Amphenol

164-SERIES
WATERPROOF AUDIO CONNECTORS
ACR 164 0709

Amphenol

Introduction

Amphenol 164 series connectors are water resistant, five & six pin contact electrical connectors for use in low voltage audio frequency circuits & applications. They employ three-point bayonet coupling for quick disconnect & self wipe contact.

These connectors are extensively used in military communication equipments, where high reliability is paramount & severe environmental conditions are encountered.

Amphenol 164 series connectors are qualified to MIL specification MIL-DTL-55116. They are intermatable with any other manufacturers product which is designed as per MIL-DTL-55116.

	Page
Introduction	1
Specifications, Material & Finishes	2
QPL Approval Letter	3-4
Five & Six Pin Audio Plug Connector Crimp Sleeve Terminal (U-229-Type) Products	5
Five & Six Pin Audio Plug Connector Solder Cup Terminal (U-229S-Type) Products	6
Five & Six Pin Audio Plug Connector Crimp Sleeve Terminal (U-182-Type) Products	7
Five & Six Pin Audio Plug Connector Solder Cup Terminal (U-182S-Type) Products	8
Five & Six Pin Audio Receptacle Panel Mount Connector-Solder (U-183/U Type & U-283/U Type) Products	9
Five & Six Pin Audio Receptacle Connector Crimp Sleeve Terminal (U-228/U Type & U-328/U Type) Products	10
Five & Six Pin Audio Receptacle Connector Solder Cup Terminal (U-228/U Type & U-328/U Solder Type) Products	11
List Of Part Numbers	12
Ordering Information	13
Special Products	15-20

ELECTRICAL

Operating Current	500 m A per contact
Operating Voltage	60V max.
Contact Resistance	0.050 ohms max.
Insulation Resistance	1000 M ohm @ 100 V DC
Dielectric Strength	500V rms

MECHANICAL

Number of Contacts	5 or 6
Air Pressure	2.5 PSI
Durability	3000 cycles, mate & unmate.
Immersion	48 hrs. At 6ft.

Environmental

Operating Temperature	-55^{0} C to $+85^{0}$ C.

Material & Finishes

Part	Material	Finish
Shell & Nut	Stainless Steel	Sand Blasted
Insulator	Diallyphthalate as per ASTM D5948 Type SDG-F	-
Contact	Copper Alloy - Brass	0.75µm Gold over Nickel

Defence Logistics Agency
Defence Supply Centre, Columbus
Post Office Box 3990
Columbus, OH 43218-3990

MAR 18 2009

DSCC-VQP-09-017606 (Mr. Funk/614-692-6608/jf)
Subject: Qualification for MIL-DTL-55116
DSCC Test Report Number 55116-2285-08
FSC 5935, Preparing Activity:DLA-CC

Amphenol Interconnect India Pvt. Ltd.
105, Bhosari Industrial Estate
Pune-411026 (India)

We have received Amphenol Interconnect India's test report and supporting data dated February 18, 2009. Qualification of your products is granted under the Military Specification Sheets listed below as a result of providing exhibit samples that demonstrate your capability to manufacture these products to Military Specification MIL-DTL-55116.

Supplier: Amphenol Interconnect India Pvt. Ltd.	**Supplier: Amphenol Interconnect India Pvt. Ltd.**
Government Designation: M55116/1-( )	Government Designation: M55116/2-( )
Manufacturer's Designation: 164-229-( )	Manufacturer's Designation: 164-229-6-( )
Cable Accommodation: 1, 2, 3, 4, 5	Cable Accommodation: 1, 2, 3, 4, 5
Test or Qualification Reference: 55116-2285-08	Test or Qualification Reference: 55116-2285-08
Supplier: Amphenol Interconnect India Pvt. Ltd.	**Supplier: Amphenol Interconnect India Pvt. Ltd.**
Government Designation: M55116/3-( )	Government Designation: M55116/4-( )
Manufacturer's Designation: 164-229-S-( )	Manufacturer's Designation: 164-229-6S-( )
Cable Accommodation: 1, 2, 3, 4, 5	Cable Accommodation: 1, 2, 3, 4, 5
Test or Qualification Reference: 55116-2285-08	Test or Qualification Reference: 55116-2285-08
Supplier: Amphenol Interconnect India Pvt. Ltd.	**Supplier: Amphenol Interconnect India Pvt. Ltd.**
Government Designation: M55116/5-( )	Government Designation: M55116/6-( )
Manufacturer's Designation: 164-182-( )	Manufacturer's Designation: 164-182-6-( )
Cable Accommodation: 1, 2, 3, 4, 5	Cable Accommodation: 1, 2, 3, 4, 5
Test or Qualification Reference: 55116-2285-08	Test or Qualification Reference: 55116-2285-08
Supplier: Amphenol Interconnect India Pvt. Ltd.	**Supplier: Amphenol Interconnect India Pvt. Ltd.**
Government Designation: M55116/7-( )	Government Designation: M55116/8-( )
Manufacturer's Designation: 164-182-S( )	Manufacturer's Designation: 164-182-6S-( )
Cable Accommodation: 1, 2, 3, 4, 5	Cable Accommodation: 1, 2, 3, 4, 5
Test or Qualification Reference: 55116-2285-08	Test or Qualification Reference: 55116-2285-08

Supplier: Amphenol Interconnect India Pvt. Ltd.	Supplier: Amphenol Interconnect India Pvt. Ltd.
Government Designation: M55116/9-( )	Government Designation: M55116/10-( )
Manufacturer's Designation: 164-183-( )	Manufacturer's Designation: 164-183-6-( )
Cable Accommodation: 0	Cable Accommodation: 0
Test or Qualification Reference: 55116-2285-08	Test or Qualification Reference: 55116-2285-08
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Manufacturer's Designation: 164-228-( )	Manufacturer's Designation: 164-228-6-( )
Cable Accommodation: 1, 2, 3, 4, 5	Cable Accommodation: 1, 2, 3, 4, 5
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Manufacturer's Designation: 164-228-S-( )	Manufacturer's Designation: 164-228-6S-( )
Cable Accommodation: 1, 2, 3, 4, 5	Cable Accommodation: 1, 2, 3, 4, 5
Test or Qualification Reference: 55116-2285-08	Test or Qualification Reference: 55116-2285-08

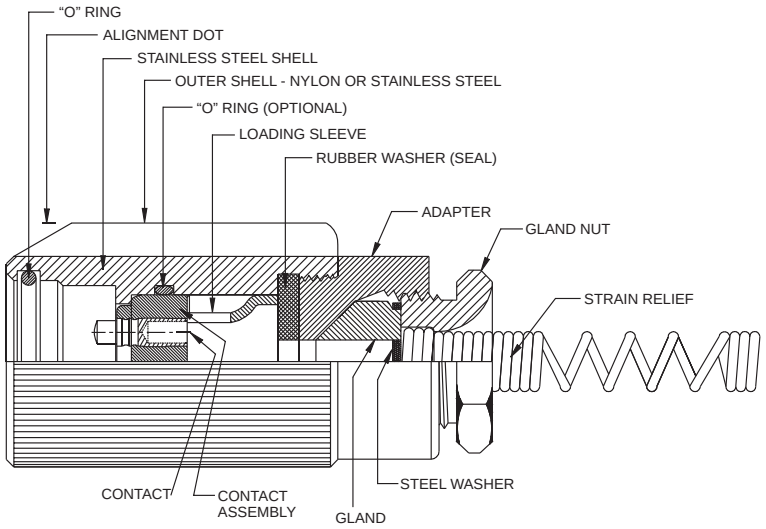
A detailed listing of the connector type under the Military Specification Sheet will be listed on the Qualified Products List (QPL) 55116. This qualification is subject to the conditions stated in DoD 4120.24-M and SD-6.

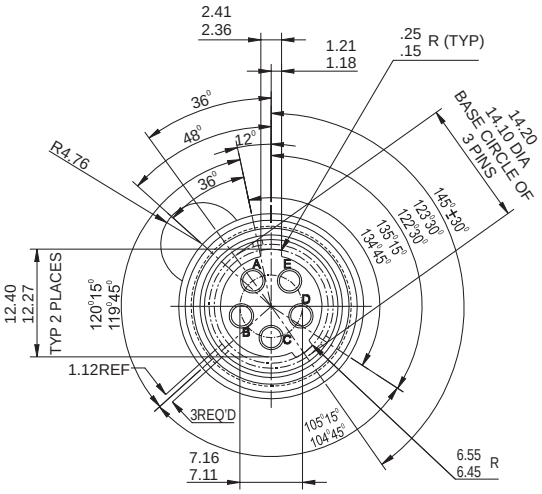
Because we are held responsible for the accuracy and currency of this QPL, please let us know if your company discontinues production of these products.

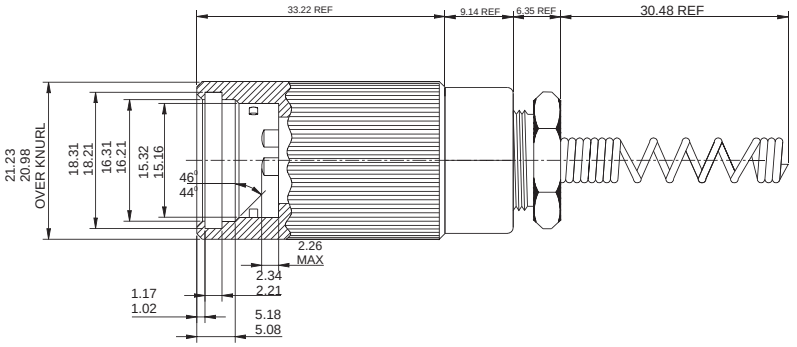
If you have any questions concerning this letter, please contact Mr. Funk at 614-692-6608 or email Jeremy.Funk@dla.mil.

Sincerely,

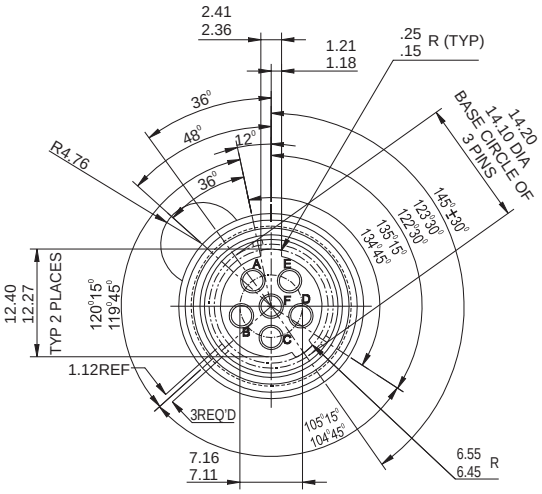
JOSEPH GEMPERLINE
Chief
Sourcing and Qualifications Division

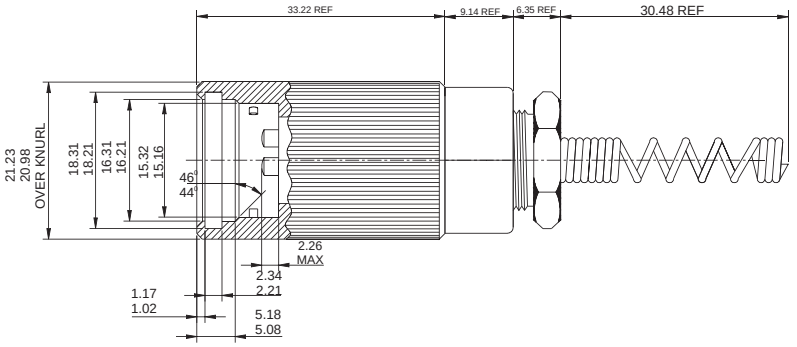






M55116/1-X





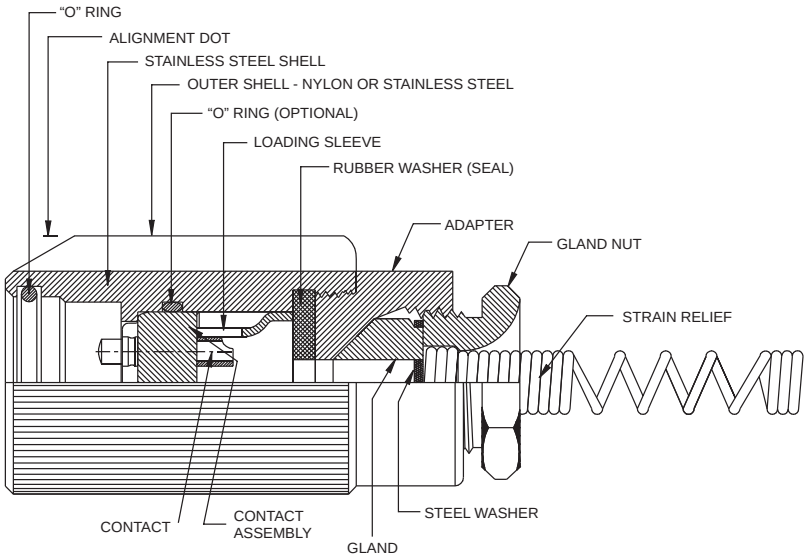
M55116/2-X

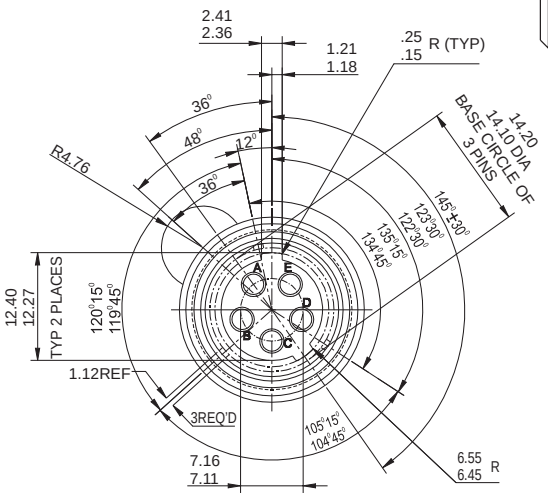
Sr No.	Description	MIL Designation	Amphenol Designation
1	5 Pin Audio plug connector with crimp sleeve terminal & wire strain relief	M55116/1-X	164-229-X
2	6 Pin Audio plug connector with crimp sleeve terminal & wire strain relief	M55116/2-X	164-229-6-X

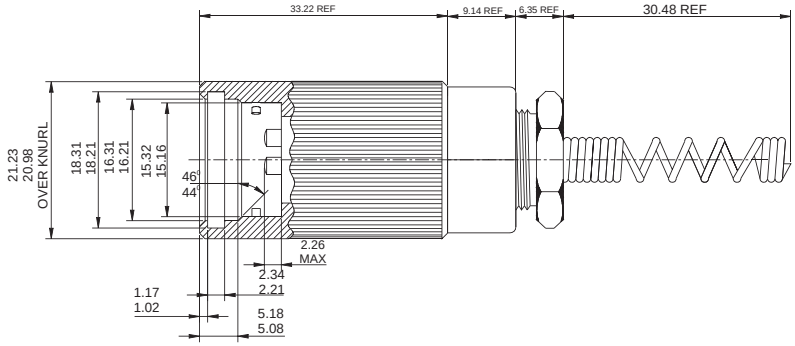
Dash no-X	Cable diameter
-0	N/A
-1	4.19 ± 0.25
-2	5.79 ± 0.25
-3	6.35 ±0.25
-4	7.36 ± 0.25
-5	8.12 ± 0.25

X Stands for the Cable size accommodation, is identified by a dash number as shown in above table. This number indicates the outside diameter of the cable that the connector will accommodate.

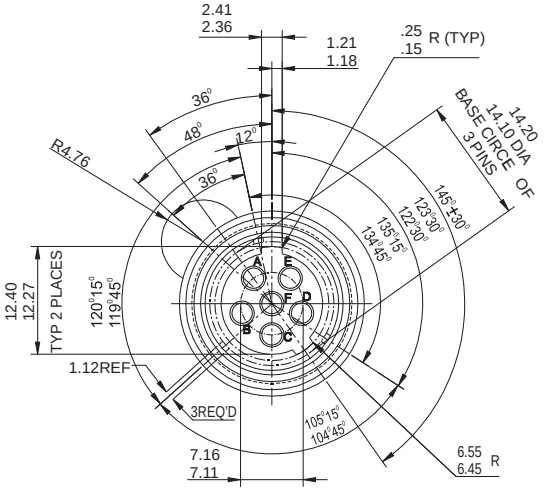
Five & Six Pin Audio Plug Connector Solder Cup Terminal

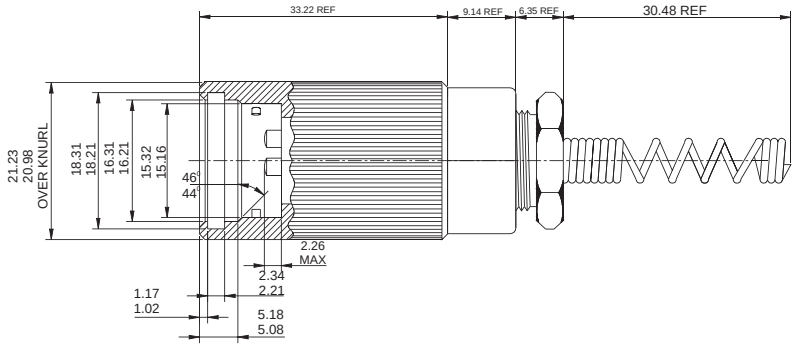






M55116/3-X



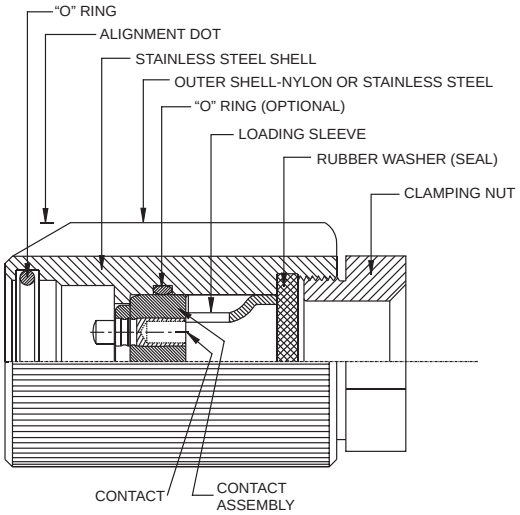


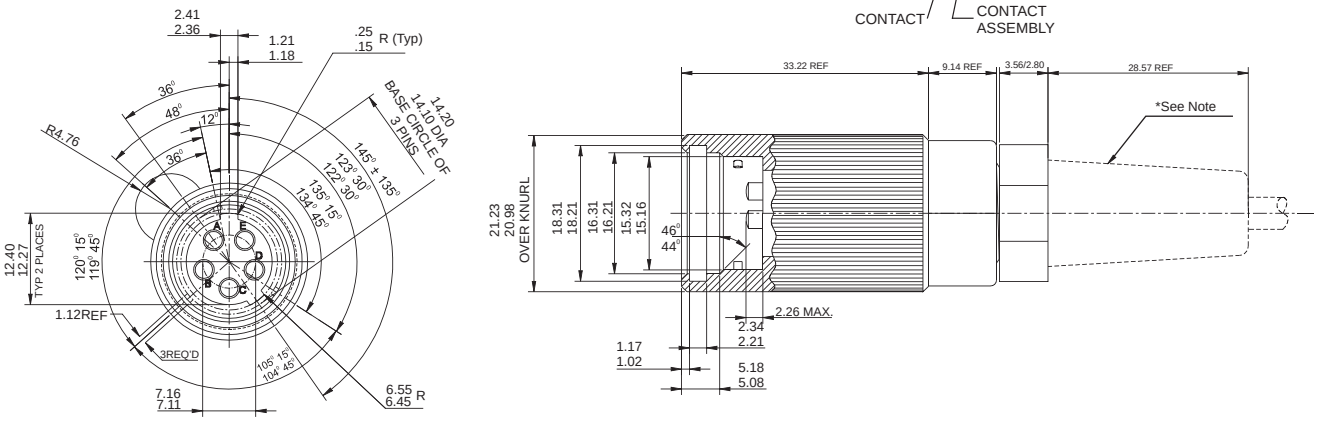
M55116/4-X

Sr No.	Description	MIL Designation	Amphenol Designation
1	5 Pin Audio plug connector with Solder Cup Terminal & wire strain relief	M55116/3-X	164-229-S-X
2	6 Pin Audio plug connector with Solder Cup Terminal & wire strain relief	M55116/4-X	164-229-6S-X

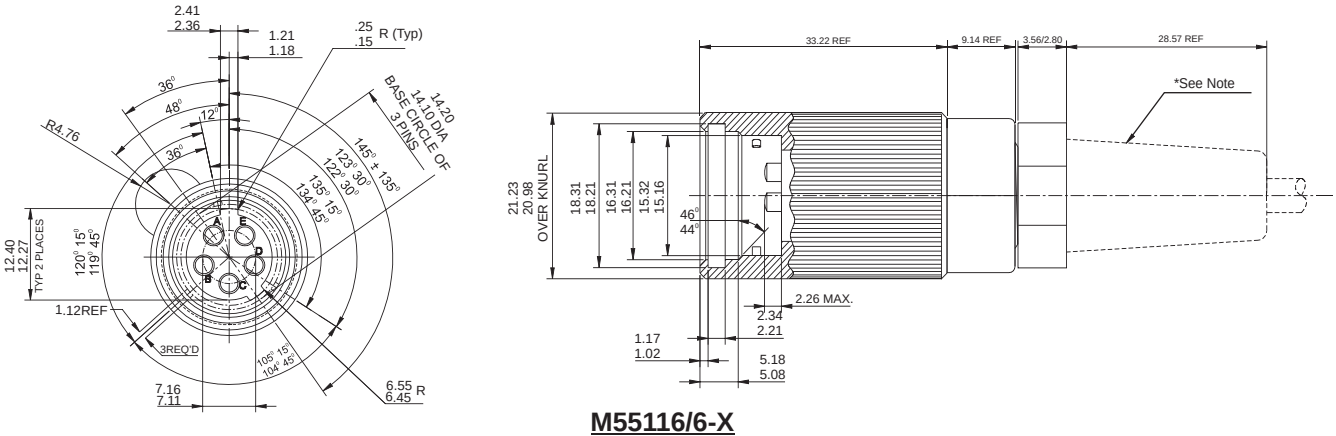
Dash no-X	Cable diameter
-0	N/A
-1	4.19 ± 0.25
-2	5.79 ± 0.25
-3	6.35 ±0.25
-4	7.36 ± 0.25
-5	8.12 ± 0.25

X Stands for the Cable size accommodation, is identified by a dash number as shown in above table. This number indicates the outside diameter of the cable that the connector will accommodate.





M55116/5-X



M55116/6-X

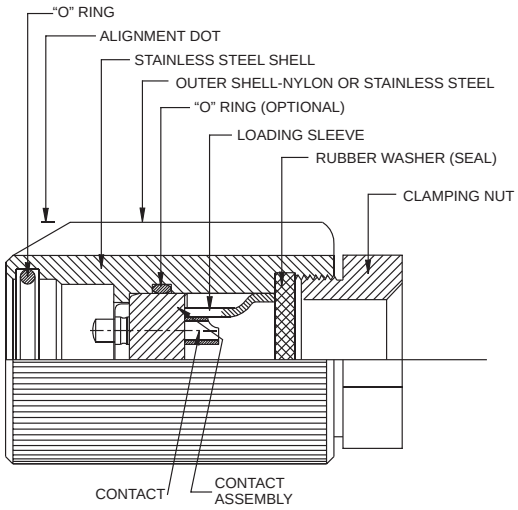
Sr No.	Description	MIL Designation	Amphenol Designation
1	5 Pin Audio plug connector with crimp sleeve terminal & molded strain relief (Not supplied)	M55116/5-X	164-182-X
2	6 Pin Audio plug connector with crimp sleeve terminal & molded strain relief (Not supplied)	M55116/6-X	164-182-6-X

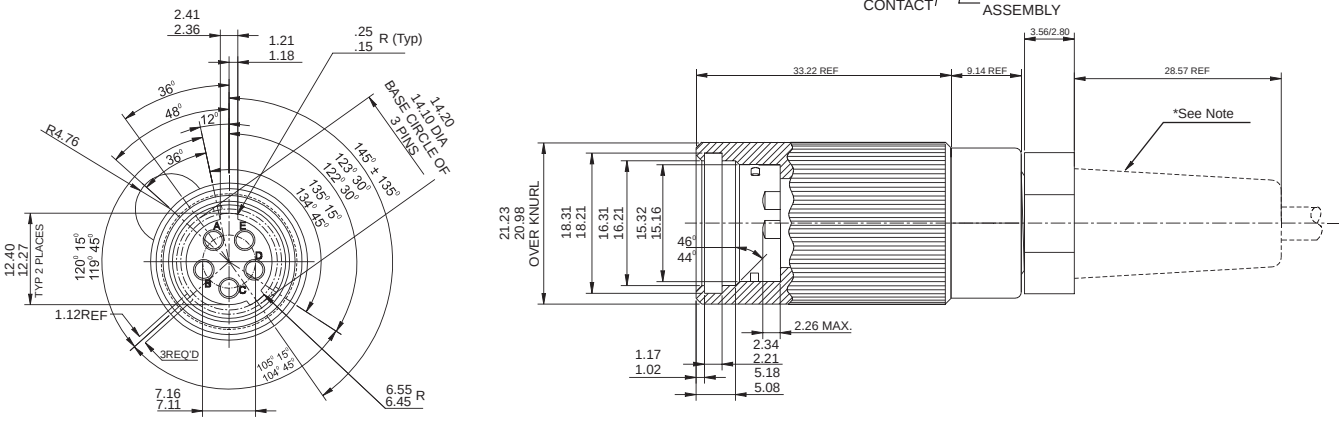
Dash no-X	Cable diameter
-0	N/A
-1	4.19 ± 0.25
-2	5.79 ± 0.25
-3	6.35 ±0.25
-4	7.36 ± 0.25
-5	8.12 ± 0.25

X Stands for the Cable size accommodation, is identified by a dash number as shown in above table. This number indicates the outside diameter of the cable that the connector will accommodate.

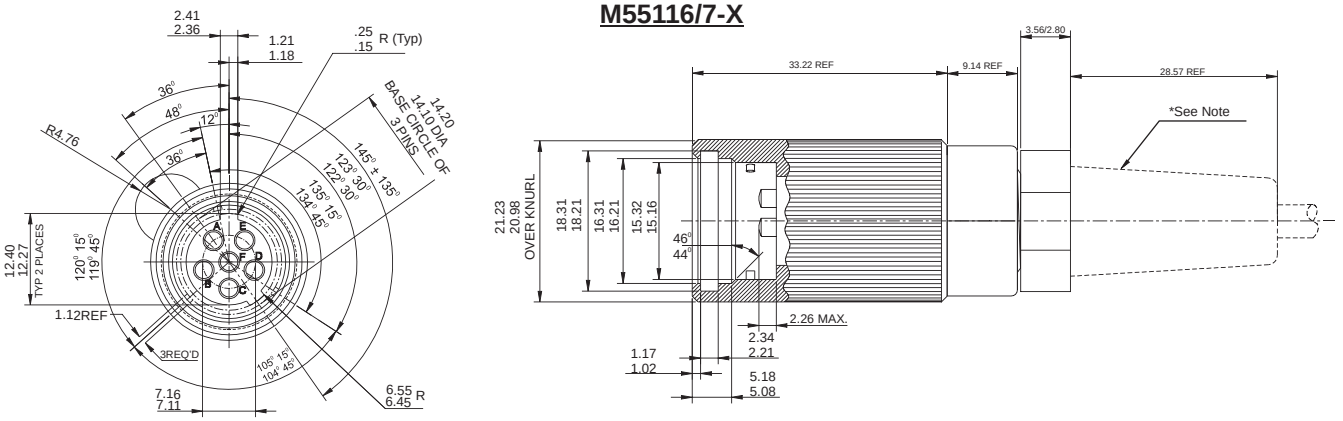
*Nylon molded strain relief on request

Five & Six Pin Audio Plug Connector Solder Cup Terminal





M55116/7-X



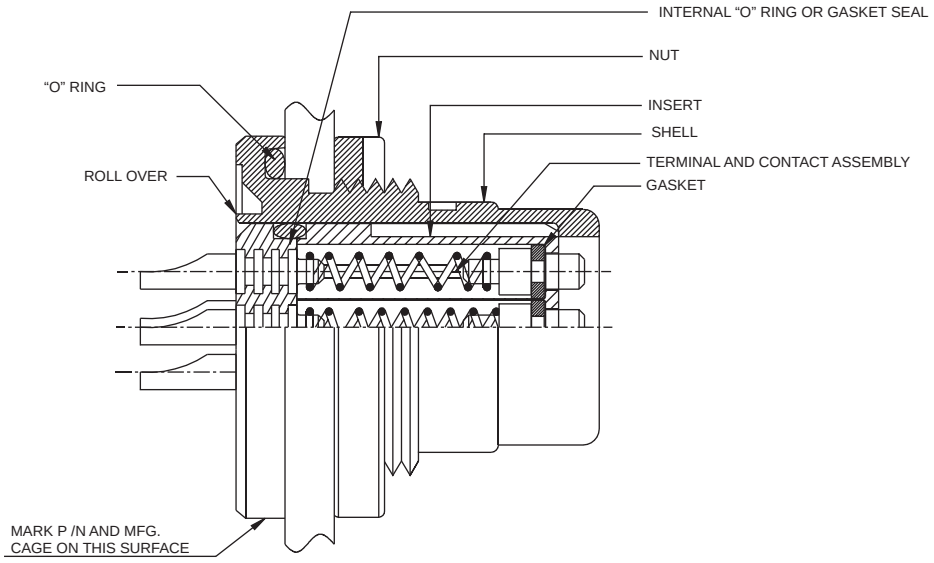
M55116/8-X

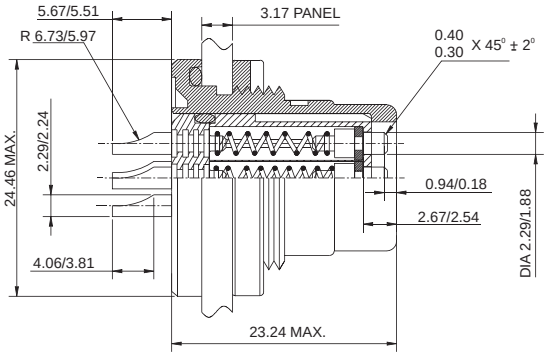
Sr No.	Description	MIL Designation	Amphenol Designation
1	5 Pin Audio plug connector with Solder Cup Terminal & molded strain relief (Not Supplied)	M55116/7-X	164-182-S-X
2	6 Pin Audio plug connector with Solder Cup Terminal & molded strain relief (Not Supplied))	M55116/8-X	164-182-6S-X

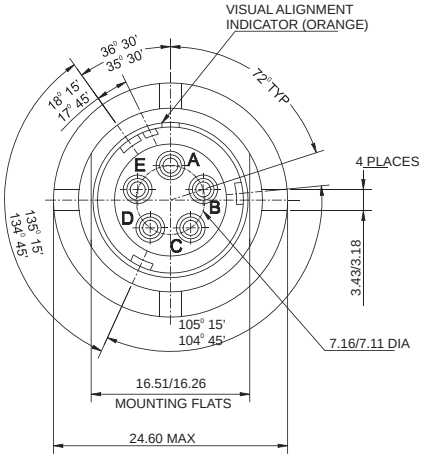
Dash no-X	Cable diameter
-0	N/A
-1	4.19 ± 0.25
-2	5.79 ± 0.25
-3	6.35 ±0.25
-4	7.36 ± 0.25
-5	8.12 ± 0.25

X Stands for the Cable size accommodation, is identified by a dash number as shown in above table. This number indicates the outside diameter of the cable that the connector will accommodate.

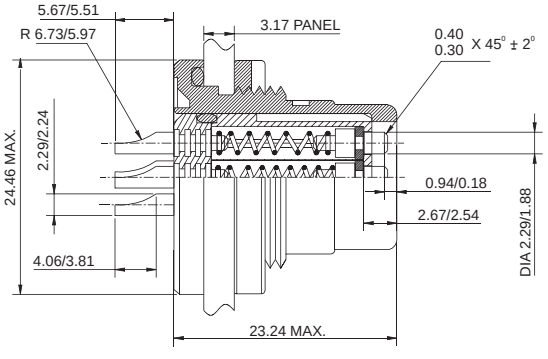
*Nylon molded strain relief on request

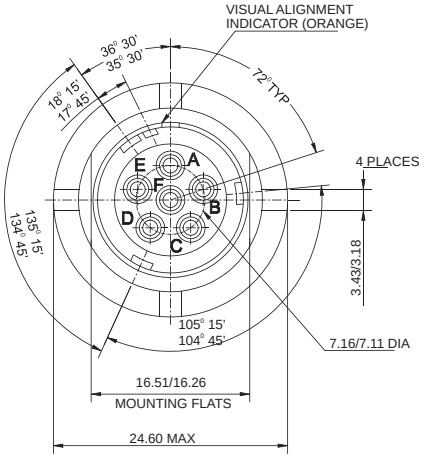






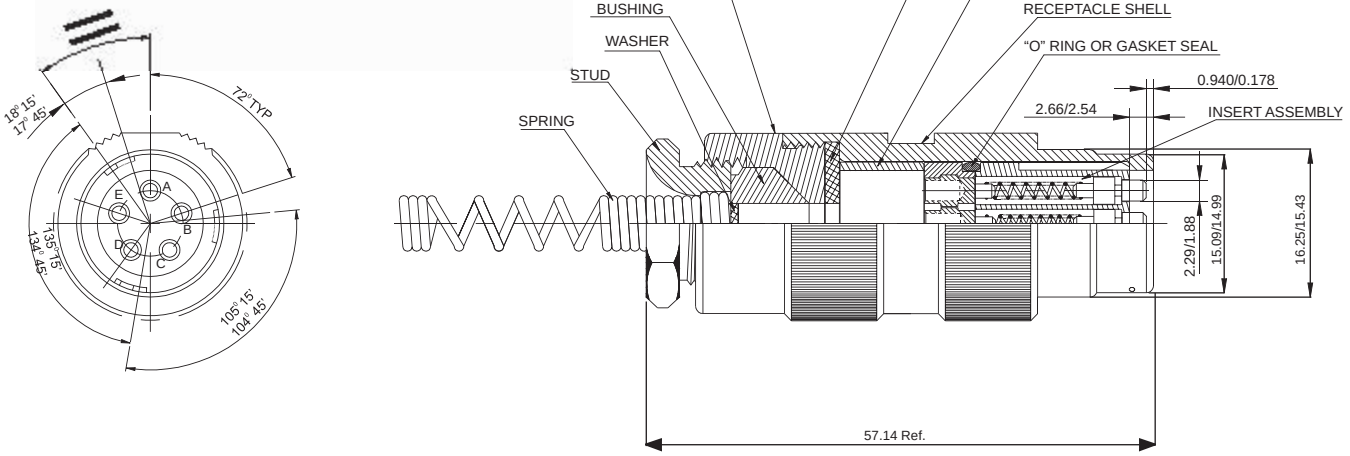
M55116/9



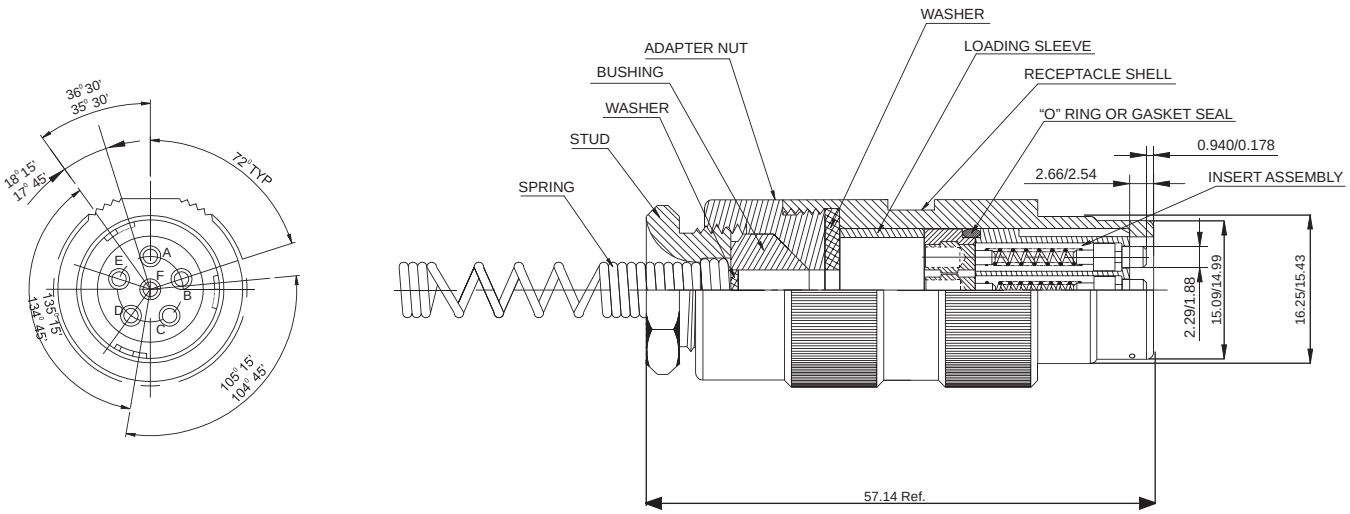


M55116/10

Sr No.	Description	MIL Designation	Amphenol Designation
1	5 Pin Audio Receptacle with solder cup terminal, Panel Mount	M55116/9	164-183
2	6 Pin Audio Receptacle with solder cup terminal, Panel Mount	M55116/10	164-183-6



M55116/11-X

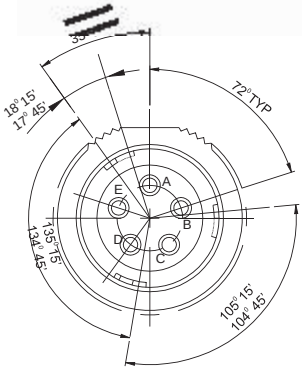


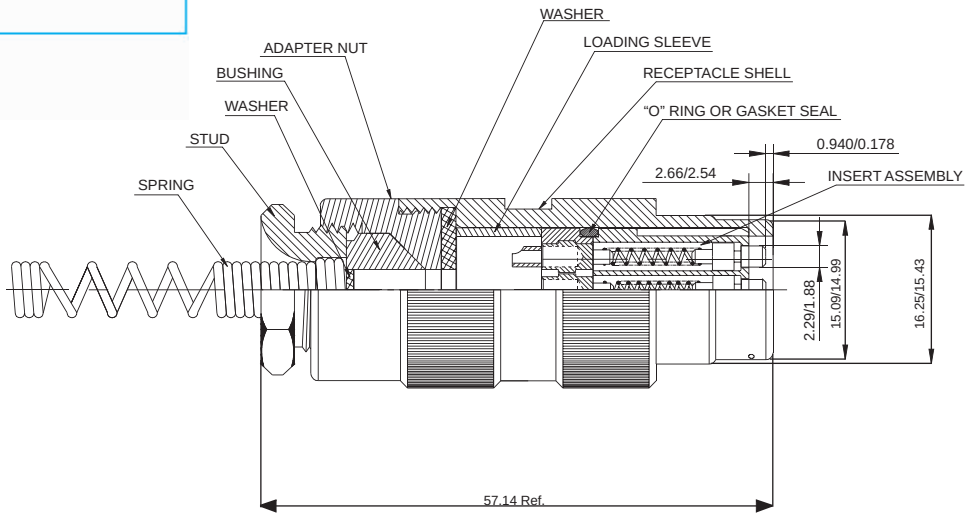
M55116/12-X

Sr No.	Description	MIL Designation	Amphenol Designation
1	5 Pin Audio Receptacle with Crimp sleeve terminal & wire strain relief	M55116/11-X	164-228-X
2	6 Pin Audio Receptacle with Crimp sleeve terminal & wire strain relief	M55116/12-X	164-228-6-X

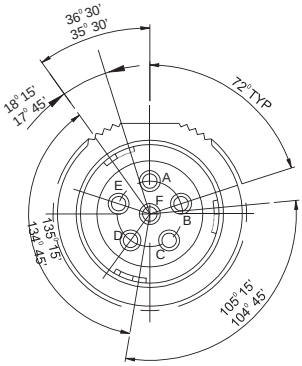
Dash no-X	Cable diameter
-0	N/A
-1	4.19 ± 0.25
-2	5.79 ± 0.25
-3	6.35 ±0.25
-4	7.36 ± 0.25
-5	8.12 ± 0.25

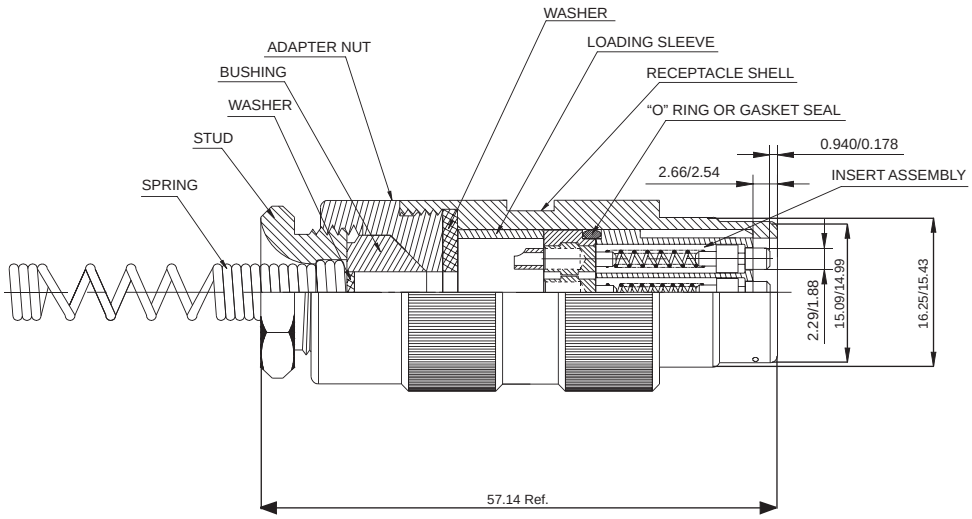
X Stands for the Cable size accommodation, is identified by a dash number as shown in above table. This number indicates the outside diameter of the cable that the connector will accommodate.





M55116/13-X





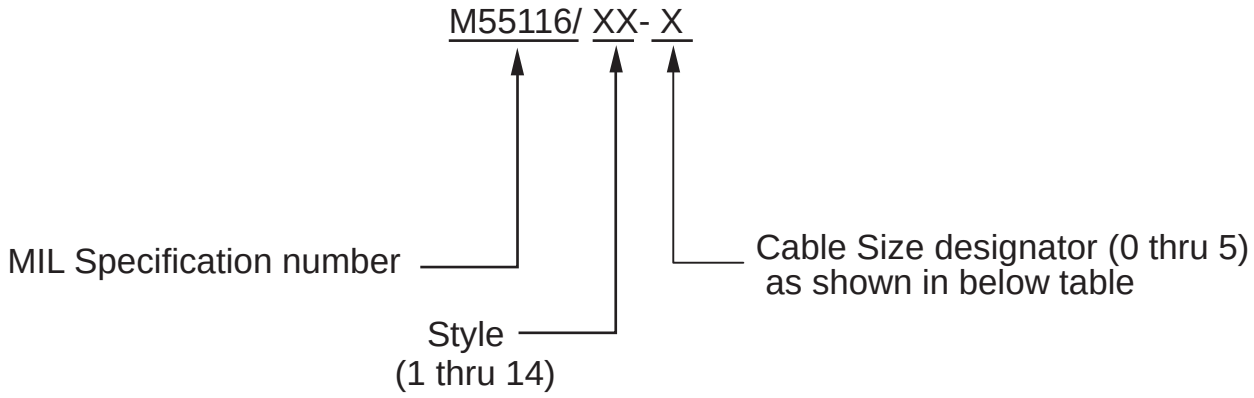
M55116/14-X

Sr No.	Description	MIL Designation	Amphenol Designation
1	5 Pin Audio Receptacle with solder cup terminal & wire strain relief	M55116/13-X	164-228-S-X
2	6 Pin Audio Receptacle with solder cup terminal & wire strain relief	M55116/14-X	164-228-6S-X

Dash no-X	Cable diameter
-0	N/A
-1	4.19 ± 0.25
-2	5.79 ± 0.25
-3	6.35 ±0.25
-4	7.36 ± 0.25
-5	8.12 ± 0.25

X Stands for the Cable size accommodation, is identified by a dash number as shown in above table. This number indicates the outside diameter of the cable that the connector will accommodate.

Sr. No.	MIL Specification Designation	Amphenol Designation
1	M55116/1-1	164-229-1
2	M55116/1-2	164-229-2
3	M55116/1-3	164-229-3
4	M55116/1-4	164-229-4
5	M55116/1-5	164-229-5
6	M55116/2-1	164-229-6-1
7	M55116/2-2	164-229-6-2
8	M55116/2-3	164-229-6-3
9	M55116/2-4	164-229-6-4
10	M55116/2-5	164-229-6-5
11	M55116/3-1	164-229-S-1
12	M55116/3-2	164-229-S-2
13	M55116/3-3	164-229-S-3
14	M55116/3-4	164-229-S-4
15	M55116/3-5	164-229-S-5
16	M55116/4-1	164-229-6S-1
17	M55116/4-2	164-229-6S-2
18	M55116/4-3	164-229-6S-3
19	M55116/4-4	164-229-6S-4
20	M55116/4-5	164-229-6S-5
21	M55116/5-1	164-182-1
22	M55116/5-2	164-182-2
23	M55116/5-3	164-182-3
24	M55116/5-4	164-182-4
25	M55116/5-5	164-182-5
26	M55116/6-1	164-182-6-1
27	M55116/6-2	164-182-6-2
28	M55116/6-3	164-182-6-3
29	M55116/6-4	164-182-6-4
30	M55116/6-5	164-182-6-5
31	M55116/7-1	164-182-S-1
32	M55116/7-2	164-182-S-2
33	M55116/7-3	164-182-S-3
34	M55116/7-4	164-182-S-4
35	M55116/7-5	164-182-S-5
36	M55116/8-1	164-182-6S-1
37	M55116/8-2	164-182-6S-2
38	M55116/8-3	164-182-6S-3
39	M55116/8-4	164-182-6S-4
40	M55116/8-5	164-182-6S-5
41	M55116/9	164-183
42	M55116/10	164-183-6
43	M55116/11-1	164-228-1
44	M55116/11-2	164-228-2
45	M55116/11-3	164-228-3
46	M55116/11-4	164-228-4
47	M55116/11-5	164-228-5
48	M55116/12-1	164-228-6-1
49	M55116/12-2	164-228-6-2
50	M55116/12-3	164-228-6-3
51	M55116/12-4	164-228-6-4
52	M55116/12-5	164-228-6-5
53	M55116/13-1	164-228-S-1
54	M55116/13-2	164-228-S-2
55	M55116/13-3	164-228-S-3
56	M55116/13-4	164-228-S-4
57	M55116/13-5	164-228-S-5
58	M55116/14-1	164-228-6S-1
59	M55116/14-2	164-228-6S-2
60	M55116/14-3	164-228-6S-3
61	M55116/14-4	164-228-6S-4
62	M55116/14-5	164-228-6S-5

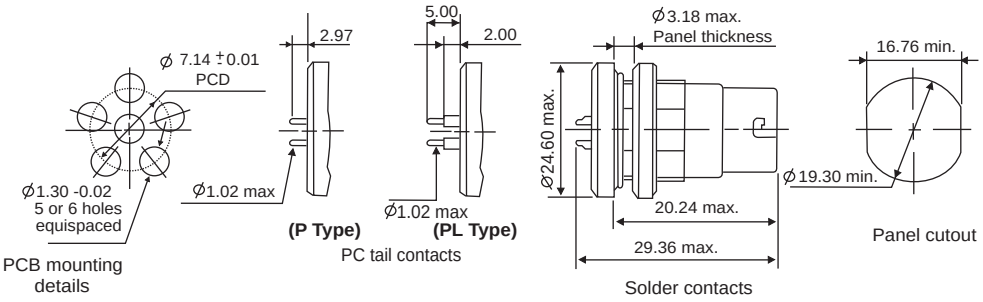


Dash no-X	Cable diameter
-0	N/A
-1	4.19 ± 0.25
-2	5.79 ± 0.25
-3	6.35 ±0.25
-4	7.36 ± 0.25
-5	8.12 ± 0.25

Note : Standard plug connector supplied with nylon over molding. For Stainless Steel version please add prefix S01 at the end of part number ordering information.

Special Products

Receptacles With PC Tail Contacts



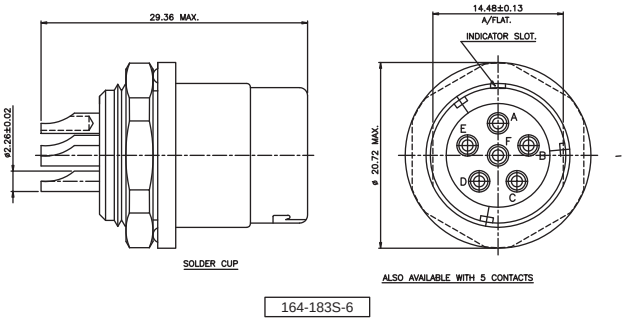
Barrel Rigid Contact
(Crimp Sleeve Terminal)

Solder Rigid Contact
(Solder Cup Terminal)

All dimensions in mm

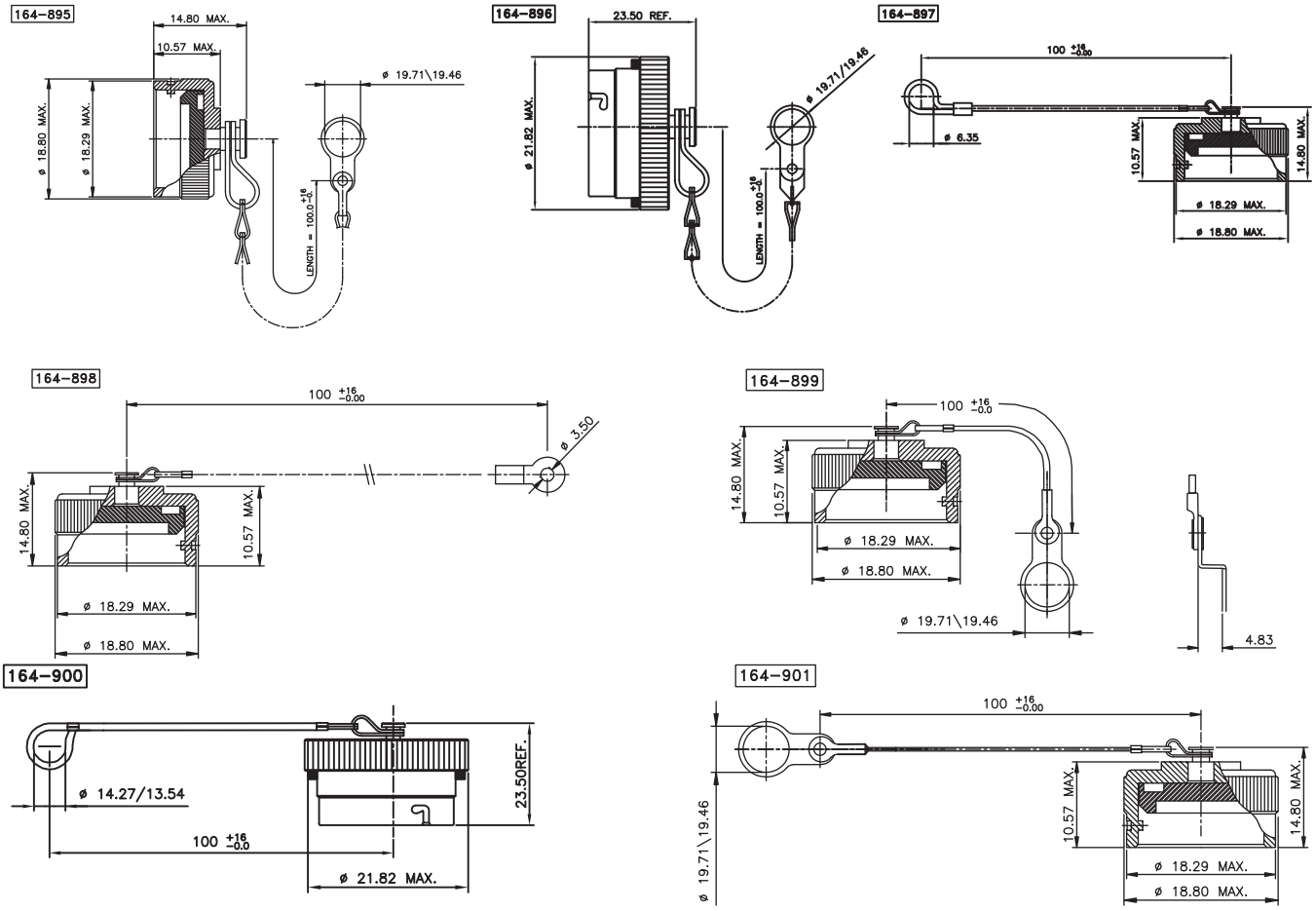
Part Number	No. of Contacts	Contact Type	Mates With
164-183-P	5	PC tail spring loaded	164-229, 164-229-S, 164-182
164-183-PL	5	PC tail spring loaded	164-182-S,164-182-L, 164-182-LS
164-183-6P	6	PC tail spring loaded	164-229-6, 164-229-6S, 164-182-6
164-183-6PL	6	PC tail spring loaded	164-182-6S, 164-182-6L

Rear Mount Receptacles 6 Pins



Note: For 5 Pin connector contact Factory

Accessories - Caps For 5 & 6 Pin Connectors



ORDERING INFORMATION FOR 164 DUST CAP

164 **895** **CD** **LXX**

Series Designation
164. MIL 55116 Audio Connector Caps
Shell Style

895:-Receptacle dust caps for 5 & 6 pin audio connector with chain & solid ring

896:-Plug dust caps for 5 & 6 pin audio connector with chain & solid ring

897:-Receptacle dust caps for 5 & 6 pin audio connector with nylon rope & loop

898:-Receptacle dust caps for 5 & 6 pin audio connector with nylon rope & SS lug

899:-Receptacle dust caps for 5 & 6 pin audio connector with SS rope & lug

900:-Receptacle dust caps for 5 & 6 pin audio connector with SS rope & loop

901:-Receptacle dust caps for 5 & 6 pin audio connector with nylon rope & solid ring

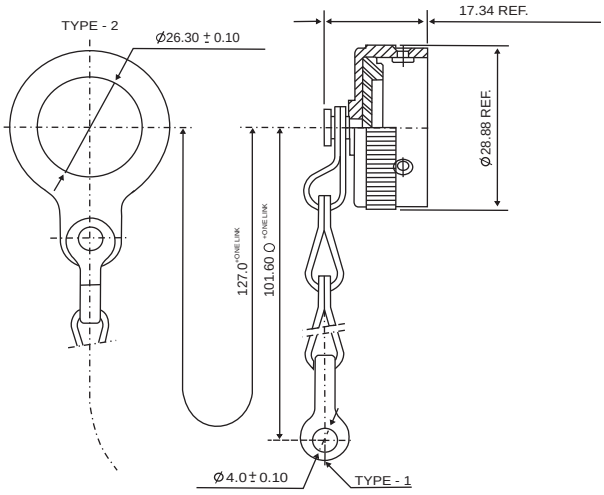
Special Deviation for length for standard none for Non std. mention length in mm

Finish
Standard Black anodic caps
CD - Cadmium olive green finish
622 - Zn Co olive green finish
624 - Zn Co black finish

MATERIAL

Cover	: Machined Alluminium Alloy
Gasket	: Silicon elastomer
Chain	: Stainless steel passivated
Ring	: Stainless steel passivated
SS Rope	: Stainless steel teflon coated
Rope	: Nylon (olive green)
Fastners	: Stainless steel passivated

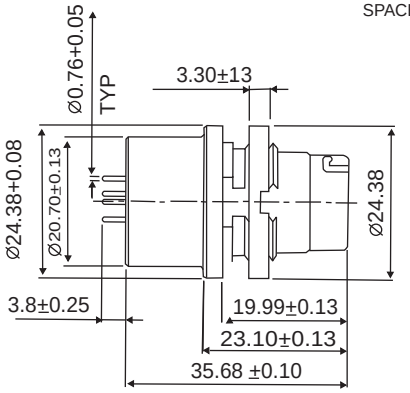
Dust Cap for 10 Pin Receptacle

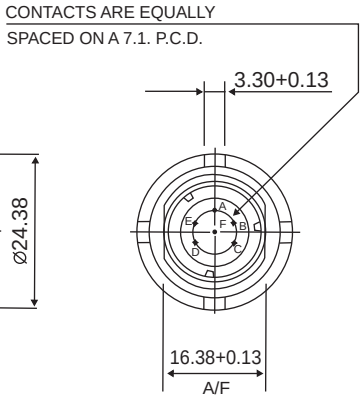


All dimensions in mm — Table 1

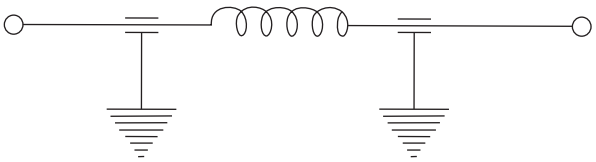
Dust Cap No.	Link Type	Cap Finish
164-377	Type-2	Black Anodised
164-377-714	Type-2	Cadmium Plate with Electroless Under Coat
164-377-01	Type-1	Black Anodised
164-377-01-714	Type-1	Cadmium Plate with Electroless Under Coat

164F-1836B -527 Filtered Audio Receptacle Connector

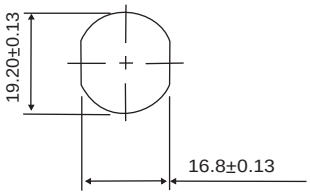




SCHEMATIC DIAGRAM OF 'Pi' FILTER



PANEL CUTOUT



164F - 1836B -527 Filtered Audio Receptacle Connector

SPECIFICATIONS (Technical Data):

MATERIALS

Shell and Panel Nut	: Stainless Steel
Contacts	: Copper Alloy
Insulator	: Diallyl Pthalate Per MIL-M-14 Type MDG/Polyethersulfone

FINISH COLOUR

Shell and Panel Nut	:Sand blasted & Passivated
Contacts	:0.75µThick Gold Plate Over Nickel Undercoat 2.54µ
Insulator	:Blue/Black

ELECTRICAL PROPERTIES

Operating Voltage	:60V Max . Potential
Current Rating	:0.5A Max.
Dielectric Breakdown	:300V DC
Insulation Resistance	:1000M Ohms
Contact Resistance(Mated)	:0.050 Ohms Max.

MECHANICAL PROPERTIES

Air pressure	:2.5 P.S.I.
Water Immersion	:48 Hrs. At 6 Feet
Durability	:3000 Cycles Mate and Unmate

OPERATING TEMPERATURE RANGE : -55 ^{0}C TO 85 ^{0}C

AMPHENOL 164 F-1836B-527 RECEPTACLE MATES WITH:

Amphenol 164 -229 -6
Amphenol 164-229-6S

164F - 186B - 527 Filtered Audio Receptacle Connector

CONNECTOR MEETS ALL REQUIREMENT OF MIL-C-55116/5081

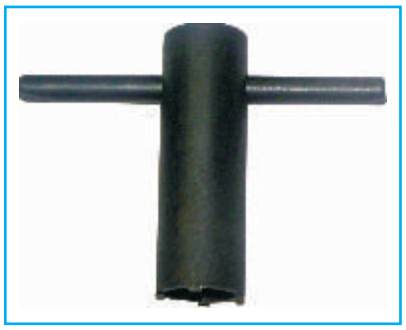
FILTER SPECIFICATIONS:

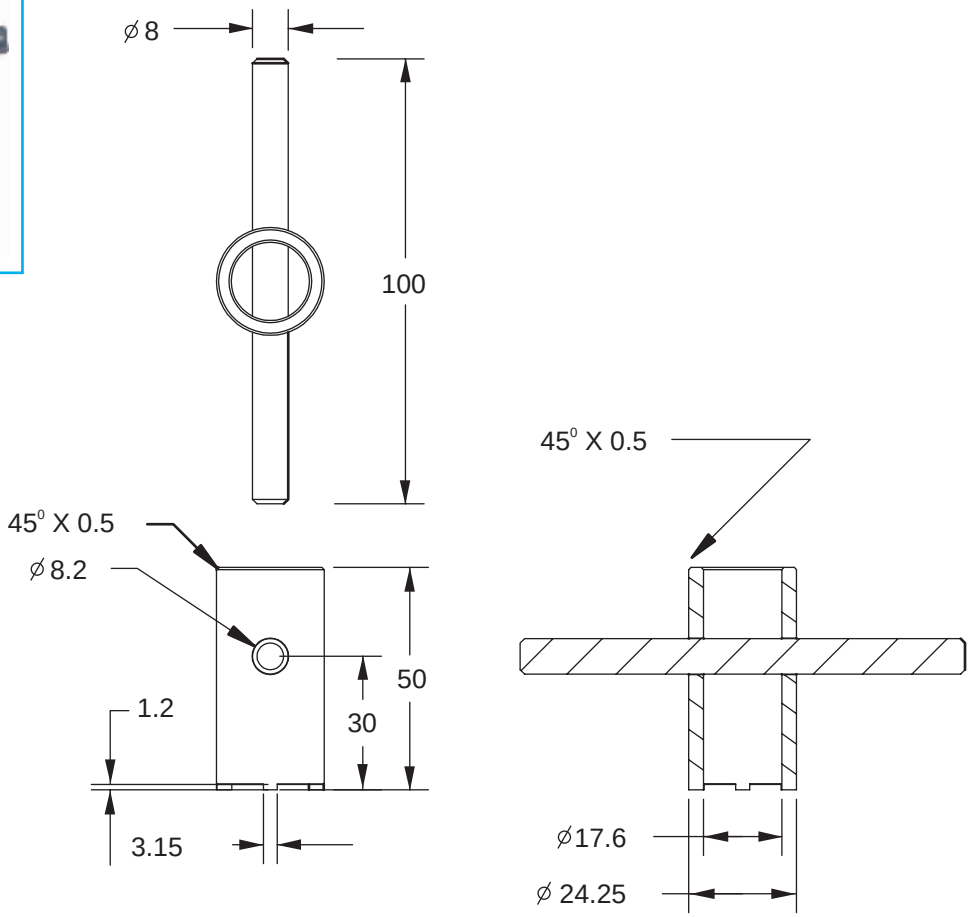
Capacitance (1KHz, 25^0)	:8000PF TYP
Insertion Loss (TYP.)	
(MIL-STD-220, No Load 25^0)	:1Mhz - 4dB :10Mhz - 25dB :50Mhz - 60dB
Working Voltage	:100DVC
Dielectric Voltage Breakdown	:300VDC
Insulation Resistance (100VDC, 25^0 C)	:10000 Mohms Min.
RF Current	:0.25 A Max.

METHOD OF DESIGNATION

Connector Number	Description	No. Of Contacts	Contact Termination
164F-1836B-527	164 Filtered Audio Receptacle Connector	6	PC Tail

Tightening Spanner (164-T001)
(Panel nut tightening for 164-183 Connector)





Notice: All information, including illustrations given herein is believed to be accurate at the time of printing. In lieu of design advances, Amphenol reserves the right to change specifications without notice. This publication Series 164 Connectors dt. 15-07-10 supercedes all existing Amphenol literature on Series 164 Connectors.

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