## Insert Arrangements

TB Series • MIL-DTL-38999 Series IV Style Accessories

## Selecting Your Insert Arrangement

Below is a chart that represents every available shell and insert arrangement within the series. To choose the proper insert arrangement, you must first distinguish your application requirements for contact size and quantity.

Each insert arrangement has a unique number to identify its size and contact arrangement. The first number is the shell size. The second number is the contact arrangement. It does not, however, always equal the total number of contacts.

## Insert Arrangement Selection

| Insert <br> Arrangement | Military Shell Size | Total Contacts | Hermetic Available | PC Tail Kit Available | Service Rating | Contact Size |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | \#22D | \#20 | \#16 | \#12 | \#12 Coax ${ }^{1}$ | \#8 Coax ${ }^{2}$ | \#8 Twinax ${ }^{3}$ |
| 9-35 | A | 6 | $\checkmark$ | $\checkmark$ | M | 6 |  |  |  |  |  |  |
| 9-98 | A | 3 | $\checkmark$ | $\checkmark$ | I |  | 3 |  |  |  |  |  |
| 11-2 | B | 2 | $\checkmark$ | $\checkmark$ | 1 |  |  | 2 |  |  |  |  |
| 11-3 ${ }^{\ddagger}$ | B | 3 |  |  | II |  |  | 3 |  |  |  |  |
| 11-5 | B | 5 | $\checkmark$ | $\checkmark$ | 1 |  | 5 |  |  |  |  |  |
| 11-35 | B | 13 | $\checkmark$ | $\checkmark$ | M | 13 |  |  |  |  |  |  |
| 11-98 | B | 6 | $\checkmark$ | $\checkmark$ | I |  | 6 |  |  |  |  |  |
| 11-99 | B | 7 | $\checkmark$ | $\checkmark$ | 1 |  | 7 |  |  |  |  |  |
| 13-4 | C | 4 | $\checkmark$ | $\checkmark$ | I |  |  | 4 |  |  |  |  |
| 13-35 | C | 22 | $\checkmark$ | $\checkmark$ | M | 22 |  |  |  |  |  |  |
| 13-98 | C | 10 | $\checkmark$ | $\checkmark$ | I |  | 10 |  |  |  |  |  |
| 15-5 | D | 5 | $\checkmark$ | $\checkmark$ | 11 |  |  | 5 |  |  |  |  |
| 15-15 | D | 15 | $\checkmark$ |  | 1 |  | 14 | 1 |  |  |  |  |
| 15-18 | D | 18 | $\checkmark$ | $\checkmark$ | 1 |  | 18 |  |  |  |  |  |
| 15-19 | D | 19 | $\checkmark$ | $\checkmark$ | I |  | 19 |  |  |  |  |  |
| 15-35 | D | 37 | $\checkmark$ | $\checkmark$ | M | 37 |  |  |  |  |  |  |
| 15-97 | D | 12 | $\checkmark$ | $\checkmark$ | I |  | 8 | 4 |  |  |  |  |
| 17-2 | E | 39 |  |  | M | 38 |  |  |  |  |  | 1 |
| 17-6 | E | 6 | $\checkmark$ | $\checkmark$ | 1 |  |  |  | 6 |  |  |  |
| 17-8 | E | 8 | $\checkmark$ | $\checkmark$ | 11 |  |  | 8 |  |  |  |  |
| 17-26 | E | 26 | $\checkmark$ | $\checkmark$ | 1 |  | 26 |  |  |  |  |  |
| 17-35 | E | 55 | $\checkmark$ | $\checkmark$ | M | 55 |  |  |  |  |  |  |
| 17-98 ${ }^{\ddagger}$ | E | 26 |  |  | M | 24 |  |  |  |  |  | 2 |
| 17-99 | E | 23 | $\checkmark$ |  | I |  | 21 | 2 |  |  |  |  |
| 19-3 ${ }^{\ddagger}$ | F | 3 |  |  | M |  |  |  |  |  |  | 3 |
| 19-4 ${ }^{\ddagger}$ | F | 4 |  |  | M |  |  |  |  |  |  | 4 |
| 19-11 | F | 11 | $\checkmark$ | $\checkmark$ | II |  |  | 11 |  |  |  |  |
| 19-18 | F | 18 |  |  | M | 14 |  |  |  |  |  | 4 |
| 19-32 | F | 32 | $\checkmark$ | $\checkmark$ | I |  | 32 |  |  |  |  |  |
| 19-35 | F | 66 | $\checkmark$ | $\checkmark$ | M | 66 |  |  |  |  |  |  |
| 21-5 ${ }^{\ddagger}$ | G | 5 |  |  | M |  |  |  |  |  |  | 5 |
| 21-11 | G | 11 | $\checkmark$ | $\checkmark$ | 1 |  |  |  | 11 |  |  |  |
| 21-16 | G | 16 | $\checkmark$ | $\checkmark$ | 11 |  |  | 16 |  |  |  |  |
| 21-26 ${ }^{\ddagger}$ | G | 25 |  |  | M |  | 23 |  |  |  |  | 2 |
| 21-35 | G | 79 | $\checkmark$ | $\checkmark$ | M | 79 |  |  |  |  |  |  |
| 21-39 | G | 39 | $\checkmark$ | $\checkmark$ | 1 |  | 37 | 2 |  |  |  |  |
| 21-41 | G | 41 | $\checkmark$ | $\checkmark$ | 1 |  | 41 |  |  |  |  |  |
| 23-21 | H | 21 |  |  | II |  |  | 21 |  |  |  |  |
| 23-35 | H | 100 |  |  | M | 100 |  |  |  |  |  |  |

Insert Arrangement Selection (Continued from previous page)

| Insert Arrangement | Military Shell Size | Total Contacts | Hermetic Available | PC Tail Kit Available | Service Rating | Contact Size |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | \#22D | \#20 | \#16 | \#12 | \#12 Coax ${ }^{1}$ | \#8 Coax ${ }^{2}$ | \#8 Twinax ${ }^{3}$ |
| 23-53 | H | 53 | $\checkmark$ | $\checkmark$ | I |  | 53 |  |  |  |  |  |
| 23-55 | H | 55 | $\checkmark$ | $\checkmark$ | 1 |  | 55 |  |  |  |  |  |
| 23-97 ${ }^{\ddagger}$ | H | 16 |  |  | 1 |  |  | 16 |  |  |  |  |
| 23-99 $\ddagger$ | H | 11 |  |  | 11 |  |  | 11 |  |  |  |  |
| 25-4 | J | 56 | $\checkmark$ | $\checkmark$ | 1 |  | 48 | 8 |  |  |  |  |
| 25-8 | J | 8 |  |  | Twinax |  |  |  |  |  |  | 8 |
| 25-19 | $J$ | 19 | $\checkmark$ | $\checkmark$ | I |  |  |  | 19 |  |  |  |
| 25-20 ${ }^{5}$ | $J$ | 30 |  |  | N |  | 10 | 13 |  | 4 |  | 3 |
| 25-24 | J | 24 | $\checkmark$ | $\checkmark$ | 1 |  |  | 12 | 12 |  |  |  |
| 25-29 | J | 29 | $\checkmark$ | $\checkmark$ | 1 |  |  | 29 |  |  |  |  |
| 25-35 | J | 128 | $\checkmark$ | $\checkmark$ | M | 128 |  |  |  |  |  |  |
| 25-43 | J | 43 | $\checkmark$ | $\checkmark$ | I |  | 23 | 20 |  |  |  |  |
| 25-46 | J | 46 |  |  | 1 |  | 40 | 4 |  |  | 2 |  |
| 25-61 | $J$ | 61 | $\checkmark$ | $\checkmark$ | 1 |  | 61 |  |  |  |  |  |

${ }^{1}$ Includes the following \#12 coax contacts: TXPX12-006 (pin) or TXSX12-007 (socket) contacts, see p. B-11 for more information.
${ }^{2}$ Includes the following \#8 coax contacts: TXPX08-010 (pin) or TXSX08-011 (socket) contacts, see p. B-11 for more information.
${ }^{3}$ Includes the following \#8 twinax contacts: TXPW08-002 (pin) or TXSW08-003 (socket) contacts, see p. B-11 for more information.
${ }^{4}$ 13-13 insert is designed to accept 2 of our standard size \#16 fiber optic contacts in place of \#16 power contacts, see p. B-12 for more information.
${ }^{5} 25-20$ insert is designed for MIL-STD-1760 applications and includes the following contacts:
$2 \mathrm{x} \# 12$ coax contacts (matched impedance): TXPX12-006 (pin) or TXSX12-007 (socket) contacts
$2 \times \# 12$ coax contacts (matched impedance): TXPX12-010 (pin) or TXSX12-011 (socket) contacts
$3 \times$ \#8 twinax contacts: TXPW08-002 (pin) or TXSW08-003 (socket) contacts
$\ddagger$ Special order only Consult distributor for lead time.

## HIGH-FREOUENCY CONTACTS FOR HIGH-SPEED TRANSMISSION

Eight concentric twinax contacts for high-speed data transmission in a rugged connector.


## Contacts for Advanced Applications

Milnec's high-frequency contacts are the ideal choice for advanced applications that require superior electrical performance along with shielding to protect from outside electrical interference.

- High-speed RF contacts
- Fiber optic contacts
- PC tail contacts


## Insert Arrangement Drawings

|  |  | $0$ | $\otimes^{8 A} \otimes$ | ( $\begin{gathered}\text { Q } \\ 8 \\ 8 \\ 8 \\ 0\end{gathered}$ | $\left.\begin{array}{ll} 1 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}\right)$ |  | \%os | (en | $\left(\begin{array}{c} \theta^{i} \\ \theta_{0} \\ \\ \theta_{i} \end{array}\right)$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Arrangement | 9-35 | 9-98 | 11-2 | 11-3 | 11-5 | 11-35 | 11-98 | 11-99 | 13-4 |
| Service Rating | M | 1 | 1 | 11 | 1 | M | 1 | 1 | 1 |
| Number of Contacts | $6 \mathrm{x} \# 22 \mathrm{D}$ | $3 \mathrm{\#} 20$ | $2 \mathrm{x} \# 16$ | $3 \mathrm{x} \# 16$ | $5 \mathrm{x} \# 20$ | $13 \times \# 22 \mathrm{D}$ | $6 \times \# 20$ | 7 x \#20 | $4 \mathrm{x} \# 16$ |



|  |  |  |  |  |  |  |  | $\left(\begin{array}{llll} 50 & 0 & 0 & 0 \end{array}\right)$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Arrangement | 19-3 |  |  | 19-4 | 19-11 | 19-18 |  | 19-32 | 19-35 |
| Service Rating | M |  |  | M | II | M |  | 1 | M |
| Number of Contacts | 3 x \#8 Twinax |  |  | 4 x \#8 Twinax | $11 \mathrm{x} \# 16$ | $14 \times \# 22 \mathrm{D}$ |  | $32 \mathrm{x} \# 20$ | $66 \times \# 22 \mathrm{D}$ |
|  |  |  |  |  |  | 4 x \#8 Twinax |  |  |  |
|  |  |  |  | $\left(\begin{array}{ccc} \oplus & \oplus \\ \oplus & \oplus & \oplus \\ \oplus & \oplus & \oplus \\ \oplus & \oplus & \end{array}\right.$ |  |  |  |  |  |
| Arrangement | 21-5 |  |  | 21-11 | 21-16 |  | 21-26 |  | 21-35 |
| Service Rating | M |  |  | 1 | 11 |  | M |  | M |
| Number of Contacts | 5 x \#8 Twinax |  |  | $11 \mathrm{x} \# 12$ | $16 \mathrm{x} \# 16$ |  | $23 \mathrm{x} \# 20$ |  | $79 \times \# 22 \mathrm{D}$ |
|  |  |  |  |  |  |  | 2 x \#8 Twinax |  |  |
|  | $\bigcirc \oplus$ | $\otimes$ |  |  |  |  |  |  |  |
| Contact Legend | $10 \quad 12$ | *16 | *20 | \#22D |  |  |  |  | nued on next page) |


|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 21-39 | 21-41 | 23-97 | 23-21 | 23-21 | Arrangement |
| 1 | 1 | 1 | 11 | 11 | Service Rating |
| $37 \mathrm{x} \# 20$ | $41 \times \# 20$ | $16 \mathrm{x} \# 16$ | $11 \mathrm{x} \# 16$ | $21 \times \# 16$ | Number of Contacts |
| $2 \mathrm{x} \# 16$ |  |  |  |  |  |
|  |  |  |  |  |  |
| 23-35 | 23-53 | 23-55 | 25-4 | 25-8 | Arrangement |
| M | 1 | 1 | 1 | Twinax | Service Rating |
| $100 \mathrm{x} \# 22 \mathrm{D}$ | $53 \mathrm{x} \# 20$ | $55 \mathrm{x} \# 20$ | $48 \mathrm{x} \# 20$ | 8 x \#8 Twinax | Number of Contacts |
|  |  |  | $8 \mathrm{x} \# 16$ |  |  |



25-19
I
$19 \times \# 12$


25-20
N
$10 \mathrm{x} \# 20,13 \mathrm{x} \# 16$,
3 x \#8 Twinax, 4 x \#12 Coax



25-24
I
$12 x$ \#16
$12 x$ \#12


25-61
।
$61 \times \# 20$

Arrangement
Service Rating
Number of Contacts

