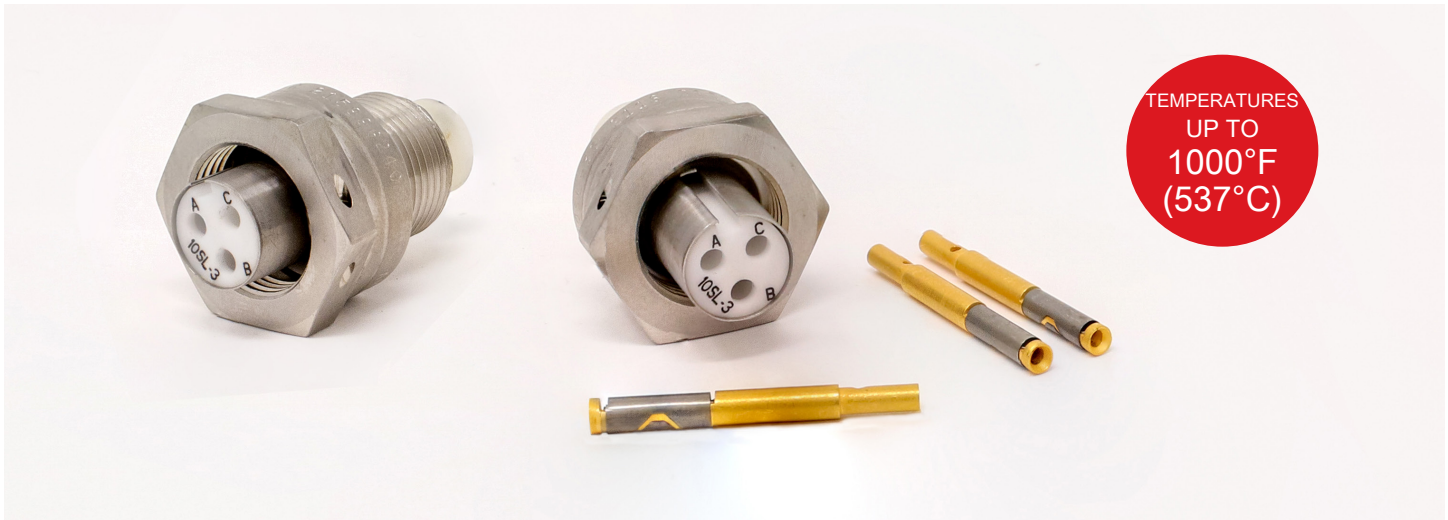


# BT HIGH-TEMPERATURE CONNECTORS

PDS - 335



## BT-M CONNECTORS:

**BT-M** firewall electrical connectors were specially designed for service where high-temperature performance and direct exposure to flame are prevalent.

It is important to note that the **BT-M** series is divided into two categories. The first category, **BT-M**, utilizes a MS-R type silicone grommet and clamp for termination of open wiring. The second category, the **BT-MA**, utilizes a conduit adapter for termination of cable conduit.

The **BT-M** series connector will maintain a functional circuit under extreme heat of 2000°F (1093°C) for 5 minutes. It will also sustain a flame barrier for an additional 15 minutes. Continuous duty at an elevated temperature up to 450°F (232°C) is assured

## BT-RA CONNECTORS:

**BT-RA** connectors meet the applicable requirements of Class A connectors to MIL-C-5015D and will operate continuously at temperatures up to 1000°F (537°C). Intermateability and interchangeability with MIL-C-5015 connectors is assured. This connector series features rear removable crimp type contacts to ease assembly procedures and provides very little change in millivolt drop (contact resistance) during and after exposure to high-temperature and vibration.

## BT-M COMPONENT FEATURES:

- Stainless steel shells provide added durability and resistance to corrosion.
- High density alumina oxide/silicone inserts provide increased performance in the following characteristics:
  - High resistance to vibration damage
  - Durability
  - Overall connector reliability
- Crimp-type, gold plated contacts designed for use with wire conforming to MIL-W-5086 requirements.

## BT-RA COMPONENT FEATURES:

- Shells and coupling nuts are fabricated from stainless steel to provide durability and resistance to corrosion and high-temperatures.
- Contacts are machined from nickel and are heavy gold plated for excellent electrical properties at high-temperatures.
- Inserts are ceramic moldings and contain spring clips for retaining contacts. This combination of materials and plating also provides resistance to radiation and oxidation.

# BUILD A PART NUMBER: BT06M-16-9PW(SR)

1. Connector Type	2. Shell Style	3. Connector Style	4. Shell Size - Insert Arrangement	5. Contact Type	6. Alternate Positions	7. Accessory
<b>BT</b>	<b>06</b>	<b>M-</b>	<b>16-9</b>	<b>P</b>	<b>W</b>	<b>(SR)</b>

1. Connector Type	
<b>BT</b>	High Temperature

2. Shell Style	
<b>00</b>	Wall Mount Receptacle
<b>02</b>	Box Mount (Not available in RA)
<b>03</b>	Wall Mount Less Accessory
<b>05</b>	Plug Less Accessory
<b>06</b>	Plug
<b>08</b>	Plug with 90° Accessory

3. Connector Style	
<b>M-</b>	450°F (232°C) continuous, designates open wiring termination
<b>MA-</b>	450°F (232°C) continuous, designates cable conduit termination
<b>RA-</b>	1000°F (573°C) continuous, crimp-type

4. Shell Size & Insert Arrangement
See page 4 for BT-M and page 7 for BT-RA

5. Contact Type	
<b>P</b>	Pin
<b>S</b>	Socket

6. Alternate Positions
See page 5 for BT-M and page 6 for BT-RA

7. Strain Relief Accessory	
<b>(118)</b>	Long contacts with insulation Cup
<b>(SR)</b>	Strain Relief

# BT-M SPECIFICATIONS:

## WIRE WELL DATA

Contact Size	4	8	12	16
Well Dia.	.281 +005 -.003	.281 +004 -.002	.098 +.004 -.000	.063 +.004 -.000
Well Depth +.031 -.000	.500	.500	.250	.250

## CONTACT PART NUMBER

Pin Contact	Socket Contacts	Plating
10-407018-XXX	10-407019-XX9	100 mil gold* over nickel
10-407018-XXT	10-407019-XXT	30 mil rhodium over silver
10-101649-XXP	10-101649-XXS	50 mil gold over
10-746XX	(Pin or Socket)	200 mil silver

\* Plating normally supplied

Various contact platings are available please contact Amphenol for availability of platings not shown.

## CONTACT RATING

Contact Size	Rated Current	Test Current	Potential Drop Millivolts Max.
16	13	13	35
12	23	23	30
8	46	46	25
4	80	80	14

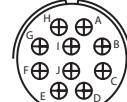
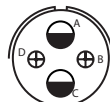
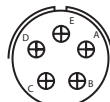
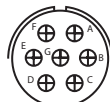
## CONTACT ARRANGEMENT SERVICE RATING

MS Service	Recommended Operating Voltage at Sea Level		Potential Drop Millivolts Max.
	DC	AC rms	
Inst.	250	200	1000
A	700	500	2000
D	1250	900	2800
E	1750	1250	3500
B	2450	1750	4500
C	4200	3000	7000

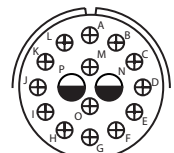
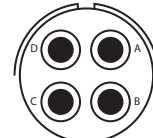
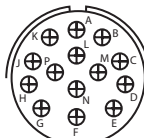
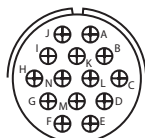
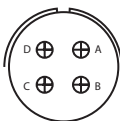
# BT-M / BT-MA INSERT ARRANGEMENTS



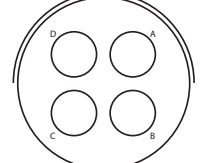
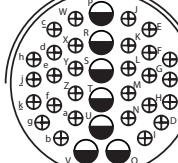
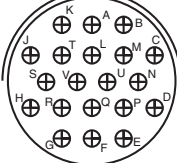
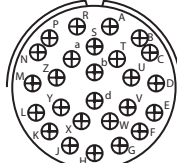
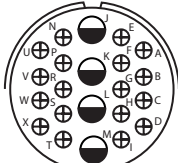
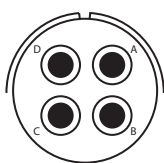
Insert Arrangement	10SL-3	10SL-4	12S-3	14S-2	14S-5	14S-6	14S-7
Service Rating	A***	A	A	Inst.	Inst.	Inst.	A
Number of Contacts	3	2	2	4	5	6	3
Contact Size	16	16	16	16	16	16	16



Insert Arrangement	14S-9**	16S-1	16S-8	16-9	16-10	16-11	18-1
Service Rating	A	A	A	A	A	A	B, C, F, G = A; Bal. = Inst.
Number of Contacts	2	7	5	2	2	3	10
Contact Size	16	16	16	12	16	12	16



Insert Arrangement	18-4	18-11	20-27	22-19	22-22	24-7
Service Rating	D	A	A	A	A	A
Number of Contacts	4	5	14	2	4	2   14
Contact Size	16	12	16	12	8	12   16



Insert Arrangement	24-22	28-11	28-12	28-16	32-7	32-17
Service Rating	D	A	A	A	A, B, h, j = Inst.; Bal. = A	D
Number of Contacts	4	4   18	26	20	7   28	4
Contact Size	8	12   16	16	16	12   16	4

\*\* Inactive for new design  
 \*\*\* Service rating Inst. Class K  
 • Socket only



# BT-M / BT-MA INSERT AVAILABILITY IDENTIFICATION & ALTERNATE POSITIONS

## INSERT ARRANGEMENTS

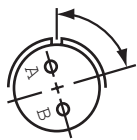
## ALTERNATE POSITIONING

Insert Arrangements	Total	Contact Size				Service Rating	Alternate Positioning			
		4	8	12	16		W	X	Y	Z
10SL-3	3				3	A	-	-	-	-
10SL-4	2				2	A	-	-	-	-
12S-3	2				2	A	70	145	215	290
14S-2	4				4	Inst.	-	120	240	-
14S-5	5				5	Inst.	-	110	-	-
14S-6	6				6	Inst.	-	-	-	-
14S-7	3				3	A	90	180	270	-
14S-9	2				2	A	70	145	215	290
16S-1	7				7	A	80	-	-	280
16S-8	5				5	A	-	170	265	-
16-9	4			2	2	A	35	110	250	325
16-10	3			3		A	90	180	270	-
16-11**	2			2		A	35	110	250	325
18-1	10				10	***	70	145	215	290
18-4	4				4	D	35	110	250	325
18-11	5			5		A	-	170	265	-
20-27	14				14	A	35	110	250	325
22-19	14				14	A	80	110	250	280
22-22	4		4			A	-	110	250	-
24-7**	16			2	14	A	80	110	250	280
24-22	4		4			D	45	110	250	-
28-11	22			4	18	A	80	110	250	280
28-12	26				26	A	90	180	270	-
28-16	20				20	A	80	110	250	280
32-7	35			7	28	***	80	125	235	280
32-17	4	4				D	45	110	250	-

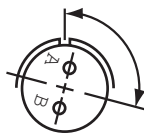
\*\* Tooled in Socket Arrangement Only.

\*\*\* B, C, F, G=A, Balance = Inst.

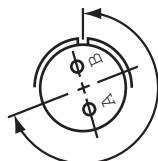
- Indicated positions not available



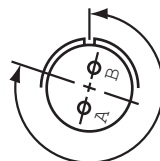
Position W



Position X



Position Y



Position Z

Views looking into front face of pin insert or rear of socket insert.

# BT-RA SPECIFICATIONS:

## WIRE WELL DATA

Contact Size	Conductor Well Dia.	Conductor Well Depth
16	.066 +.002 -.000	.250 +.031 -.000
12	.098 +.004 -.000	.250 +.031 -.000

## WIRE WELL DATA (110)

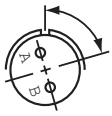
Contact Size	Well Diameter		Well Depth	
	Conductor Well Dia.	Conductor Well Depth	Conductor	Insulation
16	.066 +.002 -.000	.250 +.031 -.000	.289 +.037 -.000	.247 +.006 -.000
12	.098 +.004 -.000	.250 +.031 -.000	.289 +.037 -.000	.247 +.006 -.000

## CONTACT RATING

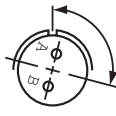
Contact Size	Rated Current	Test Current	Potential Drop Millivolts Max.
16	13	13	30
12	23	23	30

## CONTACT ARRANGEMENT SERVICE RATING

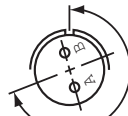
Service Rating	Suggested Operating Voltage (Sea Level)		Test Voltage AC rms
	DC	AC rms	
Inst.	250	200	1000
A	700	500	2000
D	1250	900	2800
E	1750	1250	3500
B	2450	1750	4500
C	4200	3000	7000



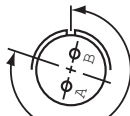
Position W



Position X



Position Y



Position Z

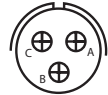
## BT-RA INSERT AVAILABILITY AND IDENTIFICATION-ALTERNATE POSITION

Insert Arrangement	Total Contacts	Contact Size		Service Rating	Alternate Positioning Degrees			
		12	16		W	X	Y	Z
10SL-3	3		3	A	-	-	-	-
10SL-4	2		2	A	-	-	-	-
12S-3	2		2	A	70	145	215	290
12S-10	4		4	Inst.	-	-	-	-
14S-2	4		4	Inst.	-	120	240	-
14S-7	3		3	A	90	180	270	-
16S-1	7		7	A	80	-	-	280
16S-8	5		5	A	-	170	265	-
18-1	10		10	-	70	145	215	290
20-29	17		17	A	80	-	-	280
22-14	19		19	A	80	110	250	280
28-20	14	10	4	A	80	110	250	280
28-21	37		37	A	80	110	250	280

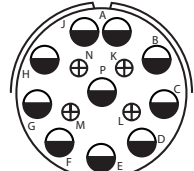
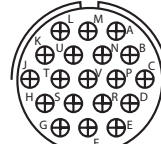
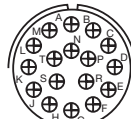
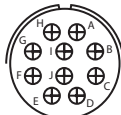
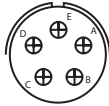
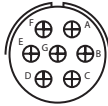
\*\*\*B, C, F, G=A, Balance = Inst.

-Indicated positons not available

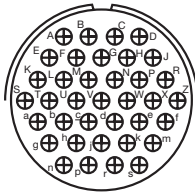
# BT-RA INSERT ARRANGEMENTS



Insert Arrangement	10SL-3	10SL-4	12S-3	12S-10	14S-2	14S-7
Service Rating	A***	A	A	A	Inst.	A
Number of Contacts	3	2	2	4	4	3
Contact Size	16	16	16	16	16	16



Insert Arrangement	16S-1	16S-8	18-1	20-29	22-14	28-20
Service Rating	A	A	B, C, F, G = A; Bal. = Inst.	A	A	A
Number of Contacts	7	5	10	17	19	10   4
Contact Size	16	16	16	16	16	12   16



Insert Arrangement	28-21
Service Rating	A
Number of Contacts	37
Contact Size	16

\* B, C, F, G = Balance=Inst.



CONTACT LEGEND

16 12