MTE Series

Product Facts

- **Qualified to European Standard AECMA Specification EN2997**
- **Qualified to Society of British Aerospace Companies/Rolls Royce Specification ESC10**
- **High temperature insert material for continuous operation at 500°F [260°C]**
- **Specially formulated elastomer grommets and interfacial seals to withstand elevated temperatures and hostile fluids**
- **Improved interfacial seal maximizes sealing around each contact**
- **High temperature contacts**
- **Guaranteed metal-to-metal bottoming for improved shell conductivity and stability for higher levels of vibration**
- **Gold plated RFI ground spring (optional) for improved shell-to-shell conductivity**
- **One-piece swaged fail-safe coupling nut**
- **Self-locking plugs with 2:1 differential uncoupling/coupling torque for high vibration environments**
- **Patented "frustum" insert retention mechanism to withstand high G-loads during shock and vibration**
- **360° accessory teeth for improved vibration performance and greater EMI protection**
- **Thermocouple pin and socket contacts are available, consult AMP for specifications**
- **Intermateable with MIL-C-83723 Series III threaded connectors**

The MTE Series Class K and KE connectors are specifically designed for the severe environments found in today's high-performance turbine engines. These connectors meet the stringent requirements of the Society of British Aerospace Companies Specification ESC 10 and the requirements of AECMA Standard EN2997.

The stainless steel shells of the connectors are designed to provide protection against constant high temperatures and damaging fluids. Self-locking coupling mechanisms withstand high vibration and G-loads.

Specially formulated elastomers and hard dielectric insert materials with excellent thermal stability keep performing in extreme temperatures, high vibration and hostile fluids.

Standard military specification insert arrangements and contacts provide compatability with standard assembly tooling and procedures. This aptness provides a cost effective application.

SOURCE: Catalog 82785

MTE Series (Continued)

Performance Specifications

Operating Temperature Range

-85°F [-65°C] to 392°F [200°C] - Class K; with cyclical performance to 500°F [260°C] - Class KE

Shock and Vibration

Wired, mated connectors shall not be damaged, nor shall there be a current interruption longer than 1 microsecond when subjected to the following:

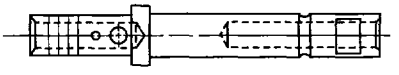
Shock: One shock in each of the three major axes, having a 100 g peak for a duration of 6 milliseconds

Vibration: Twelve hours of random vibration having a range of 10 to 2000 Hz with a .06 [1.52] double amplitude (10-55 Hz) and a 20 g peak level (55-2000 Hz)

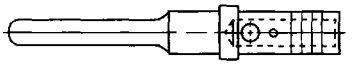
Fluid Resistance

Connectors shall perform satisfactorily after having been subjected to the fluids and tests specified in ESC 10 and EN2997

Contacts, Sealing Plugs and Assembly Tools



Socket Contact



Pin Contact

Contact Size	Wire Range AWG	Wire Range mm²	Color Band	MATRIX Part Numbers Socket Contacts	Pin Contacts	Sealing Plugs
20	24-20	0.2-0.6	Rd./Rd.	5100-427-2020	5000-270-2020	3400-152-0020
16	20-16	0.5-1.4	Bl/Bl.	5100-427-1616	5000-270-1616	3400-152-0016
12	14-12	2-3	Yel./Yel.	5100-427-1212	5000-270-1212	3400-152-0012
20	20-18	0.5-1	Rd./Vlt.	5100-427-2018*	5000-270-2018*	3400-152-0020

*Use when additional MATRIX modification code (IE-31500) requires special contact size 20 with #18 AWG [0.75-1 mm²] crimp barrel.

Crimping Tools

Contact Size	Wire Range AWG	Wire Range mm²	Finished Wire Dia. Range inch	Finished Wire Dia. Range mm	Color Code	Military Part No. Crimping Tool	Military Part No. Positioner
20	24-20	0.2-0.6	**.033-.083**	0.84-2.11	Rd.	M22520/1-01	M22520/1-02
16	20-16	0.5-1.4	**.047-.106**	1.19-2.69	Bl.	M22520/1-01	M22520/1-02
12	14-12	2-3	**.075-.157**	1.91-3.99	Yel	M22520/1-01	M22520/1-02
20	20-18	0.5-1	**.040-.083**	1.02-2.11	Rd.	M22520/1-01	M22520/1-02

Insertion/Extraction Tools

Contact Size	Color Code	Military Part No.	MATRIX Part No.
20	Rd./Wh.	M81969/14-02	6500-001-0020
16	Bl./Wh.	M81969/14-03	6500-001-0016
12	Yel./Wh.	M81969/14-04	6500-001-0012
20	Rd./Wh.	M81969/14-02	6500-001-0020

MATRIX Part Number System

MTE 30 KE 10 05 P N

Polarization
N = Normal (6, 7, 8, 9 or Y for Alternate)

Contact Style
P = Pin S = Socket

Insert Arrangement

Shell Size

Class
K = Stainless steel shell, passivated, fire resistant insert (200°C)
KE = Stainless steel shell, passivated, fire resistant insert (260°C)

Shell Style
0 = Receptacle, square flange mount
7 = Plug, self-locking, swaged coupling nut
9 = Plug, self-locking, swaged coupling nut with RFI screening ring

MATRIX Series Number
Threaded coupling, rear release crimp contacts

SOURCE: Catalog 82785

MTE Series (Continued)

SBAC Specification Part Number System

ESC10 KE 0 10 05 P N

- **Polarization**
  N = Normal (6, 7, 8, 9 or Y for Alternates)
- **Contact Style**
  P = Pin S = Socket
- **Insert Arrangement**
- **Shell Size**
- **Shell Style**
  0 = Receptacle, square flange mounting
  6 = Plug
- **Class**
  KE = Stainless steel shell, passivated, fire resistant insert, max. operating temperature 260°C cyclic
  SE = Stainless steel shell, passivated, with RFI screening ring (plug only), 260°C cyclic
- **Basic SBAC Specification Number**

AECMA Specification Part Number System

EN 2997 SE 0 10 05 M N

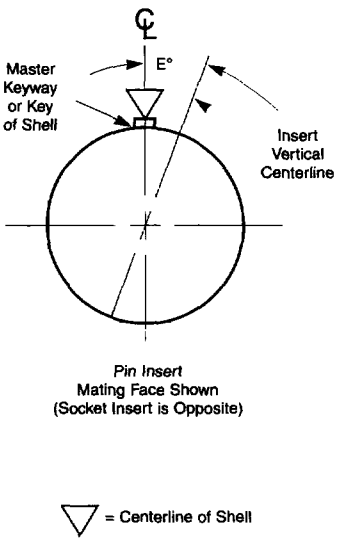
- **Polarization**
  N = Normal (Use 6, 7, 8, 9 or Y for Alternate)
- **Contact Style**
  M = Male contact (Pin)
  F = Female contact (Socket)
  A = Less pin contacts
  B = Less socket contacts
  C = Size 20 pin contacts (reduced wire barrel)
  D = Size 20 socket contacts (reduced wire barrel)
- **Insert Arrangement**
- **Shell Size**
- **Shell Style**
  0 = Receptacle, square flange
  6 = Plug
- **Class (Connector Model)**
  K = Plug only, stainless steel shell, passivated, fire resistant insert, 200°C continuous
  S = Plug and receptacle, stainless steel shell, passivated, fire resistant insert, 200°C continuous
  KE = Plug only, stainless steel shell, passivated, fire resistant insert, 260°C cyclic
  SE = Plug and receptacle, stainless steel shell, passivated, plug with RFI screening ring, 260°C cyclic
- **Basic AECMA Specification Number**

SOURCE: Catalog 82785

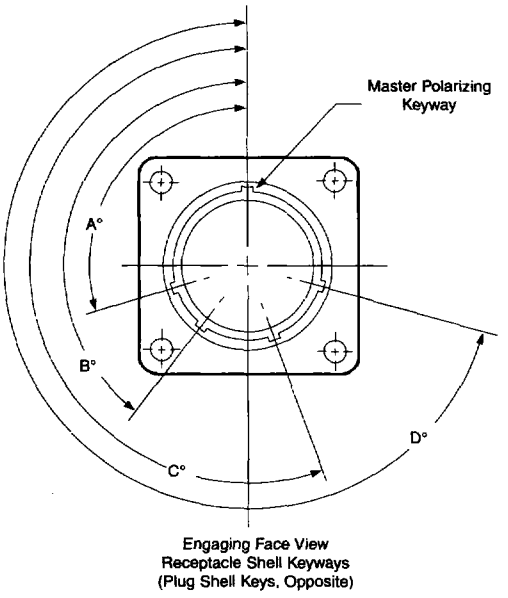
MTE Series (Continued)

Polarization

Insert Clocking



Keying Positions



Insert Clocking (Per MIL-STD-1554)

Shell Size	Polarizing Position	Key/Keyway Positions A°	B°	C°	D°	Insert Position E°	Service Rating
8,10	N	105	140	215	265	0	Refer to Insert Arrangement Captions on Next Page
	1*	105	140	215	265	10	
	2*	105	140	215	265	20	
	3*	105	140	215	265	30	
	4*	105	140	215	265	40	
	5*	105	140	215	265	50	
12,14 16,18 20,22 24 & 28**	N	105	140	215	265	0	
	1*	105	140	215	265	10	
	2*	105	140	215	265	20	
	3*	105	140	215	265	30	
	4*	105	140	215	265	40	
	5*	105	140	215	265	50	

*Position 1 thru 5 inactive for new design, (Ref. MIL-STD-1554)

Keying Positions (Per MIL-STD-1554)

Shell Size	Polarizing Position	Key/Keyway Positions A°	B°	C°	D°	Insert Position E°	Service Rating
8 thru 24	N	105	140	215	265	0	Refer to Insert Arrangement Captions on Next Page
8 & 10	6	102	132	248	320	0	
	7	80	118	230	312	0	
	8	35	140	205	275	0	
	9	64	155	234	304	0	
	Y*	25	115	220	270	0	
10 only	6	18	149	192	259	0	
12, 14 16, 18 20, 22 24 & 28**	7	92	152	222	342	0	
	8	84	152	204	334	0	
	9	24	135	199	240	0	
	Y*	98	152	268	338	0	

*Positions 10 and Z designators are inactive, superseded by Y (Ref. MIL-STD-1554) EN 2997 only.
**Shell size 28 not military standard connector

Notes:
1. In the "Normal insert position" (position N), the insert centerline coincides with the centerline of the master key/keyway of the shell.

2. In the "Alternate insert position" (positions 1, 2, 3, 4 and 5), the socket insert is rotated clockwise relative to the centerline of the master key/keyway of the shell as indicated in the Figure and Table. The pin insert is rotated counter-clockwise.

3. Alternate polarizing positions 1, 2, 3, 4 and 5 are for interchangeability use only. Not recommended for new design, per MIL-C-83723.

4. In the "Alternate keying position" (positions 6, 7, 8, 9 and Y), the minor keys/keyways are positioned with reference to master key/keyway as indicated in the keying position table.

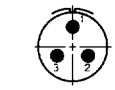
5. All plugs have keys. All receptacles have keyways.

SOURCE: Catalog 82785

MTE Series (Continued)

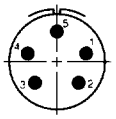
Insert Arrangements (Per MIL-STD-1554)

Numbering identification example: **0803** (Shell Size and Insert Number)
3 #20 (Contact quantity and size)
I (Service rating)

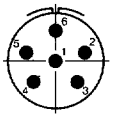


0803
3 #20

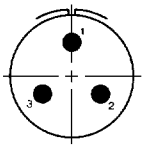
0898
3 #20



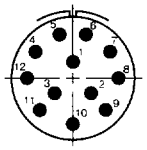
1005
5 #20



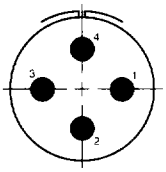
1006*
6 #20



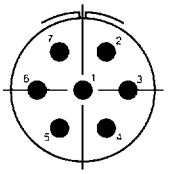
1203
3 #16



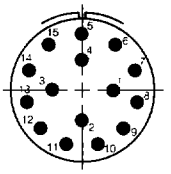
1212
12 #20



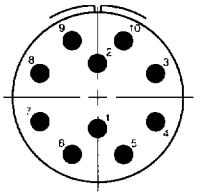
1404
4 #12



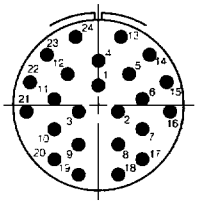
1407
7 #16



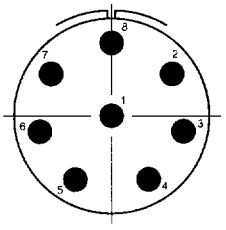
1415
15 #20



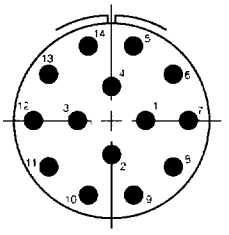
1610
10 #16



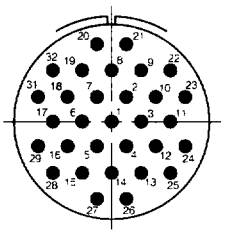
1624
24 #20



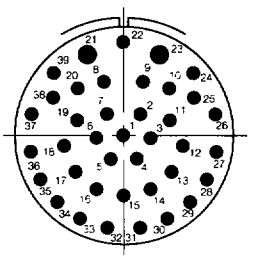
1808
8 #12



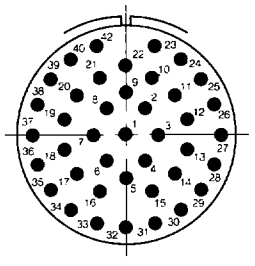
1814
14 #16



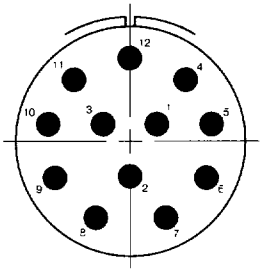
1831
31 #20



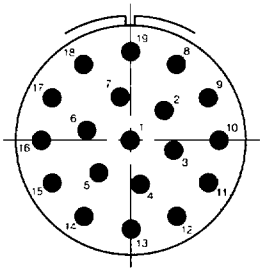
2039
37 #20, 2 #16



2041
41 #20



2212
12 #12



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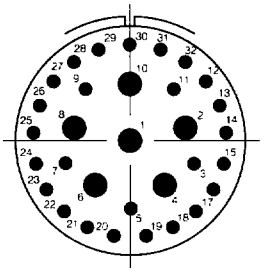
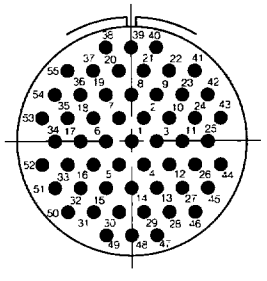
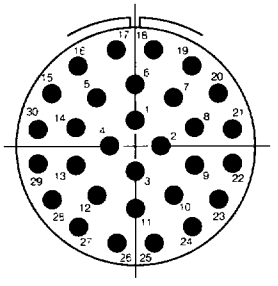
19 #16



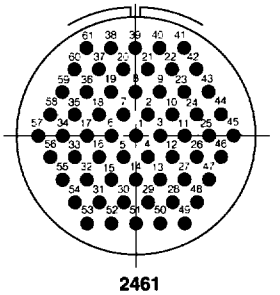
2232*
26 #20, 6 #12



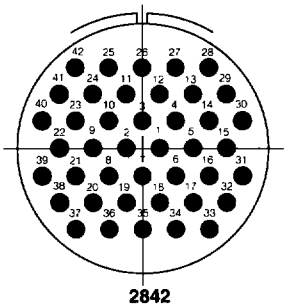
2255
55 #20



2430
30 #16



2461
61 #20



2842
42 #16

* EN 2997 only.
Note: Mating face of pin insert is shown. Socket insert is opposite.

SOURCE: Catalog 82785

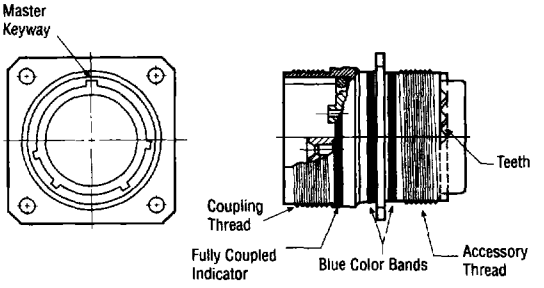
MTE Series (Continued)

Shell Size:

8
10
12
14
16
18
20
22
24
28

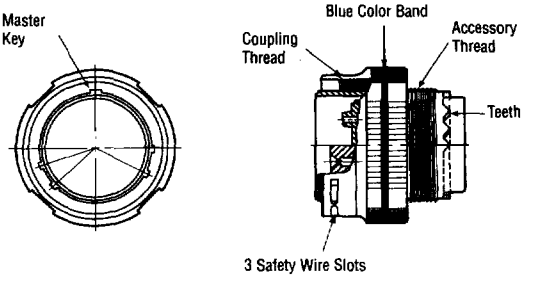
Receptacle Shell, Square Flange Mount

MATRIX No. MTE 30K & MTE 30KE
ESC 10 No. ESC10KE0
AECMA No. EN2997S0 & EN2997 SE0



Plug Shell, Self-Locking

MATRIX No. MTE 37K
ESC 10 No. ESC10KE6
AECMA No. EN2997K6



Plug Shell, Self-Locking, RFI Grounding

MATRIX No. MTE 39K & MTE 39KE
ESC 10 No. ESC10SE6
AECMA No. EN2997S6 & EN2997SE6