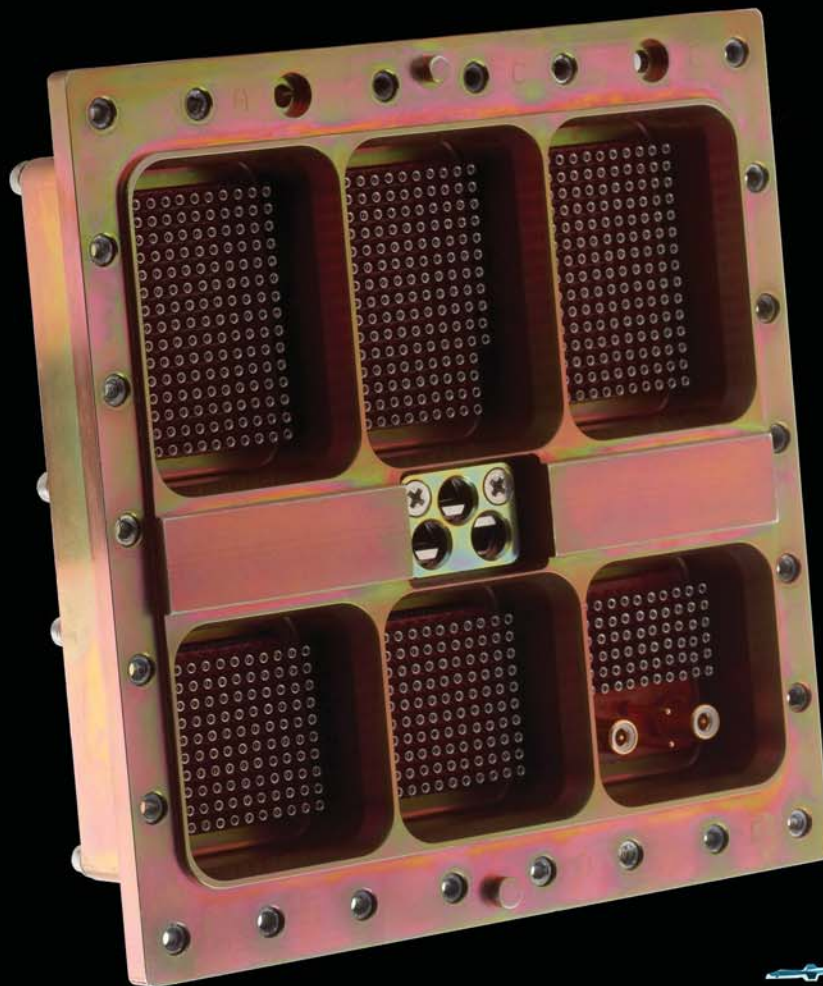


R27



**CONNECTING SYSTEMS
OF THE FUTURE**

Amphenol

FILTERED AND RECTANGULAR CONNECTORS

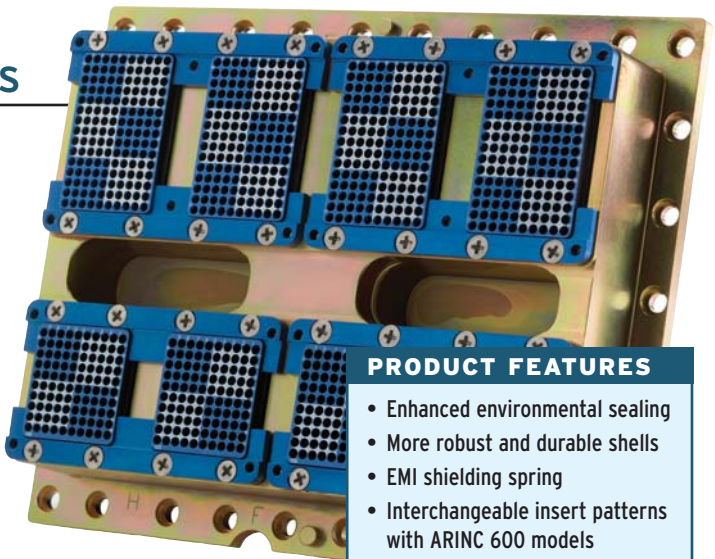
R27

R27 Series MIL-DTL-83527 Filtered and Rectangular Products

The **Amphenol R27 Series** is a robust rectangular connector designed to meet or surpass all the requirements of the **MIL-DTL-83527** specification and **EN 3682** European Standard. This series is particularly well suited for military and commercial aircraft applications where harsh environmental issues are a concern. Connectors, shells, inserts, termination modules and contacts are sold separately or fully assembled.

These connectors are intermateable and interchangeable with filtered and non-filtered MIL-DTL-83527 connectors. A wide range of contact arrangements are available using contact types from Fibre Optic, Quadrax, Differential Twinax, Triax, Twinax and Coax to the standard size 12, 16, 20 and 22 contacts, in crimp and PCB.

These connectors are offered in both filtered and non-filtered designs. Filtered designs incorporate Amphenol's solderless construction which reduces stress on the ceramic elements resulting in superior thermal and physical shock performance and unparalleled long term reliability. Custom designs and features such as termination modules, backshells, unique insert patterns and integral shells are also available.



PRODUCT FEATURES

- Enhanced environmental sealing
- More robust and durable shells
- EMI shielding spring
- Interchangeable insert patterns with ARINC 600 models
- Available in both filtered and non-filtered

PERFORMANCE CHARACTERISTICS

Description	Rating		
Dielectric Withstanding Voltage (DWV)	1500 Vrms		
	Size 22	1300 Vrms	
Continuous contact current ratings	SIZE	RATING	
	22	5.0A	
	20	7.5A	
	16	10.0A	
	12	23.0A	
Contact resistance	SIZE	WIRE GAUGE	mΩ
	22	22	17
		24	23
		26	38
	20	20	11
		22	17
		24	23
	16	16	6
		18	8
		20	10
	12	12	3.35
		14	4.24
Insulation resistance	5.0 gigaoHms min. at 500 VDC		
Engagement/ separation force	shell size 2	325 lbf (1446N) max.	
	shell size 3	400 lbf (1780N) max.	
	shell size 4	475 lbf (2113N) max.	
Durability	500 cycles min. – mating and unmating		
Temperature range	-65°C (-86°F) to +150°C (+275°F)		



MATERIALS

Description	Material	Finish
Shells	aluminum alloy	yellow chromate over cadmium*
		olive drab chromate over cadmium*
		electroless nickel
Contacts	copper alloy	gold over nickel
Inserts	aluminum alloy	yellow chromate over cadmium*
		olive drab chromate over cadmium*
		electroless nickel
Insert and polarizing retention plates	aluminum alloy	thermoset
		thermoplastic
		N/A
Insert and polarizing retention plates	aluminum alloy	yellow chromate over cadmium*
		olive drab chromate over cadmium*
		electroless nickel
		blue anodized (rear release)
Screws, washers, nuts and polarizing posts	stainless steel	passivated
		yellow chromate over cadmium
Polarizing keys	aluminum or zinc alloy	yellow chromate over cadmium*
Socket sleeve/hood	stainless steel	olive drab chromate over cadmium*
Planar capacitor	barium titanate based ceramic	passivated
		gold over nickel
		silver
Seals and O-ring	fluorinated silicon rubber or silicon rubber	palladium silver
EMI spring	beryllium copper alloy	N/A
		gold over nickel
Retention clip	beryllium copper alloy	tin lead alloy*
		N/A
Retention clip	beryllium copper alloy	gold (grounding)

*electroless nickel underplate

R27 Series Connector Part Numbering

M83527 ARINC STYLE CONNECTOR

CONNECTOR PART NUMBER

R27 E R 3 - XXXXX - 000

SERIES

Rectangular M83527

CLASS

E - Insert with rear grommet and O-Ring

N - Insert with O-Ring only (no grommet)*

All receptacles supplied with interfacial seal

SHELL STYLE

R - Receptacle

P - Plug

SHELL SIZE

2 - 2 Cavities

3 - 4 Cavities

4 - 6 Cavities

6 - 8 Cavities

LAYOUT DESIGNATOR*

00500 - 150 x 100 x 150 x 100

0200T - 150 x 34 x 10T10 x 6T6

0312Q - 150 x 6Q6 x 150 x 6Q6

A320F - 150 x 100 x 36F36 x 34

DEVIATION

000 - Per MIL-83527 & EN3682 with crimp contacts

001 - Front release signal PCB tail and rear release power PCB tail .250" (6.35mm) installed

002 - Rear release PCB tail .250" (6.35mm) installed

XXX - Consult factory for custom requirements

TERMINATION MODULE PART NUMBER

R27 A 3 - XXXXX - 000

SERIES

Rectangular M83527

SHELL STYLE

A - Termination Module

SHELL SIZE

2 - 2 Cavities

3 - 4 Cavities

4 - 6 Cavities

6 - 8 Cavities

LAYOUT DESIGNATOR*

00500 - 150 x 100 x 150 x 100

0200T - 150 x 34 x 10T10 x 6T6

0312Q - 150 x 6Q6 x 150 x 6Q6

A320F - 150 x 100 x 36F36 x 34

DEVIATION

000 - .250" (6.35mm) PCB ext.

XXX - Consult factory for custom requirements

*N class is non-environmental (no grommet)

*Layout designator represents the total number of contacts within the layout. Consult factory for further availability of insert combinations.

INSERT KIT PART NUMBER

R27 E R 1 11Q2 G - FO

SERIES

Rectangular M83527

CLASS

E - Insert with rear grommet and O-Ring

N - Insert with O-Ring only (no grommet)*

SHELL STYLE

R - Receptacle

P - Plug

INSERT CAVITY SIZE

1 - Insert for cavities A,C,E and G

2 - Insert for cavities B,D,F and H

INSERT PATTERN

See table Page 6

RF CONTACT GROUNDING

G - Grounded

N - Not grounded

CONTACT MODIFIER

FO - Contacts not supplied

OO - Rear release crimp signal and power contacts supplied (No RF contacts supplied)

SB - Front release .025" (.63mm) Dia. x .250" (6.35mm) PCB signal contacts (installed) and crimp rear release power contacts (No RF contacts supplied)

SP - Front release signal PCB tail and rear release power PCB tail .250" (6.35mm) installed

SK - Rear release PCB tail .250" (6.35mm) installed

SHELL KIT PART NUMBER

R27 R 3 - 00 01 - C

SERIES

Rectangular M83527

SHELL STYLE

R - Receptacle

P - Plug

SHELL SIZE

2 - 2 Cavities

3 - 4 Cavities

4 - 6 Cavities

6 - 8 Cavities

SHELL MODIFICATION CODE

OO - .150 Dia (3.80) all holes

O1 - M3 clinch nuts all holes

POLARIZATION CODE

per Arinc 600

PLATING

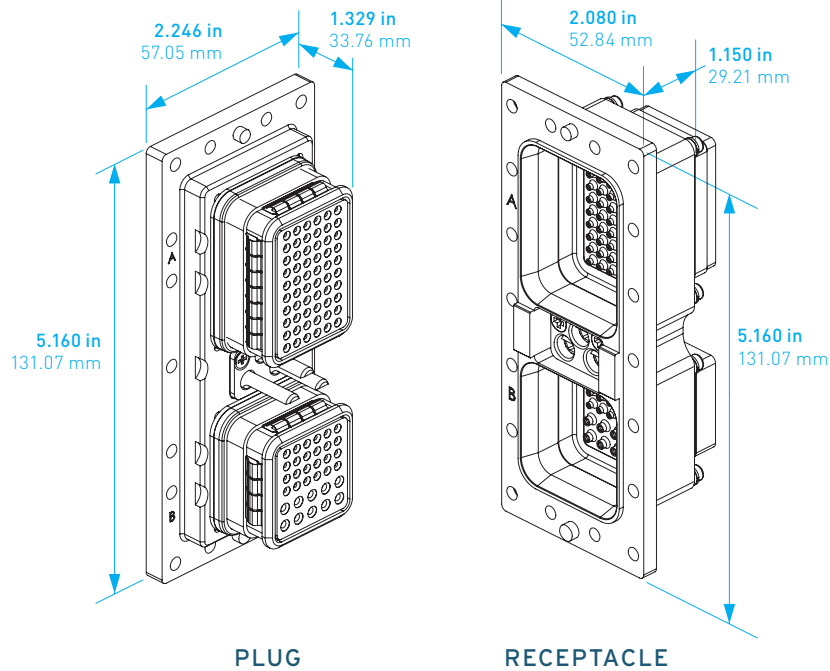
C - Yellow chromate over cadmium over electroless nickel

D - Olive drab chromate over cadmium over electroless nickel

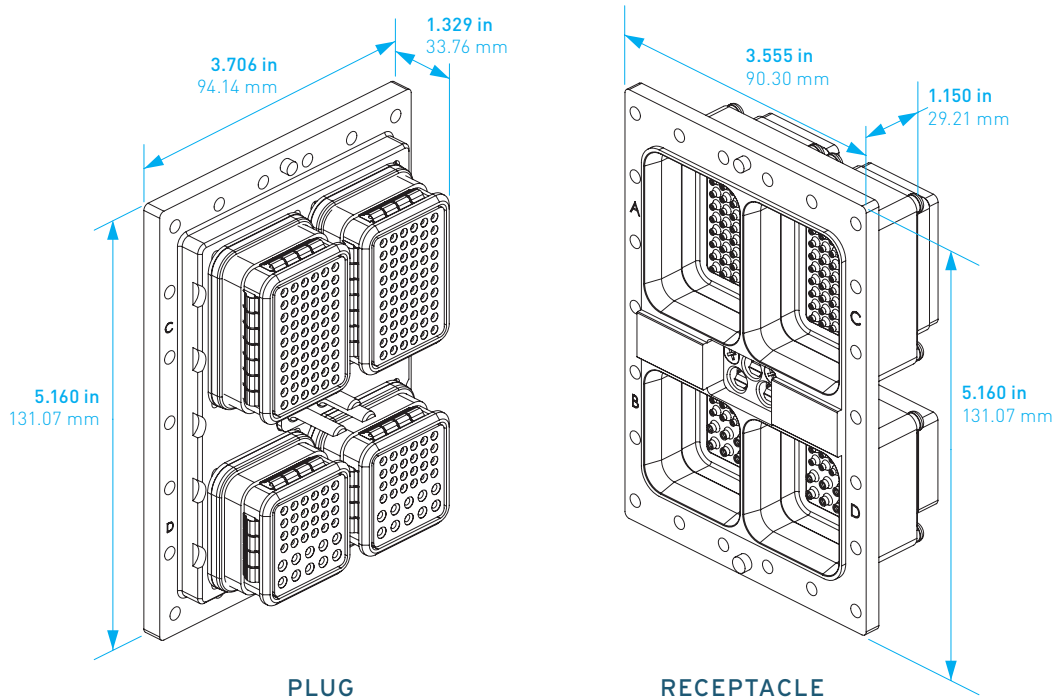
N - Electroless Nickel

R27

Shell size 2

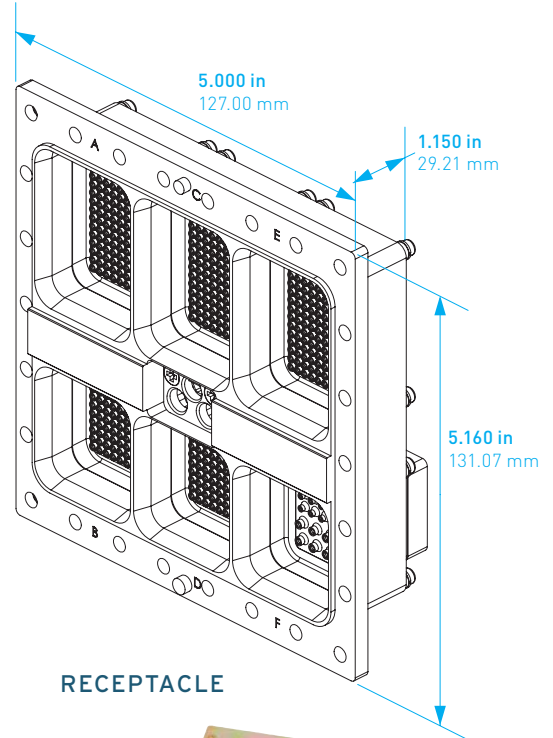
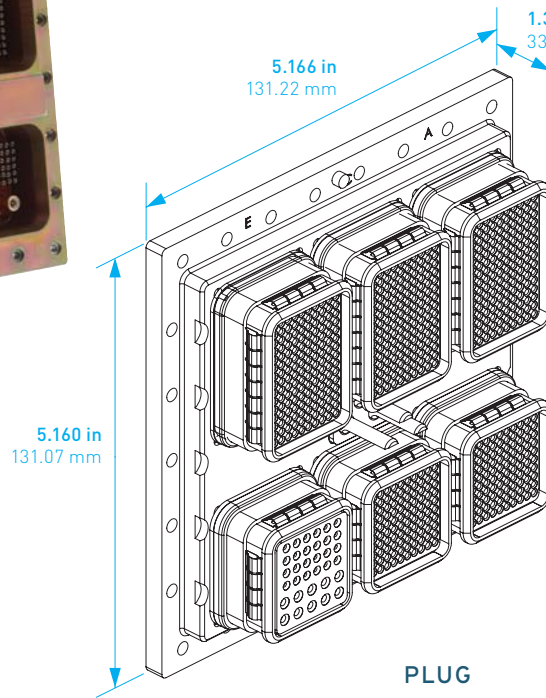
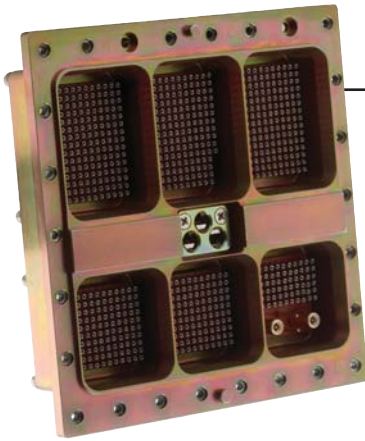


Shell size 3

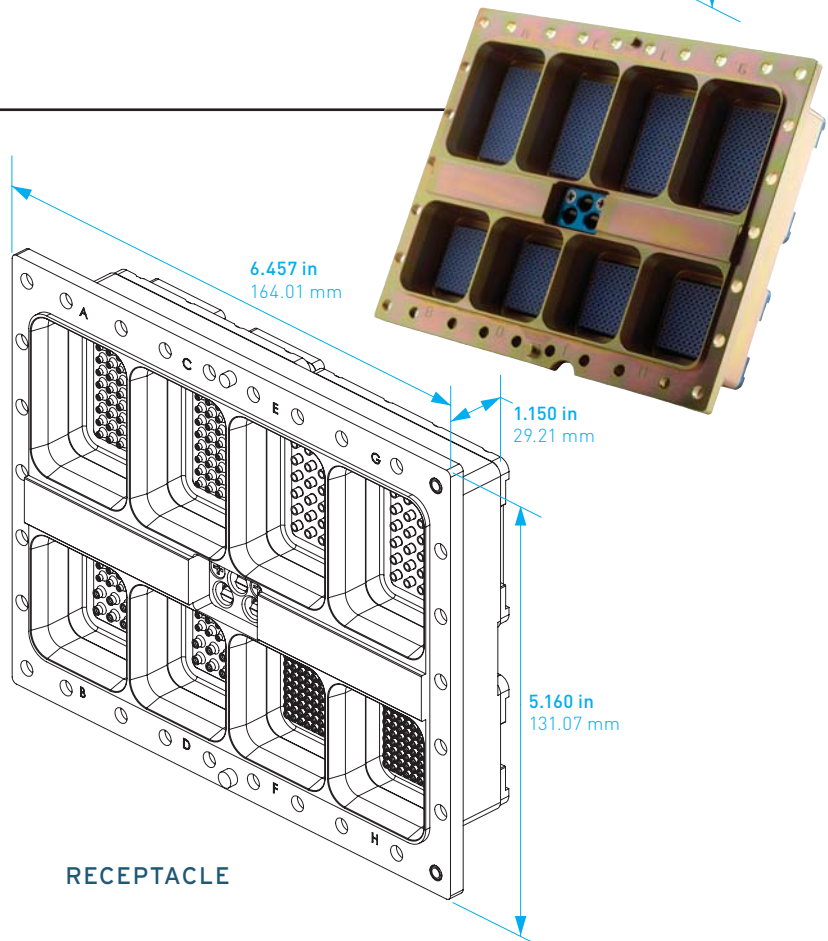
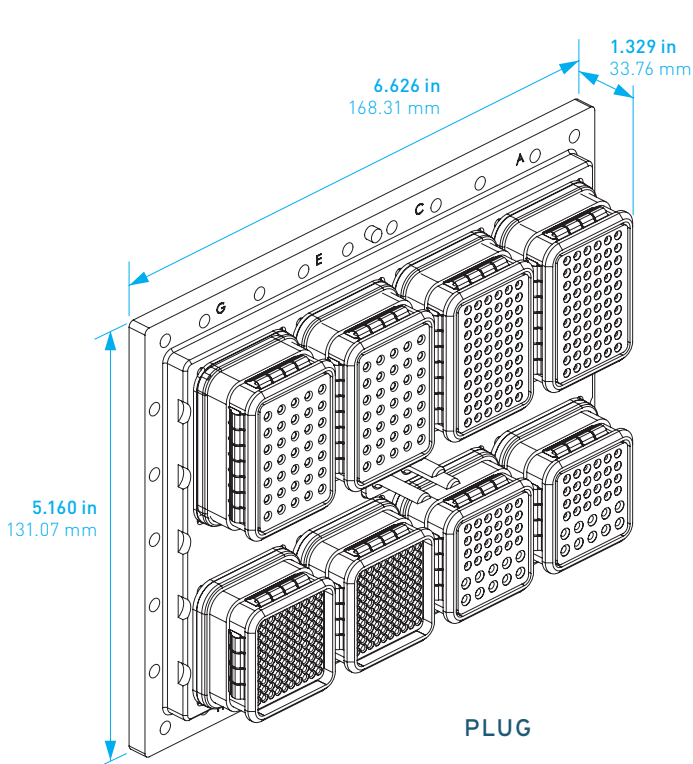


R27

Shell size 4



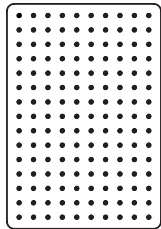
Shell size 6



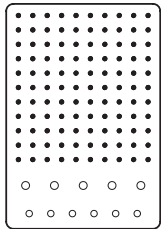
R27

Insert Pattern Availability[†]

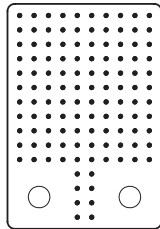
SIGNAL INSERT CAVITIES A, C, E & G



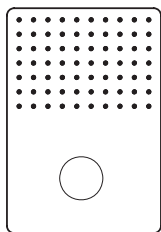
INSERT 150
(150) SIZE 22



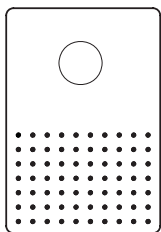
INSERT 121
(110) SIZE 22
(6) SIZE 20
(5) SIZE 16



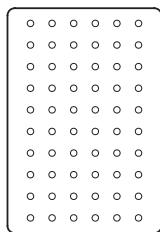
INSERT 120T2*
(118) SIZE 22
(2) SIZE 8 TWINAX



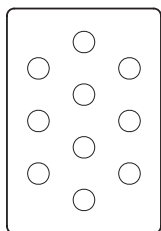
INSERT 71C1
(70) SIZE 22
(1) SIZE 1 COAX



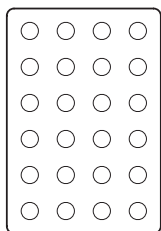
INSERT 71W1A
(70) SIZE 22
(1) SIZE 1 COAX



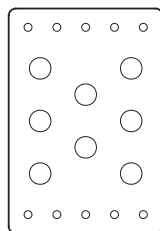
INSERT 60
(60) SIZE 20



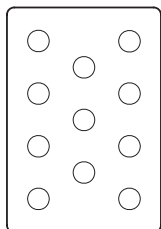
INSERT 10T10 (METAL)*
(10) SIZE 8 TRIAX/COAX



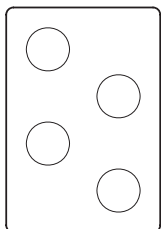
INSERT 24
(24) SIZE 12



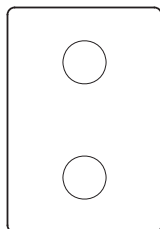
INSERT 18T8
(10) SIZE 16
(8) SIZE 8 TWINAX



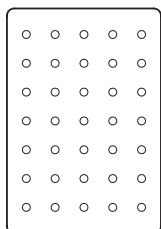
INSERT Q11 (METAL)*
(11) SIZE 8 QUADRIX



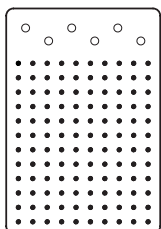
INSERT 4W4 (METAL)
(4) SIZE 1 COAX



INSERT 2W2 (METAL)
(2) SIZE 1 COAX



INSERT 35
(35) SIZE 16

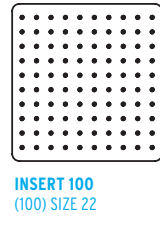


INSERT 126
(120) SIZE 22
(6) SIZE 16

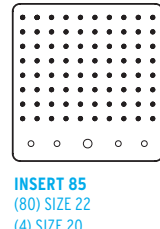


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SIGNAL INSERT

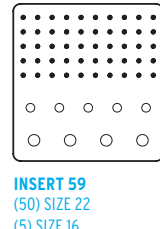
POWER INSERT CAVITIES B, D, F & H



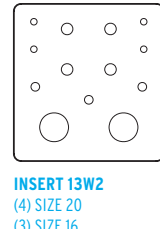
INSERT 100
(100) SIZE 22



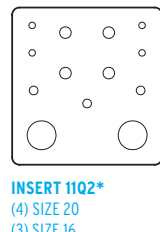
INSERT 85
(80) SIZE 22
(4) SIZE 20
(1) SIZE 16



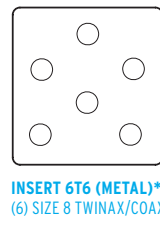
INSERT 59
(50) SIZE 22
(5) SIZE 16
(4) SIZE 12



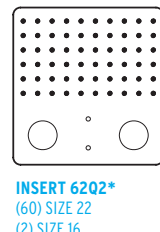
INSERT 13W2
(4) SIZE 20
(3) SIZE 16
(4) SIZE 12
(2) SIZE 5 COAX



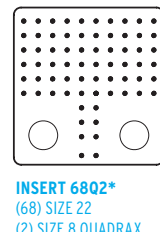
INSERT 11Q2*
(4) SIZE 20
(3) SIZE 16
(4) SIZE 12
(2) SIZE 8 QUADRIX



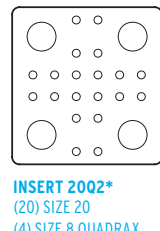
INSERT 6T6 (METAL)*
(6) SIZE 8 TWINAX/COAX



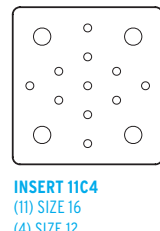
INSERT 62Q2*
(60) SIZE 22
(2) SIZE 16
(2) SIZE 8 QUADRIX



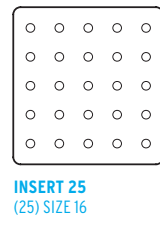
INSERT 68Q2*
(68) SIZE 22
(2) SIZE 8 QUADRIX



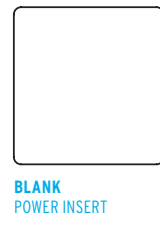
INSERT 20Q2*
(20) SIZE 20
(4) SIZE 8 QUADRIX



INSERT 11C4
(11) SIZE 16
(4) SIZE 12

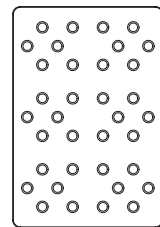


INSERT 25
(25) SIZE 16

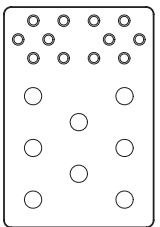


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POWER INSERT

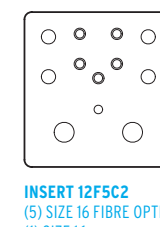
FIBRE OPTIC INSERTS CAVITIES A, C, E & G



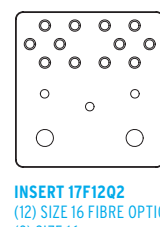
INSERT 36F36
(36) SIZE 16 FIBRE OPTIC



INSERT 20F12T8
(12) SIZE 16 FIBRE OPTIC
(8) SIZE 8 TWINAX/QUADRIX



INSERT 12F5C2
(5) SIZE 16 FIBRE OPTIC
(1) SIZE 16
(4) SIZE 12
(2) SIZE 5 COAX



INSERT 17F12Q2
(12) SIZE 16 FIBRE OPTIC
(3) SIZE 16
(2) SIZE 8 QUADRIX

CONTACT LEGEND

1 COAX	5 COAX	8 COAX TWINAX TRIAx QUADRIX	12 COAX	16 FIBRE	16	20	22

[†] Consult factory for further availability of insert combinations.

* Available with Quadrax or Triax/Coax

Contact Data

		Contact Size	Pin Part Number	Socket Part Number	Installation Tool	Removal Tool	Crimping Tool	Positioner	Wire	
									AWG	Insul. Dia. Max.
CRIMP	Std	22	AC-8010122-001	AC-8010222-001	M81969/1-01	M81969/1-01	M22520/2-01	M22520/2-23	22, 24, 26	.052" (1.32mm)
		20	AC-8010120-001	AC-8010220-001	M81969/1-02	M81969/1-02	M22520/2-01 or M22520/7-01	M22520/2-08 or M22520/7-02	20, 22, 24	.060" (1.52mm)
		16	AC-8010116-001	AC-8010216-001	M81969/1-03	M81969/1-03	M22520/1-01 or M22520/7-01	M22520/1-02 or M22520/7-03 (blue)	16, 18, 20	.080" (2.03mm)
		12	AC-8010112-001	AC-8010212-001	M81969/4-01	M81969/28-02	M22520/1-01	M22520/1-11	12, 14	.114" (2.90mm)
	RF	1 Coaxial	AC-8C01PC01-XX*	AC-8C01SC01-XX*	N/A	N/A	M22520/5-01	M22520/5-25	N/A	N/A
		5 Coaxial	AC-8C05PC01-XXY*	AC-8C05SC01-XXY*	M81969/28-01	M81969/28-01	INNER: M22520/2-01 OUTER: M22520/5-01	K-345 Setting no. 5 Daniels manufacturing approved equivalent	N/A	N/A
		12 Coaxial	AC-8C12PC01-XX*	AC-8C12SC01-XX*	M81969/1-03	M81969/1-03	INNER: M22520/2-01 OUTER: M22520/4-01	INNER: EN4008-13 OUTER: EN4008-14	N/A	N/A
		16 Coaxial	AC-8C16PC01-XX*	AC-8C16SC01-XX*	M81969/28-02	M81969/28-02	INNER: M22520/2-01 OUTER: M22520/31-01	INNER: EN4008-15 OUTER: EN4008-17	N/A	N/A
		8 Twinax	AC-8T08PC01-XXY*	AC-8T08SC01-XXY*	M81969/14-06	M81969/14-06	INNER: M22520/2-01 INTERMEDIATE & OUTER: M22520/5-01	INNER: M22520/2-37 INTERMEDIATE & OUTER: M22520/5-104 or M22520/5-200	N/A	N/A
		8 Quadrax	AC-8Q08PC01-XXY*	AC-8Q08SC01-XXY*	M81969/28-03	M81969/28-03	INNER: M22520/2-01 OUTER: M22520/5-01	INNER: Daniels K709 (M22520/2-37) OUTER: M22520/5-45	N/A	N/A
PCB EXT .250" NOM	Std	22 FR-FR	N/A	AC-8010422-101	485-937-22	M81969/1-01	N/A	N/A	Tail Ø .025" (.635mm)	
		22 RR-RR	N/A	AC-8010522-101	485-937-23	M81969/1-01	N/A	N/A	Tail Ø .025" (.635mm)	
		20 RR-RR	AC-8010320-101	N/A	M81969/1-02	M81969/1-02	N/A	N/A	Tail Ø .033" (.838mm)	
		16 RR-RR	AC-8010316-101	N/A	M81969/1-03	M81969/1-03	N/A	N/A	Tail Ø .059" (1.499mm)	
		12 RR-RR	AC-8010312-101	N/A	M81969/4-01	M81969/28-02	N/A	N/A	Tail Ø .078" (1.981mm)	
	RF	12 Coaxial RR-RR	AC-8C12PP03-01	N/A	M81969/1-03	M81969/1-03	N/A	N/A	N/A	N/A
		16 Coaxial RR-RR	AC-8C16PP03-01	N/A	M81969/28-02	M81969/28-02	N/A	N/A	N/A	N/A
		8 Twinax RR-RR	AC-8T08PP03-01	N/A	M81969/14-06	M81969/14-06	N/A	N/A	N/A	N/A
		8 Quadrax FR-FR	AC-8Q08PP01-01	N/A	485-909-46-08	485-909-46-08	N/A	N/A	N/A	N/A

FR-FR = Front Release, Front Removable
RR-RR = Rear Release, Rear Removable

* CRIMP RF CABLE DESIGNATOR

Size	XX	Cable name	Y
12 Coaxial	O1	RG179	N/A
	O2	RG316	
	O3	RG178	
16 Coaxial	O1	RG179	N/A
	O2	RG316	
	O3	RG178	
1 Coaxial	O1	RG 58	N/A
	O2	RG316	
	O3	RG174	
	O4	RG400	
5 Coaxial	O1	RG58	E Environmental with sealing & Alignment Boot
	O2	RG141	
	O3	RG142	
8 Twinax	O1	Tensolite 24463/9P025X-2(LD)	A Non- environmental with Alignment Boot
	O2	Gore GSC-12-2548-00	
	O3	Grumman GC875TM24H	
8 Quadrax	O1	Draka Filica F4703-3 & F4704-4	N Non- environmental without Alignment Boot
	O2	Tensolite NF24Q100	
	O3	Tensolite 26743102006X-4(LD) or GORE RCN8328	

THE AMPHENOL ADVANTAGE

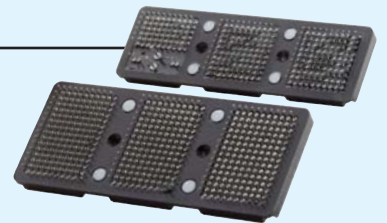
Filter Connectors

- Reduced inspection and assembly labour
- High frequency EMI performance superior to a board-level filter solution
- Superior shielding effectiveness
- Solderless design



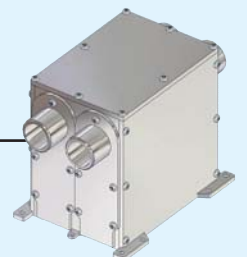
Termination Modules

- Eliminates exposure of connector to soldering and cleaning process
- Allows for easy repair of damaged socket contacts
- Easy installation and removal from motherboard facilitates repair and rework
- Guideposts guarantee proper alignment during installation
- Optional rubber interfacial seal protects connector from environment



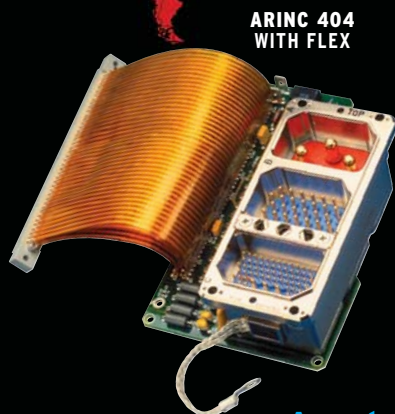
Backshells

- Provides strain relief and EMI shielding
- Multiple cable entry points available
- Custom configurations available

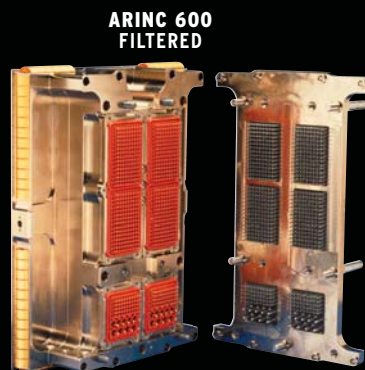


AMPHENOL – INNOVATION ON A GLOBAL SCALE

BUENOS AIRES, ARGENTINA	CESKY BROD, CZECH REPUBLIC	LAS LOMAS, MEXICO	CLINTON, USA
MELBOURNE, AUSTRALIA	OSTROV, CZECH REPUBLIC	MEXICALI, MEXICO	DANBURY, USA
CAMPINAS, BRAZIL	AIRVAULT, FRANCE	HOUTEN, NETHERLANDS	EDICOTT, USA
SAN JOSE DOS CAMPOS, BRAZIL	BLAGNY, FRANCE	CONCOURSE, SINGAPORE	HAMDEN, USA
MOUNT ROYAL, CANADA	COURBEVOIE, FRANCE	SANDTON, SOUTH AFRICA	HARRISBURG, USA
REFREW, CANADA	THYEZ, FRANCE	CHUNG NAM-DO, SOUTH KOREA	LIBERTY, USA
SAINT HUBERT, CANADA	HEILBRONN, GERMANY	STOCKHOLM, SWEDEN	LISLE, USA
TORONTO, CANADA	KRESSBERG-MARKTLUSTENAU, GERMANY	GUEISHAN, TAIWAN	MILPITAS, USA
WINNIPEG, CANADA	GERMANY	REN-DER SHIANG, TAIWAN	MOORPARK, USA
BAOAN, CHINA	SAARLOUIS, GERMANY	TAOYUAN, TAIWAN	NASHUA, USA
CHANGZHOU, CHINA	TSIM SHA TSUI, HONG KONG	EL FAHS, TUNISIA	NOGALES, USA
GONG MING TOWN, CHINA	PUNE, INDIA	ISTANBUL, TURKEY	PEABODY, USA
GUANGZHOU, CHINA	BLANCHARDSTOWN, IRELAND	ROMSEY, UK	ROCKFORD, USA
HANGZHOU, CHINA	MILANO, ITALY	WHISTABLE, UK	ROCKWALL, USA
PUDONG, CHINA	SHIGA, JAPAN	ALLEN, USA	SIDNEY, USA
SONG JIANG, CHINA	YOKOHAMA, JAPAN	BLOOMFIELD, USA	STAFFORD, USA
TIANJIN, CHINA	BUCHAEON, KOREA	BROCKTON, USA	VERNON HILLS, USA
WUJIN, CHINA	HWASUNG, KOREA	CANTON, USA	WALLINFORM, USA
XIAMEN, CHINA	PENANG, MALAYSIA	CHATHAM, USA	WEST PALM BEACH, USA



ARINC 404
WITH FLEX



ARINC 600
FILTERED

Amphenol Canada

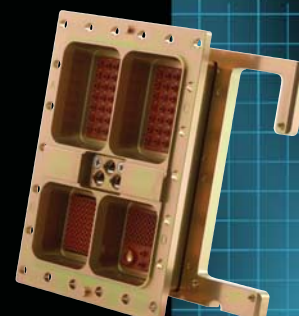
Amphenol Canada Corp. offers a comprehensive range of filtered and rectangular connector products for Commercial, Military and Aerospace applications.



R58
(M83733 AND JN1122)



R39
(RECTANGULAR 38999)



R27
CUSTOM

Amphenol

FILTERED AND RECTANGULAR CONNECTORS

Amphenol Canada Corporation
605 Milner Avenue
Toronto, ON, Canada M1B 5X6

Factory Direct: (416) 291-4401
Fax: (416) 292-0647
www.amphenolcanada.com