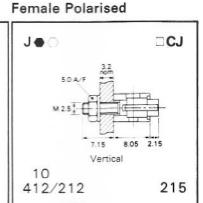


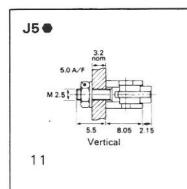


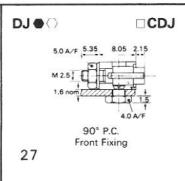
#### Male Polarised (Centre Only)

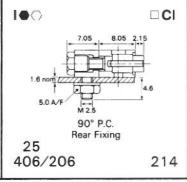


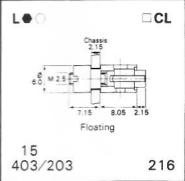




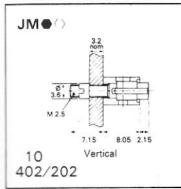


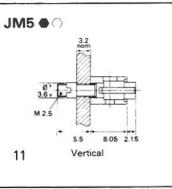


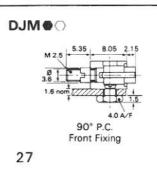


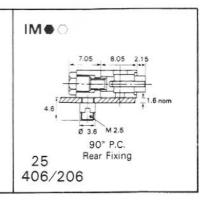


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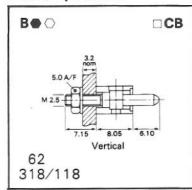


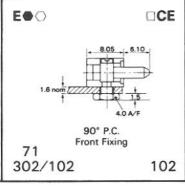


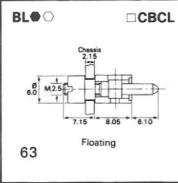


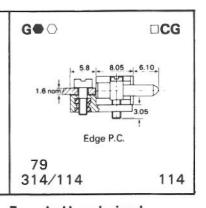


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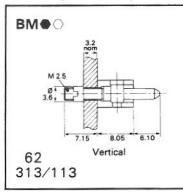


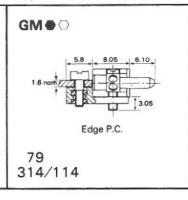


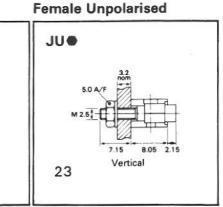




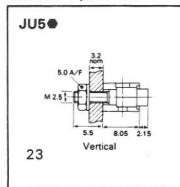
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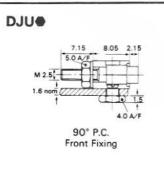


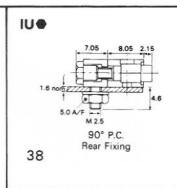


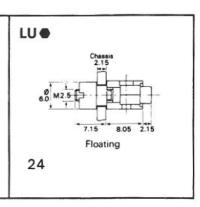


#### Female Unpolarised

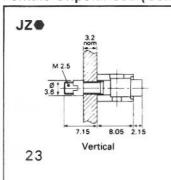


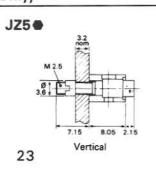


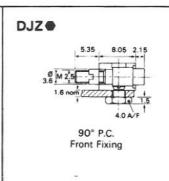


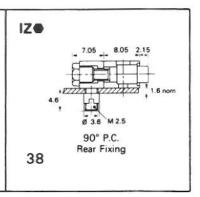


#### Female Unpolarised (Centre Only)

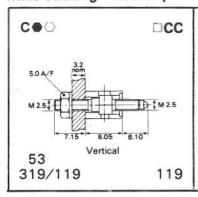


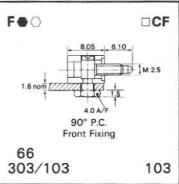


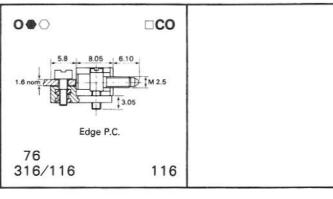




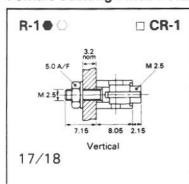
#### Male Jacking Fixed Unpolarised

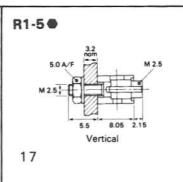






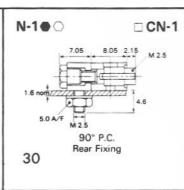
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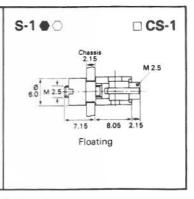




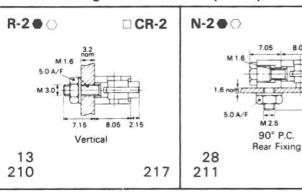
□CN-2

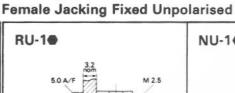
218

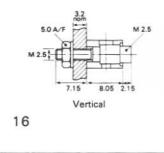


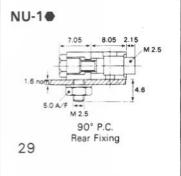


#### Female Jacking Fixed Polarised (Cover)

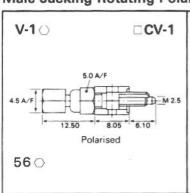


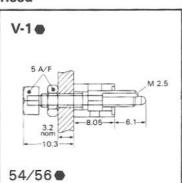




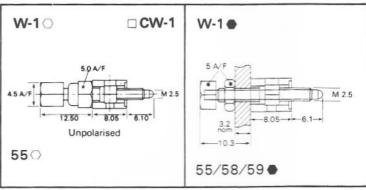


#### Male Jacking Rotating Polarised

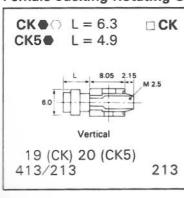


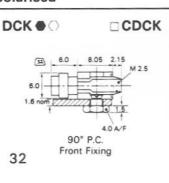


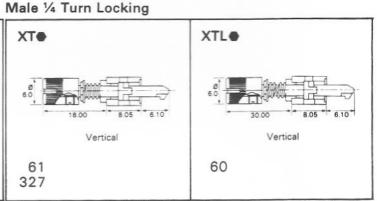
## Male Jacking Rotating Unpolarised



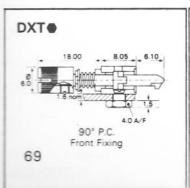
#### Female Jacking Rotating Unpolarised

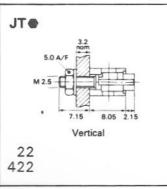


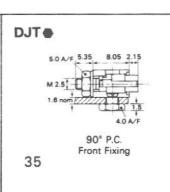


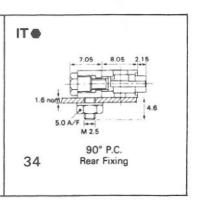


#### Female 1/4 Turn Locking

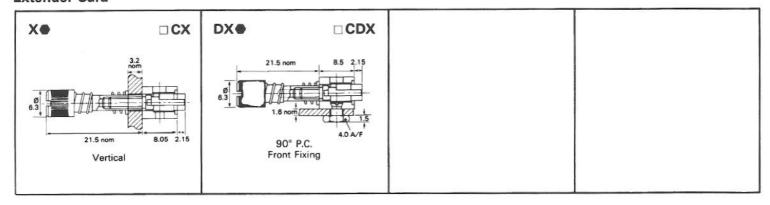








#### **Extender Card**

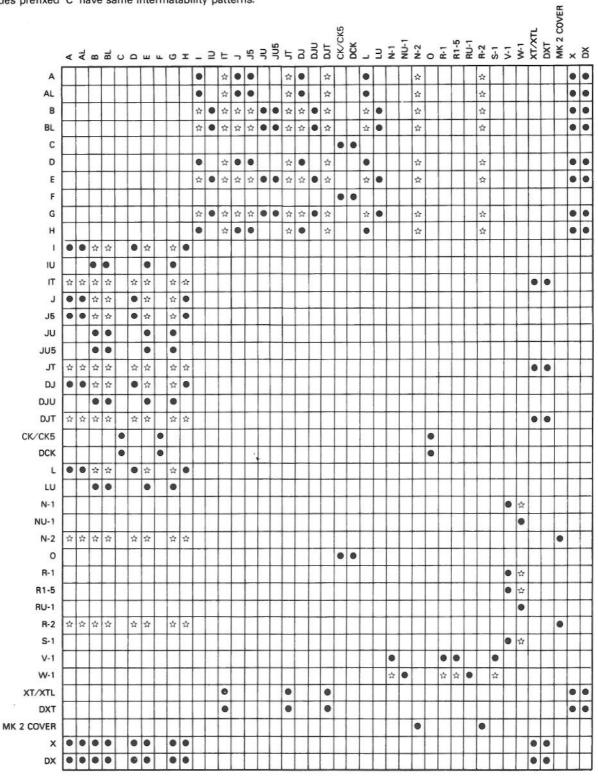


#### **GUIDE INTERMATABILITY CHART**

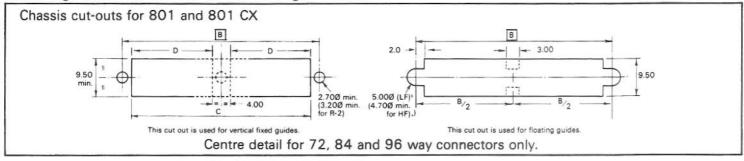
Preferred.

☆ Will mate but non preferred.

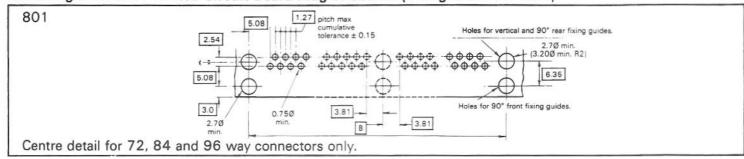
NOTE: h.f. guides prefixed 'C' have same intermatability patterns.



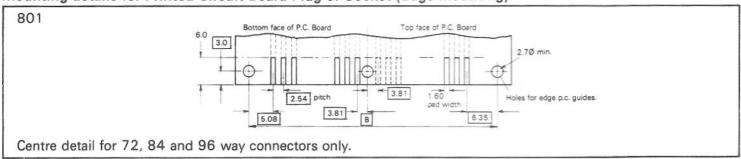
#### Mounting details for Chassis Mounted Plug or Socket



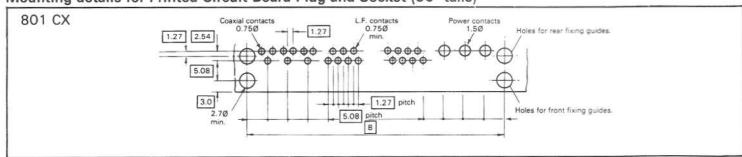
#### Mounting details for Printed Circuit Board Plug or Socket (Straight and 90° tails)



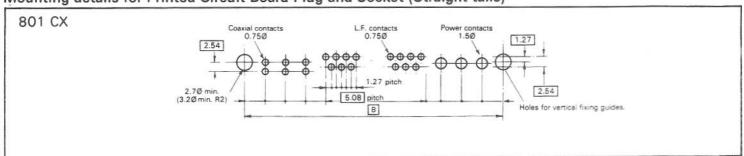
#### Mounting details for Printed Circuit Board Plug or Socket (Edge mounting)



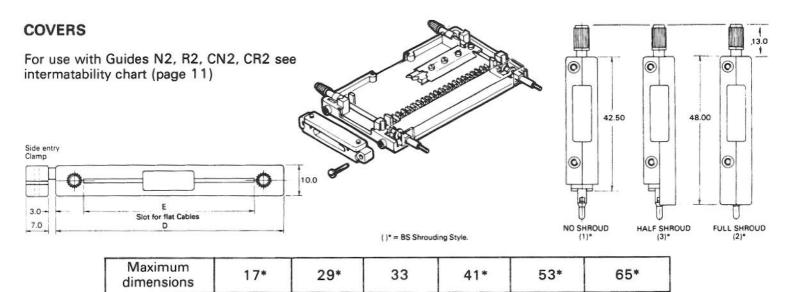
#### Mounting details for Printed Circuit Board Plug and Socket (90° tails)



#### Mounting details for Printed Circuit Board Plug and Socket (Straight tails)



	17	29	33	41	53	65	72	84	96
	5+3	17+3 5+6 0+7		29+3 17+6	41+3 29+6	53+3 41+6			
В	30.48	45.72	50.80	60.96	76.20	91.44	106.68	121.92	137.16
CMIN	25.90	41.10	46.26	56.40	71.60	86.90	102.10	117.30	132.60
D MIN							49.05	56.65	64.30



\*Including equivalent combined l.f./h.f. sizes (see order codes page 16)

The Mk 2 connector covers offer the advantages of the following facilities:

57.70

41.00

- 1. Top (T) or side (S) cable entry (with cable clamp).
- 2. Flat cable top entry.

D

E

3. Full pin shroud/partial pin shroud for p.c.b. interfacing/no pin shroud, as required.

63.00

46.10

73.00

56.30

88.20

71.50

103.50

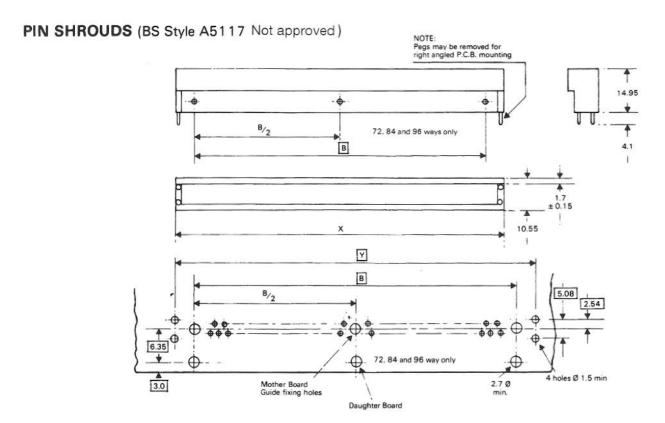
86.80

4. May be stacked on a 10.16mm pitch.

42.50

25.80

5. May be used with l.f. and h.f. contacts.



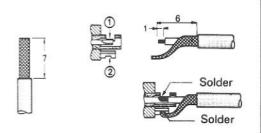
SIZE	В	X	Y
17 WAY	30.48	42.65	40.64
29 WAY	45.72	57.85	55.88
33 WAY	50.80	62.95	60.96
41 WAY	60.95	73.15	71.12
53 WAY	76.20	88.35	86.36
65 WAY	91.44	103.65	101.60
72 WAY	106.68	118.85	116.84
84 WAY	121.92	134.05	132.08
96 WAY	137.16	149.35	147.32

For p.c.b. mounting, when cross holes cannot be utilised for attachment of pin protector to body, pegs to be inserted into p.c.b. and secured by applying sufficient heat and pressure to spread end of pegs.

Note: Each pin shroud is supplied as a kit comprising the mould, 2 longer replacement screws and fitting instructions.

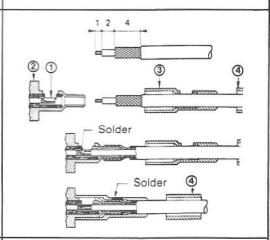
#### **TERMINATION STYLE M1 AND F1**

- 1 Prepare Cable as shown
- 2 Solder the Core of the Cable to the Inner Contact ① of the Connector
- 3 Solder the Screen of the Cable to the Connector Body 2



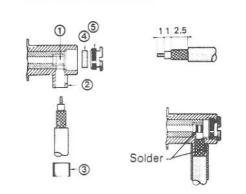
#### **TERMINATION STYLE M2 AND F2**

- 1 Prepare Cable as shown
- 2 Fit Heat Shrink Sleeve @ and Cap @ over Cable
- 3 Fit Core of Cable into Inner Contact ① and Cable Screen over Outer Connector Body ②
- 4 Solder the Cable Core to Contact (1)
- 5 Push Cap (3) over Cable Screen
- 6 Solder Cap 3 and Cable Screen
- 7 Shrink Sleeve @ over Cap @ and Cable



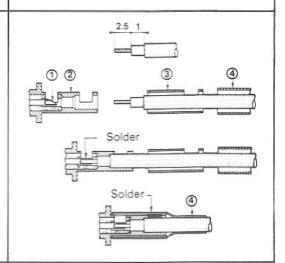
#### TERMINATION STYLE M4, M42 AND F4, F42

- 1 Prepare Cable as shown
- 2 Fit Heat Shrink Sleeve 3 over Cable
- 3 Push Cable fully into Connector Solder Cable Core to Inner Contact ①, and Cable Screen to Connector Body ②
- 4 Push Insulator Pad (4) into Back of Connector Body, and assemble Retaining Screw (5)
- 5 Shrink Sleeve 3 over Connector and Cable



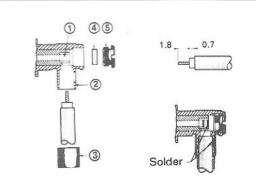
#### **TERMINATION STYLE M6 AND F6**

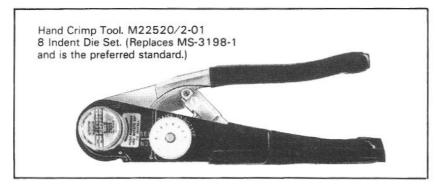
- 1 Prepare Cable as shown
- 2 Fit Heat Shrink Sleeve @ and Sleeve @ over Cable
- 3 Push Cable into Body (2)
- 4 Solder Cable Core to Inner Contact 1
- 5 Push Sleeve ③ over Cable until it is against Shoulder of Body ② and Solder
- 6 Shrink Sleeve 4 over Connector and Cable

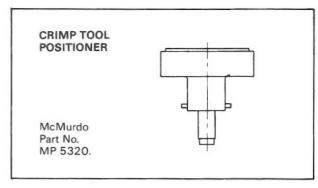


#### **TERMINATION STYLE M46 AND F46**

- 1 Prepare Cable as shown
- 2 Fit Heat Shrink Sleeve (3) over Cable
- 3 Push Cable fully into Connector Solder Cable Core to Inner Contact ① and Cable Outer to Connector Body ②
- 4 Push Insulator Pad (4) into Back of Connector Body, and assemble Retaining Screw (5)
- 5 Shrink Sleeve (3) over Connector and Cable







Contact	Wire S	Wire			
Style	22 A.W.G.	24 A.W.G.	26 A.W.G.	Strip Length	
S (Non BS style)	6	-	-	4.0	
SM	6	5	4	4.0	
SF (Non BS style)	6	_	-	4.0	
SMF	5	4	3	4.0	





#### QUALITY ASSURANCE

Indent check inspection kit available from Erma-Buchanan part number M22520/3-1 (in Service Gauge).

#### ORDER CODES

	1	2	3	4	5	6	7	8	9	10	
(a)	801	M	72	FREE	YM	NG	D	(E)	(Not l.f.)	(Not I.f.)	
(b)	801 CX	F	41+3	FIXED	YBMO	NG	JS	(Not h.f.)	2M3	1FHI	
(c)	801 CX	F	41+3	(Not used)	YBMO	FG	CJ	(Not h.f.)	2M3	1FHI	
											Number and Type of h.p. contacts Number and Type of h.f. contacts Centre Guide Type Guide Type Contact plating Type of l.f. contacts Marking Number of contacts Gender of molding Series Type

#### Example of relationship Part Nos. to BS9525 N0001 Iss 2 Part Nos.

BS Part No.	B5101	072	М	L	64	1
Definition No.	4	3	2	5	7 (8)	7 (8)
Catalogue Reference - Page	3	4 and 5	3	6	3 and	8 to 10

#### DEFINITION

Series type: (a) 801 l.f. Hexagonal Guides (BS9525 N0001 Approved)

(b) 801 CX Combined I.f./h.f. Hexagonal Guides (BS9525 F0027 Style)

(c) 801 CX Combined I.f./h.f. Quadrangular Guides (BS9525 F0012 Style)

M takes male l.f. contacts F takes female l.f. contacts Gender of moulding: Note: Hexagonal guide styles, all contacts should be the same gender.

Quadrangular guide styles, h.f. and high power contacts may be the same or opposite gender.

3 See page 4 and 5 for Mould sizes

- See page 3 for definition of fixed or free (BS 9525 N0001 ISS2, B5100 = fixed, B5101 = free) Note: For Quadrangular guided combined I.f./h.f. connectors it is not necessary to identify fixed or free as gender of moulding determines marking.
- Type of I.f. contact: See page 6 for termination styles
- Contact plating: NG, FG or MG See Technical Data page 2.
- Guide type: See page 3 and pages 8 to 10
- Centre Guide type: 72, 84 and 96 way l.f. connectors only Note: For guide styles available in stainless steel ADD suffix 'S' to part no. e.g. JS (ES)
- Number and type of h.f. contacts (supplied loose):

See page 7

10 Number and type of High Power Contacts (supplied loose): See page 7

#### ACCESSORIES

#### **HOOD ORDER CODES**

Mould Size	h.f.	5+3	17+3 5+6 0+7		29+3 17+6	41+3 29+6	53+3 41+6
	l.f.	17	29	33	41	53	65
Full Pin Shro	oud	5401/3	5402/3	5403/3	5404/3	5405/3	5406/3
Half Pin Shr	oud*	5401/2	5402/2	5403/2	5404/2	5405/2	5406/2
No Pin Shro	ud	5401/1	5402/1	5403/1	5404/1	5405/1	5406/1

For Top entry ADD suffix T e.g. 5405/3/T For Side entry ADD suffix S e.g. 5404/3/S

#### SHROUD KITS

SIZE	ORDER CODE
17 WAY	MP5335 - 17
29 WAY	MP5335 - 29
33 WAY	MP5335 - 33
41 WAY	MP5335 - 41
53 WAY	MP5335 - 53
65 WAY	MP5335 - 65
72 WAY	MP5335 - 72
84 WAY	MP5335 - 84
96 WAY	MP5335 - 96

FOR TOOL ORDER CODES REFER TO PAGE 15



## ASSEMBLING STOCKIST DISTRIBUTOR F. C. LANE ELECTRONICS LIMITED

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For use with quadrangular guided connectors add prefix CX e.g. CX 5402/3/T \*For reversed version of Half Pin Shroud illustrated on page 13 ADD suffix 'A' e.g. 5403/2A/T.