

## RUGGEDIZED CONNECTORS AND SWITCHES



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## ABOUT AMPHENOL NEXUS TECHNOLOGIES:

Since 1961, Amphenol NEXUS Technologies connectors have become the standard in military and commercial communication headset markets. Today, Amphenol NEXUS Technologies connectors are typically specified in OEM headset applications where “breakaway-style” audio connectors are required. Amphenol NEXUS Technologies switches have a very strong, ‘tactile-feedback’ feature that makes them ideal for applications that require a positive means of knowing that the switch has actuated. In addition, Amphenol NEXUS Technologies switches are designed for applications that require a durable, reliable and cost effective switching means. Other applications of Amphenol NEXUS Technologies connectors and pushbutton switches are in Auto Racing, Powerboat Racing, Telecommunications, Simulation Controls, Medical Products, Farm Equipment, and Commercial Aviation Electronics.

Amphenol NEXUS Technologies currently operates out of a 16,000 sq ft. facility, which is located in Stamford, CT. Amphenol NEXUS Technologies currently has over 60 employees, many of whom have been with Amphenol NEXUS Technologies for over 20 years. Amphenol NEXUS Technologies facilities and equipment include: thermoset and thermoplastic molding machines, stamping presses, numerous assembly fixtures, CNC Tool Room, Heat Treating equipment, Special Plating equipment, Testing Lab, Clean Room for switch assembly, CAD (Computer Aided Design), and other special proprietary processes that are designed to manufacture dependable quality products.

Amphenol NEXUS Technologies’ Quality Assurance System meets or exceeds the requirements of MIL-I-45208, MIL-Q-9858, MIL-STD-45662, and the sampling requirements of MIL-STD-105. We also use SPC to selectively monitor critical processes, which helps ensure process capability. We are currently on the U.S. Government’s QPL (Qualified Products List) for the following military specifications: MIL-DTL-9177, MIL-DTL-55116, and MIL-S-8805/3. All at Amphenol NEXUS Technologies, look forward to serving you with products that meet your satisfaction. Please contact us today to discuss your requirements.

### OUR FACILITY:

- CNC Machining
- Thermoset and Thermoplastic Molding Machines
- Stamping Presses
- Numerous Assembly Fixtures
- Heat Treating Equipment
- CAD (Computer Aided Design)
- Tool Room, Test Lab, Clean Room
- Specialty Proprietary Processes

### MARKETS SERVED:

- Military Radio Systems
- Military Ground Vehicles
- Missiles and Ordnance
- Commercial and Military Aerospace
- Telecommunications
- Medical Products
- Naval
- Simulation Controls
- Auto and Powerboat Racing





## TECHNOLOGIES OVERVIEW:

### SCOPE:

We specialize in designing and manufacturing high quality audio-style connectors, electro-mechanical devices, low voltage connectors, push button switches, and more.

### LEGACY:

We have over 50 years of solving unique customer needs quickly. Most of our product lines were born out of rapidly designing the right solution for a customer issue.

### LOOKING AHEAD:

As part of the Amphenol Military and Aerospace group, we can collaborate to provide unmatched product and technological solutions for any system need.

## PRODUCTS :

### TELEPHONE PLUGS AND JACKS

4, 5, 6 and 8-conductor plugs, jacks, and panel-mount jacks, Jack-switch combinations are available.



### MICROPHONE PLUGS AND JACKS

2 and 3-pin with custom overmolded designs.



### 7 AND 10-CONDUCTOR WATERPROOF BREAKAWAY CONNECTORS

Overmolded or wire-strain relief available. Solder or insulation piercing contacts for tool-less assembly. Miniature versions 50% smaller than the standards.



### M55116-TYPE CONNECTORS

Mil-spec qualified for all shell styles and cable sizes. Many custom shielded designs, including right angle plugs and miniaturized TAC Series, which is less than half the size of standard M55116.

### PUSH BUTTON SWITCHES

MIL-C-8805 qualified. 50,000 mechanical cycles. Momentary snap or push-pull versions. Many variations available with mounting types, button styles, colors, and watertight.

### OTHER CUSTOM DESIGNS

Specialized Missile Launch connectors, Downhole Rotatable Connectors for drilling operations, and many others.

## TECHNOLOGIES :



### DECREASED CONNECTOR SIZE

Plug and receptacle diameter at .500 inches for our miniaturized lines, 40% smaller than D38999 size 9 plug connector.



### SPECIAL FEATURES

Shielded and grounded versions of most connectors available. Higher level builds, such as filter connectors, cable assemblies, and flex assemblies also available when collaborating with Amphenol sister divisions.



### HARSH ENVIRONMENT

Waterproof, both mated and unmated, in 6 feet of water. Temperature range: -55C to +85C. Up to 5,000 mating cycles for most connectors. Also dust/debris proof.



(Bayonet)

### VARIOUS MATING STYLES

Bayonet coupling; Blind-Mate connectors; Quick-Disconnect/Breakaway Connectors, using <15lbs mating/unmating force without a lanyard.



(Breakaway)



### MULTIPLE CONTACT OPTIONS

Molded-in wiping action or spring-loaded contacts come with multiple termination options: solder, crimp, insulation piercing for tool-less assembly, PCB tails.

## MARKETS SERVED :

Amphenol NEXUS Technologies proudly serves the following markets:

C4 Systems  
Soldier Systems  
Military Vehicles

Commercial Aerospace  
Missiles/ Ordnance  
Naval

Commercial/ Industrial  
Telecommunications  
Simulation Controls

Medical Products  
Auto/Powerboat Racing  
Many Others

## FACILITY FACTS :

- Part of the Amphenol Family since July 2008
- Operates out of a 16,000 square foot facility
- Over 50 employees with more than 20 years of experience



## TELEPHONE PLUGS AND JACKS:

|   |                                |                     |
|---|--------------------------------|---------------------|
| <b>Shells:</b>                          | Plastic                        |                     |
| <b>Contacts:</b>                        | Plugs:                         | Nickel-plated Brass |
|   | Jacks:                         | Monel               |
| <b>Solder Contact Terminals:</b>        | Pre-tinned over nickel plating |                     |
| <b>Contact Resistance:</b>              | ≤ .02Ω                         |                     |
| <b>Insulation Resistance:</b>           | ≥ 1,000 mΩ                     |                     |
| <b>Dielectric Withstanding Voltage:</b> | ≥ 500 V RMS                    |                     |
| <b>Insertion Force:</b>                 | 13 lbs maximum                 |                     |
| <b>Withdrawal Force:</b>                | 6 -10 lbs                      |                     |

Amphenol NEXUS Technologies has been a long-time manufacturer and qualified military supplier of airborne audio connectors, see MIL-DTL-9177. Our special ruggedized design has been the industry standard on military and commercial helmets and headsets for many years.

In addition to the military qualified parts, we offer a number of connector options for different mounting styles, switch functions, and soldier attachments. Electrical, mechanical, and environmental features of these connectors include:

- Environment Resisting
- RFI/EMI Protection
- Low-level Circuit Capabilities
- High Cross-talk Resistance

This connector design isn't just limited to communications systems. Other markets are exploring the benefits of the quick-disconnect, rotatable connector design for harsh environments including drilling systems and other commercial/industrial applications.

# RUGGEDIZED TELEPHONE PLUGS:



TP-120

**Conductors:** 4  
**Conductor Type:** Nickel-Plated Brass  
**Description:** 1-Piece contacts molded into a plastic body.



TP-120-5

**Conductors:** 4  
**Conductor Type:** Nickel-Plated Brass  
**Description:** No plastic housing and strain relief clip; for custom molding directly to cable



TP-120-7

**Conductors:** 4  
**Conductor Type:** Nickel-Plated Brass  
**Description:** No plastic housing; for custom molding directly to cable



TP-101

**Mil-Spec Designation:** U-174/U M9177/2-1  
**Conductors:** 4  
**Conductor Type:** Monel  
**Description:** 1-Piece contacts molded into a plastic body.



TP-102

**Mil-Spec Designation:** U-93A/U M9177/1-1  
**Conductors:** 4  
**Conductor Type:** Nickel-Plated Brass  
**Description:** 1-piece contacts molded into a plastic body; accommodates larger cable diameter



TP-105

**Mil-Spec Designation:** U-384/U M642/14-01  
**Conductors:** 5  
**Conductor Type:** Monel  
**Description:** 1-Piece contacts molded into a red plastic body.



TP-106

**Conductors:** 6  
**Conductor Type:** Nickel-Plated Brass and BeCu  
**Description:** 6-Conductor Biaxial Shielded Plug



TP-108

**Conductors:** 8  
**Conductor Type:** Nickel-Plated Brass and BeCu  
**Description:** 8-Conductor Biaxial Shielded Plug



TPSJ-101

**Conductors:** 4  
**Conductor Type:** Monel and Nickel-Plated BeCu  
**Description:** Telephone Plug with DPDT slide switch and MJ-101 jack section

# RUGGEDIZED TELEPHONE JACKS:



TJ-120

**Conductors:** 4  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** Flange Rear-Mounted Jack



TJG-120

**Conductors:** 5  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** Flange Rear-Mounted Jack; with an extra contact added in a normally open circuit with the #1 contact. Insertion of a 4-conductor plug closes the #1-5 contact circuit.



TJS-120

**Conductors:** 5  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** Flange Rear-Mounted Jack; with an extra contact added in a normally closed circuit with the #1 contact. Insertion of a 4-conductor plug closes the #1-5 contact circuit.



TJT-120

**Conductors:** 4  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** Threaded Front-Mounted Jack



TJGT-120

**Conductors:** 5  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** Threaded Front-Mounted Jack; with an extra contact added in a normally open circuit with the #1 contact. Insertion of a 4-conductor plug closes the #1-5 contact circuit.



TJ-101

**Conductors:** 4  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** In-Line Jack; Contacts molded into a plastic body



TJ-102

**Mil-Spec Designation:** U-92A/U M9177/3-1  
**Conductors:** 4  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** In-Line Jack; Contacts molded into a plastic body; accommodates larger cable diameter



TJ-105

**Mil-Spec Designation:** U-385/U M641/22-01  
**Conductors:** 5  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** In-Line Jack; contacts molded into a red plastic body



TJ-106

**Conductors:** 6  
**Conductor Type:** Nickel-Plated Brass and BeCu  
**Description:** In-Line 6-Conductor Biaxial Shielded Jack



TJ-108

**Conductors:** 8  
**Conductor Type:** Nickel-Plated Brass and BeCu  
**Description:** In-Line 8-Conductor Biaxial Shielded Jack

| NEXUS Part Number | Number of Conductors | Conductor Type | Description                  |  |
|-------------------|----------------------|----------------|------------------------------|--|
| TJT-102*          | M9177/4-1            | 4              | Nickel-Plated BeCu           | Front Panel-Mounted version of TJ-102                        |
| TJT-105*          |                      | 5              | Nickel-Plated BeCu           | Threaded Front-Mounted Jack; with red plastic body           |
| TJT-125*          |                      | 5              | Nickel-Plated BeCu           | Threaded Front-Mounted Jack; threaded mounting is contact #5 |
| TJ-106PM*         |                      | 6              | Nickel-Plated Brass and BeCu | Panel Mount 6-Conductor Biaxial Shielded Jack                |
| TJ-108PM*         |                      | 8              | Nickel-Plated Brass and BeCu | Panel Mount 8-Conductor Biaxial Shielded Jack                |

*\*Image not shown*



# RUGGEDIZED JACK/SWITCH COMBINATIONS:



TJS-102

**Mil-Spec Designation:**  
U-94/U M9177/5-2  
**Conductors:** 4  
**Conductor Type:**  
Nickel-Plated BeCu  
**Description:**  
Combines a TJ-102 type jack with a momentary contact push-button switch and clothing clip



TJS-105

**Conductors:** 5  
**Conductor Type:**  
Nickel-Plated BeCu  
**Description:**  
Combines a TJ-105 type jack with a momentary contact push-button switch and clothing clip



TJS-106

**Conductors:** 6  
**Conductor Type:**  
Nickel-Plated Brass and BeCu  
**Description:**  
Telephone Jack Switch, Biaxial Shielded, 6 Conductors



TJSS-106

**Conductors:** 6  
**Conductor Type:**  
Nickel-Plated Brass and BeCu  
**Description:**  
Telephone Jack, 2 Switches, Biaxial Shielded, 6



TJS-108

**Conductors:** 8  
**Conductor Type:**  
Nickel-Plated Brass and BeCu  
**Description:**  
Telephone Jack Switch, Biaxial Shielded, 8 Conductors



TJSS-108

**Conductors:** 8  
**Conductor Type:**  
Nickel-Plated Brass and BeCu  
**Description:**  
Telephone Jack, 2 switches, Biaxial Shielded, 8 Conductors

# TELEPHONE PLUGS & JACKS - WIRING SEQUENCE:

| SUGGESTED WIRING SEQUENCE |            |                  |
|---------------------------|------------|------------------|
| Monaural Headsets         | Contact #1 | Microphone, High |
|                           | Contact #2 | Earphones, High  |
|                           | Contact #3 | Microphone, Low  |
|                           | Contact #4 | Earphones, Low   |
| Binaural Headsets         | Contact #1 | Microphone, High |
|                           | Contact #2 | Left Earphone    |
|                           | Contact #3 | Microphone, Low  |
|                           | Contact #4 | Right Earphone   |
|                           | Contact #5 | Earphones, Low   |

# TELEPHONE PLUGS & JACKS - MATING CHART:

|                     |          | PLUGS      |        |          |          |        |        |        |        |        |          |
|---------------------|----------|------------|--------|----------|----------|--------|--------|--------|--------|--------|----------|
|                     |          | MATES WITH | TP-120 | TP-120-5 | TP-120-7 | TP-101 | TP-102 | TP-105 | TP-106 | TP-108 | TPSJ-101 |
| JACKS               | TJ-120   | X          | X      | X        | X        | X      |        |        |        |        | X        |
|                     | TJG-120  | X          | X      | X        | X        | X      |        |        |        |        | X        |
|                     | TJS-120  | X          | X      | X        | X        | X      |        |        |        |        | X        |
|                     | TJT-120  | X          | X      | X        | X        | X      |        |        |        |        | X        |
|                     | TJGT-120 | X          | X      | X        | X        | X      |        |        |        |        | X        |
|                     | TJST-120 | X          | X      | X        | X        | X      |        |        |        |        | X        |
|                     | TJ-101   | X          | X      | X        | X        | X      |        |        |        |        | X        |
|                     | TJ-102   | X          | X      | X        | X        | X      |        |        |        |        | X        |
|                     | TJT-102  | X          | X      | X        | X        | X      |        |        |        |        | X        |
|                     | TJ-105   |            |        |          |          |        | X      |        |        |        |          |
|                     | TJT-105  |            |        |          |          |        | X      |        |        |        |          |
|                     | TJT-125  |            |        |          |          |        | X      |        |        |        |          |
|                     | TJ-106   |            |        |          |          |        |        | X      |        |        |          |
|                     | TJ-106PM |            |        |          |          |        |        | X      |        |        |          |
|                     | TJ-108   |            |        |          |          |        |        |        | X      |        |          |
|                     | TJ-108PM |            |        |          |          |        |        |        | X      |        |          |
| SWITCH COMBINATIONS | TJS-102  | X          | X      | X        | X        | X      |        |        |        |        |          |
|                     | TJS-105  |            |        |          |          |        | X      |        |        |        |          |
|                     | TJS-106  |            |        |          |          |        |        | X      |        |        |          |
|                     | TJSS-106 |            |        |          |          |        |        | X      |        |        |          |
|                     | TJS-108  |            |        |          |          |        |        |        | X      |        |          |
|                     | TJSS-106 |            |        |          |          |        |        |        | X      |        |          |



## M55116 AUDIO & M55116 TYPE AUDIO CONNECTORS

### TECHNICAL SPECIFICATIONS

|   |   |
|---|---|
| Shell:                                      | Stainless Steel, 303, Passivated  |
| Mating:                                     | Bayonet Coupling  |
| Mating Cycles:                              | 3,000   |
| Temperature:                                | -55°C to +85°C  |
| Insert Material:                            | Thermoset Plastic   |
| Contacts:                                   | Gold-plated Brass / Silver-plated BeCu (Springs)  |
| Current Rating:                             | 0.5 amperes   |
| Voltage Rating:                             | 60V max   |
| Contact Depression:                         | 1.25-1.75 lbs per contact   |
| Contact Resistance:                         | .050 $\Omega$ max   |
| Insulation Resistance:                      | 1000 megaohms min, except for connectors unmated after immersion test shall not be less than 100 megaohms |
| Dielectric Withstanding Voltage; Sea Level: | 500V RMS  |
| Water Immersion:                            | 6 feet of water up to 48 hours (mated & unmated)  |

Amphenol NEXUS Technologies manufactures the complete line of qualified MIL-DTL-55116 audio connectors which are used throughout military and commercial radio systems and intercom systems for ground, vehicle, airborne, and naval communications.

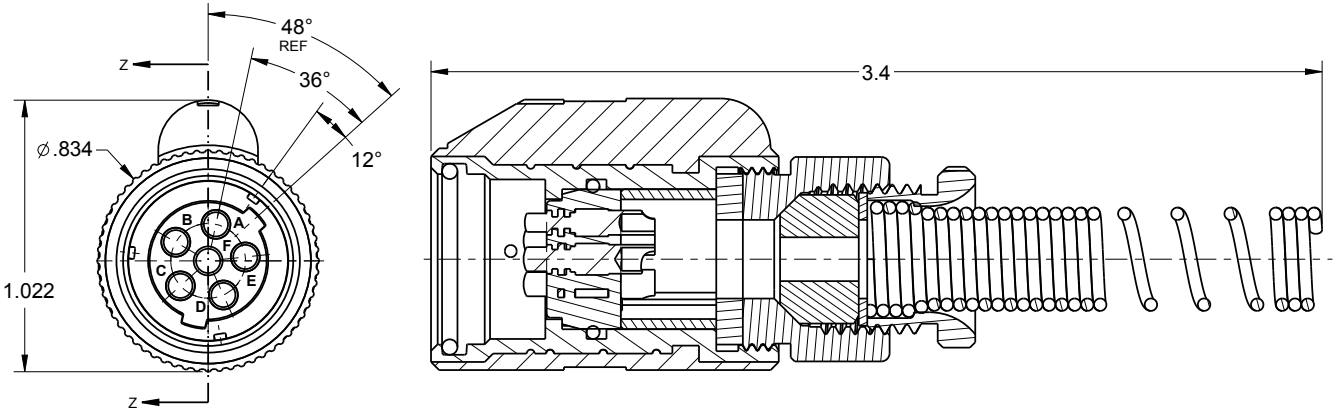
This connector series encompasses waterproof, polarized plugs and receptacles for use in audio frequency circuits at 60 volts maximum potential and 0.5 amperes maximum current. Connectors utilize either crimp sleeve or solder cup contacts. The rigid contacts in the plug connector mate with the pogo-pin, or spring loaded, contacts in the receptacle. In-line plugs and receptacles come with a wire strain relief. Receptacles are also available in panel-mount.

In addition to the standard versions, Amphenol NEXUS Technologies also designs and builds a wide variety of custom M55116-type connectors with options such as: PCB contacts, unique shell geometries, grounded and shielded connectors, and right-angle plug connectors. We also designed a complete miniaturized line of M55116 style connectors, the TAC Series, that meets the same performance requirements as the standard connectors in less than half the size and weight.

# M55116 MILITARY & COMMERCIAL CONNECTORS:

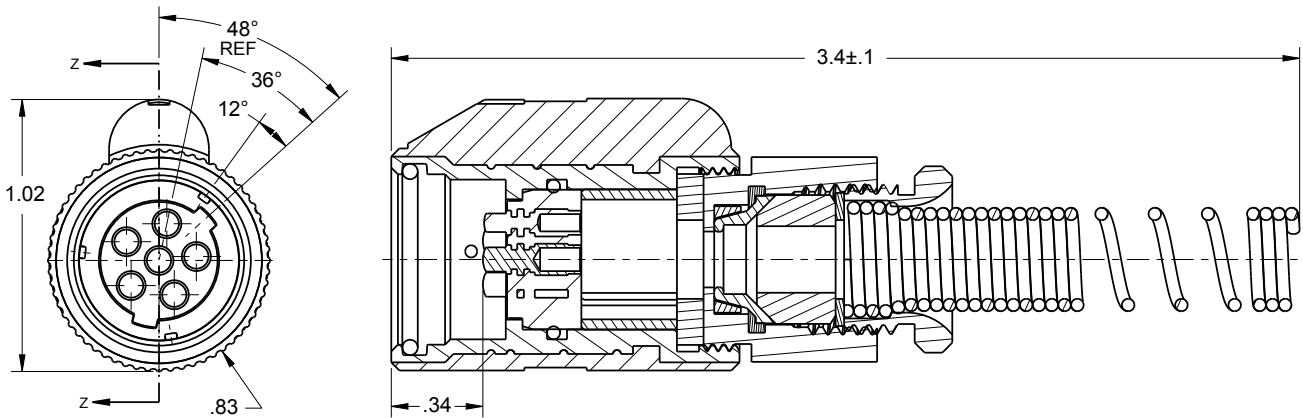
## Standard Plug Drawing :

AP-146 shown below, dimensions refer to all standard plugs in chart on page HOW TO ORDER



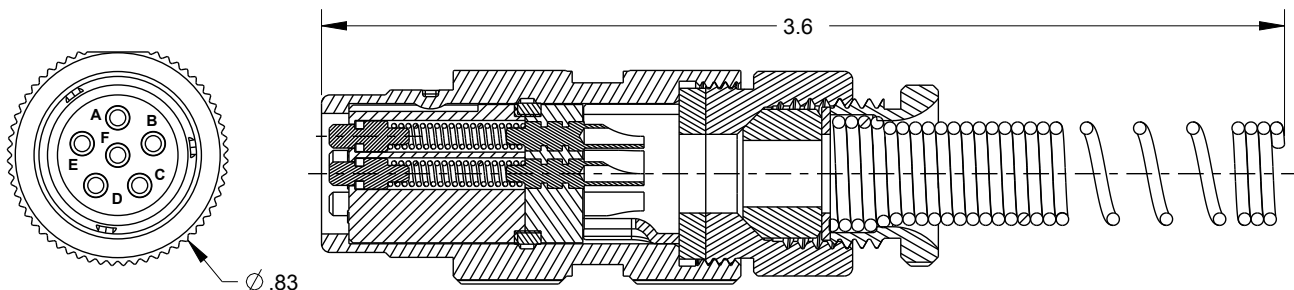
## Shielded Plug Drawing :

AP-136 shown below, dimensions refer to the four shielded plugs in chart on page HOW TO ORDER



## In-Line Receptacle Drawing :

AJ-166 shown below, represents receptacles with wire strain relief in chart on page HOW TO ORDER

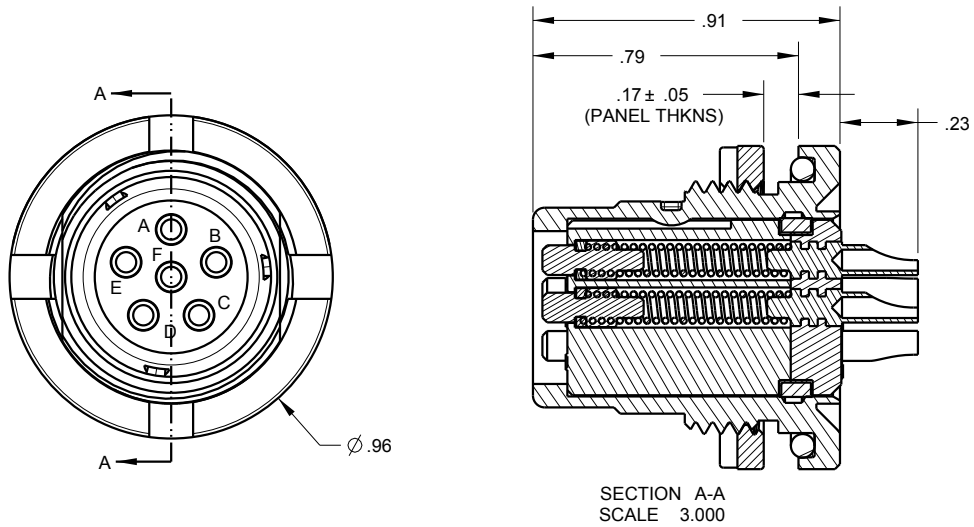




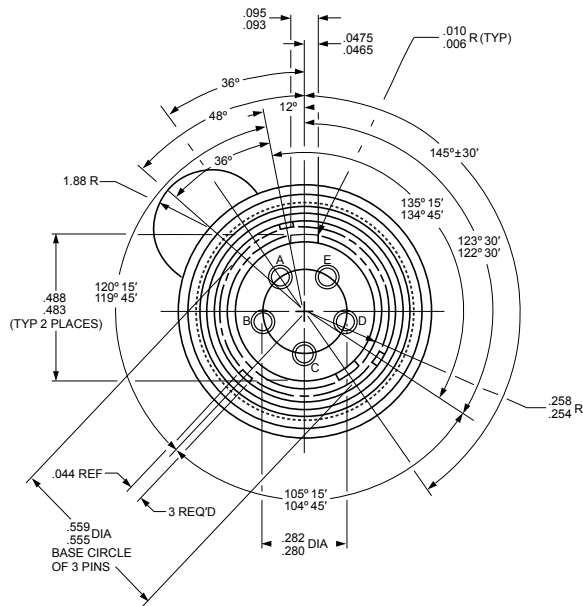
# M55116 MILITARY & COMMERCIAL CONNECTORS:

## Panel Mount Receptacle Drawing :

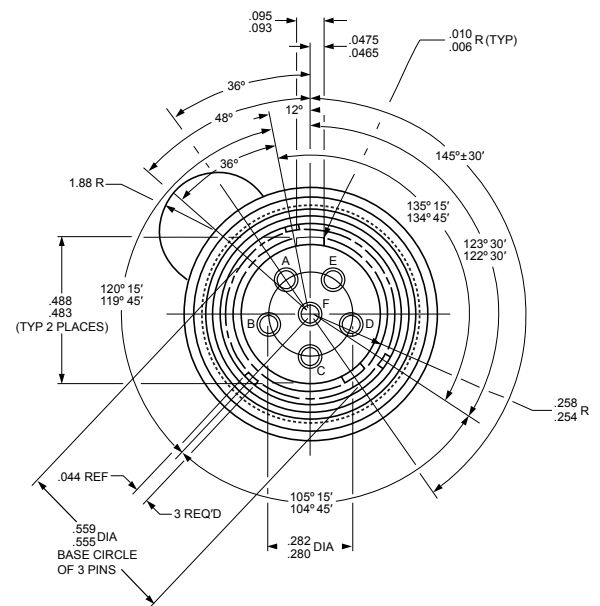
AJ-146 shown below, dimensions are the same for both the 5-pin and 6-pin layout



## 5-pin Insert Layout :



## 6-pin Insert Layout :



# HOW TO ORDER:

Two Step Process Example :

1.

2.

| Connector List | Cable Dimensions for Strain Relief |
|----------------|------------------------------------|
| AP-125         | X                                  |

## 1. Connector List

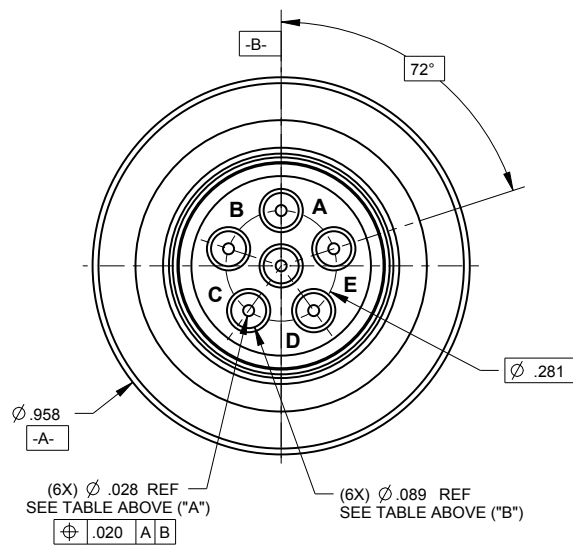
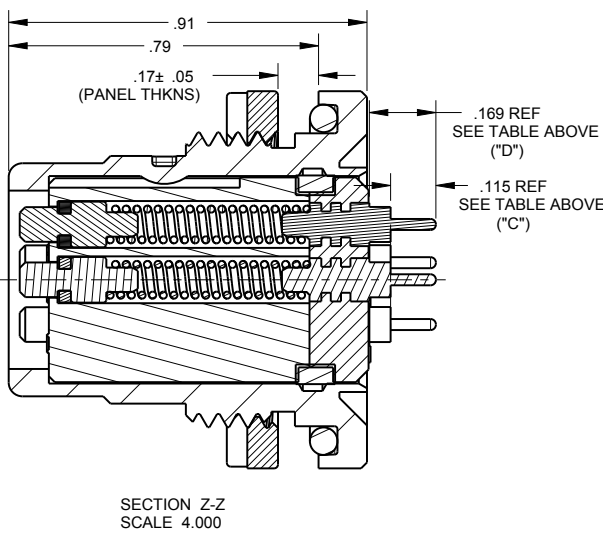
| NEXUS Part Number | Mil-Spec Designation | Connector Type        | Number of Contacts | Contact Type        | Strain Relief |
|-------------------|----------------------|-----------------------|--------------------|---------------------|---------------|
| AP-125            | M55116/1             | Standard Plug         | 5                  | Crimp               | Wire          |
| AP-126            | M55116/2             | Standard Plug         | 6                  | Crimp               | Wire          |
| AP-145            | M55116/3             | Standard Plug         | 5                  | Solder              | Wire          |
| AP-146            | M55116/4             | Standard Plug         | 6                  | Solder              | Wire          |
| AP-155            | M55116/5             | Standard Plug         | 5                  | Crimp               | Molded        |
| AP-156            | M55116/6             | Standard Plug         | 6                  | Crimp               | Molded        |
| AP-165            | M55116/7             | Standard Plug         | 5                  | Solder              | Molded        |
| AP-166            | M55116/8             | Standard Plug         | 6                  | Solder              | Molded        |
| AJ-145            | M55116/9             | Panel Mout Receptacle | 5                  | Solder Cup Spring   | N/A           |
| AJ-146            | M55116/10            | Panel Mout Receptacle | 6                  | Solder Cup Spring   | N/A           |
| AJ-155            | M55116/11            | In-line Receptacle    | 5                  | Crimp Sleeve Spring | Wire          |
| AJ-156            | M55116/12            | In-line Receptacle    | 6                  | Crimp Sleeve Spring | Wire          |
| AJ-165            | M55116/13            | In-line Receptacle    | 5                  | Solder Cup Spring   | Wire          |
| AJ-166            | M55116/14            | In-line Receptacle    | 6                  | Solder Cup Spring   | Wire          |
| AP-105            | U-182B/U             | Standard Plug         | 5                  | Crimp               | Molded        |
| AP-106            |                      | Standard Plug         | 6                  | Crimp               | Molded        |
| AP-115            | U-229B/U             | Standard Plug         | 5                  | Crimp               | Wire          |
| AP-116            |                      | Standard Plug         | 6                  | Crimp               | Wire          |
| AP-135            |                      | Shielded Plug         | 5                  | Crimp               | Wire          |
| AP-136            |                      | Shielded Plug         | 6                  | Crimp               | Wire          |
| AP-175            |                      | Shielded Plug         | 5                  | Solder              | Wire          |
| AP-176            |                      | Shielded Plug         | 6                  | Solder              | Wire          |

## 2. Cable Dimensions for Strain Relief

| Dash Number | Mil-Spec Designation                   |
|-------------|--|
| -0          | N/A (for Panel-Mount Receptacles Only) |
| -1          | .165 +/- .010                          |
| -2          | .228 +/- .010                          |
| -3          | .250 +/- .010                          |
| -4          | .290 +/- .010                          |
| -5          | .325 +/- .010                          |

# M55116 PCB RECEPTACLES:

| PCB CONTACT OPTIONS |              |       |      |      |
|---------------------|--------------|-------|------|------|
| PART #              | Ø "A" ± .002 | Ø "B" | "C"  | "D"  |
| AJ-146RMPC/1        | .040         | .089  | .115 | .169 |
| AJ-146RMPC/2        | .040         | —     | —    | .437 |
| AJ-146RMPC/3        | .028         | .089  | .188 | .590 |
| AJ-146RMPC/4        | .028         | .089  | .125 | .194 |
| AJ-146RMPC/5        | .028         | .089  | .218 | .257 |
| AJ-146RMPC/6        | .040         | —     | —    | .110 |
| AJ-146RMPC/7        | .028         | .089  | .150 | .437 |
| AJ-146RMPC/8        | .030         | —     | —    | .120 |
| AJ-146RMPC/9        | .028         | .089  | .140 | .390 |
| AJ-146RMPC/10       | .040         | —     | —    | .744 |
| AJ-146RMPC/11       | .030         | —     | —    | .594 |
| AJ-146RMPC/13       | .040         | —     | —    | .900 |



# M55116 MATING CHART:

|       |                    | JACKS              |                     |                     |                     |                     |                     |
|-------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|       |                    | M55116/9<br>AJ-145 | M55116/10<br>AJ-146 | M55116/11<br>AJ-155 | M55116/12<br>AJ-156 | M55116/13<br>AJ-165 | M55116/14<br>AJ-166 |
| PLUGS | M55116/1<br>AP-125 | X                  |                     | X                   |                     | X                   |                     |
|       | M55116/2<br>AP-126 |                    | X                   |                     | X                   |                     | X                   |
|       | M55116/3<br>AP-145 | X                  |                     | X                   |                     | X                   |                     |
|       | M55116/4<br>AP-146 |                    | X                   |                     | X                   |                     | X                   |
|       | M55116/5<br>AP-155 | X                  |                     | X                   |                     | X                   |                     |
|       | M55116/6<br>AP-156 |                    | X                   |                     | X                   |                     | X                   |
|       | M55116/7<br>AP-165 | X                  |                     | X                   |                     | X                   |                     |
|       | M55116/8<br>AP-166 |                    | X                   |                     | X                   |                     | X                   |
|       | AP-105             | X                  |                     | X                   |                     | X                   |                     |
|       | AP-106             |                    | X                   |                     | X                   |                     | X                   |
|       | AP-115             | X                  |                     | X                   |                     | X                   |                     |
|       | AP-116             |                    | X                   |                     | X                   |                     | X                   |
|       | AP-135             | X                  |                     | X                   |                     | X                   |                     |
|       | AP-136             |                    | X                   |                     | X                   |                     | X                   |
|       | AP-175             | X                  |                     | X                   |                     | X                   |                     |
|       | AP-176             |                    | X                   |                     | X                   |                     | X                   |
|       | AP-186             |                    | X                   |                     | X                   |                     | X                   |





## M55116 TYPE RIGHT-ANGLE PLUG CONNECTORS

### AP-RA Series Connectors

With space at a premium in today's military vehicles and systems, Amphenol NEXUS Technologies has met that demand with its new Right-Angle M55116-Type Plug Connectors.

Amphenol NEXUS Technologies has re-designed our in-line 5- and 6-conductor shielded plugs to have a 90° back-end to redirect the wires for space-saving purposes. Additionally, the cable location can then be indexed 180°.

#### FEATURES:

- 90° back-end to redirect the cables which saves almost 2 inches from the standard straight audio plug.
- Connector can be indexed, or clocked, in 13 different locations within a 180° spectrum to accommodate any system configuration.
- Molded-in pin contacts with standard solder cup or crimp-style terminals.
- Contacts provide self-cleaning feature and eliminate issues with pin/socket open contacts.
- Multiple wire strain reliefs accommodates .165 to .325 cable diameters.

#### OPTIONS:

- 5- or 6- contacts available, either solder or crimp versions.
- Wire strain relief can be supplied for larger/smaller size cable diameters.
- Over-molded versions are available.

#### HOW TO ORDER:

Contact Amphenol NEXUS Technologies for pricing, availability, or other technical questions

| 1. Base Part Number | 2. Contact Type | 3. Number of Pins | 4. Right Angle Designation | 5. Other Options |
|---------------------|-----------------|-------------------|----------------------------|------------------|
| AP-                 | 13              | 6                 | RA-                        | OM               |

#### 2. Contact Type

| Designates |        |
|------------|--------|
| 13         | Crimp  |
| 17         | Solder |

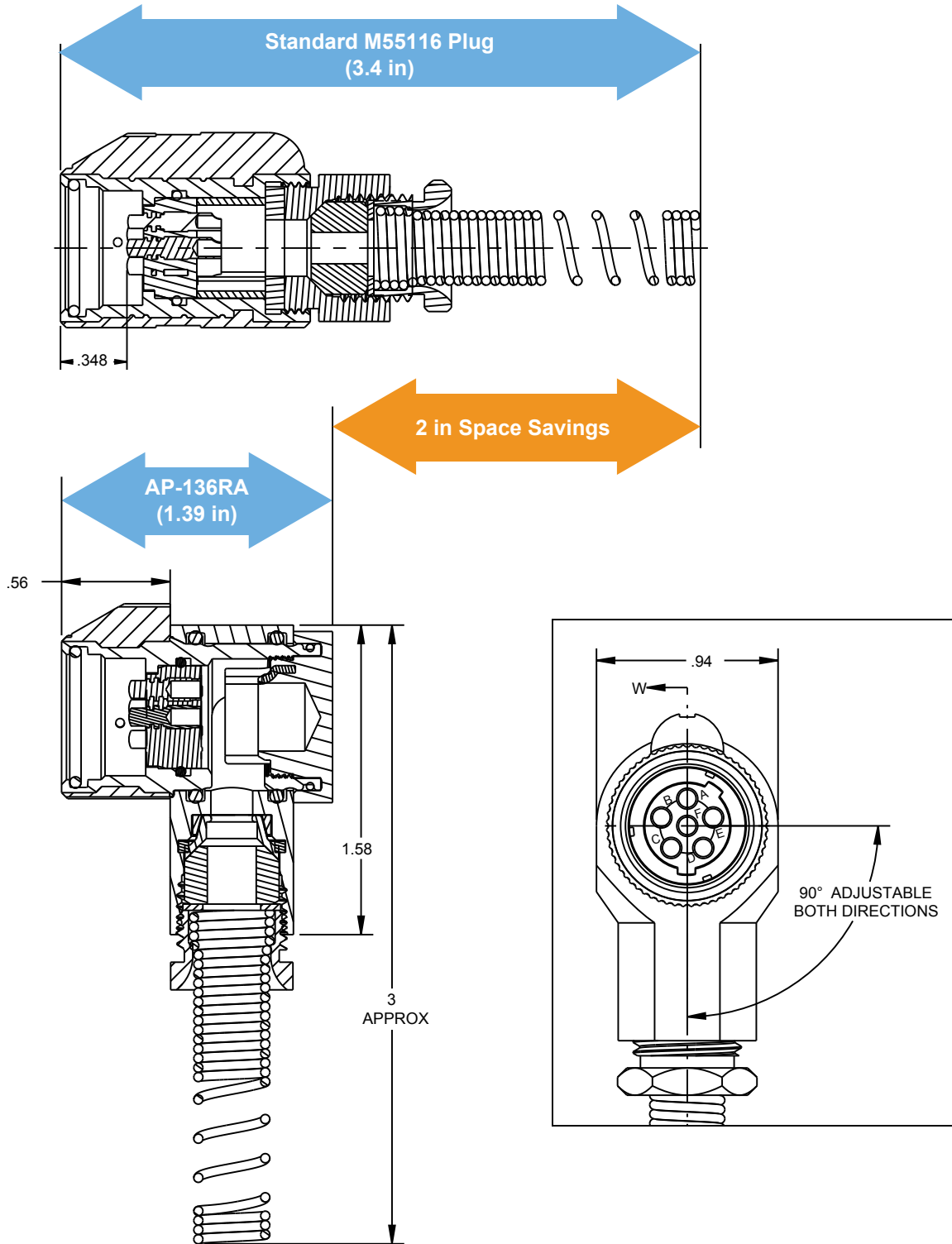
#### 3. Number of Pins

| Designates |        |
|------------|--------|
| 5          | 5 Pins |
| 6          | 6 Pins |

#### 5. Other Options

| Designates |                    |    |                     |
|------------|--------------------|----|---------------------|
| 1          | .165 Strain Relief | 4  | .290 Strain Relief  |
| 2          | .228 Strain Relief | 5  | .325 Strain Relief  |
| 3          | .250 Strain Relief | OM | Over-molded version |

# M55116 TYPE RIGHT-ANGLE PLUG SIZE COMPARISON:



# TAC CONNECTORS



## Miniature M55116-Type Connectors

### AVAILABLE PART NUMBERS:

| Part Number | Connector Style                               |
|-------------|---|
| MAP-56-30   | 6-Conductor Plug                              |
| MAP-57-30   | 7-Conductor Plug                              |
| MAP-56-50   | 6-Conductor Plug<br>(for Overmolding)         |
| MAP-57-50   | 7-Conductor Plug<br>(for Overmolding)         |
| MAJ-16-00   | 6-Conductor<br>Panel Mount Jack               |
| MAJ-17-00   | 7-Conductor<br>Panel Mount Jack               |
| MAJ-56-30   | 6-Conductor In-Line Jack                      |
| MAJ-57-30   | 7-Conductor In-Line Jack                      |
| MAP-60-50   | 10-Conductor Plug<br>(for Overmolding)        |
| MAP-60-00   | 10-Conductor<br>Panel-Mount Plug              |
| MAJ-60-50   | 7-Conductor In-Line Jack<br>(for Overmolding) |
| MAJ-60-00   | 10-Conductor<br>Panel-Mount Jack              |

New military and commercial applications are demanding a reduction in connector size and weight without a loss of performance. Amphenol NEXUS Technologies has met that demand with its new Miniature M55116-Type TAC Connectors for soldier worn applications, radio systems, and ruggedized communications systems.

TAC Connectors are designed and manufactured to the exacting specifications of MIL-DTL-55116 requirements at half the size of the standard connectors.

Amphenol NEXUS Technologies TAC Connectors are the ideal choice to reduce size and weight and still maintain many of the same performance benefits wherever a M55116 connector is needed on a newly designed system.

### FEATURES:

- Both plug and receptacle are 50% smaller than the standard M55116 connectors. (M55116/4 and M55116/10 as a comparison)
- Standard plugs have rigid contacts; jacks have spring-loaded contacts
- Molded-in spring loaded contacts provide self-cleaning feature and eliminate issues with pin/socket open contacts.
- Standard wire strain relief accommodates .125 and .250 cable diameter.

### OPTIONS:

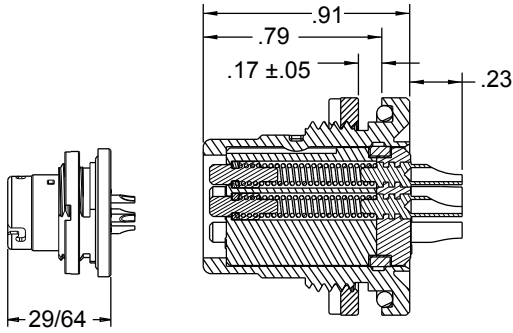
- Shell Styles
  - In-Line Plug
  - Panel-Mount Plug
  - In-Line Jack
  - Panel Mount Jack
- Number of Contacts
  - 6-pin
  - 7-pin
  - 10-pin
- In-Line Rear Accessories
  - Wire Strain Relief
  - Over-Molded
- Contact Types
  - Solder Cup
  - PCB

Contact Amphenol NEXUS Technologies for pricing, availability, or other technical questions

# TAC CONNECTOR SIZE COMPARISON:

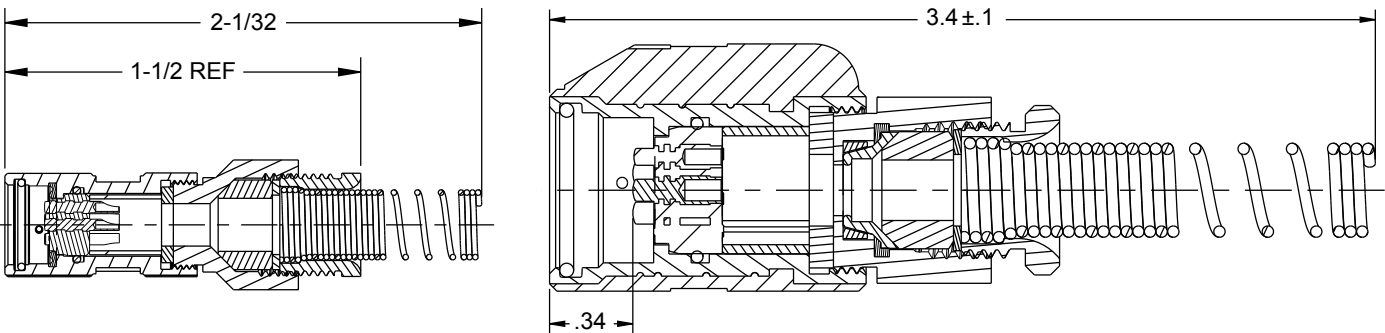
## Standard Plug Size Comparison :

MAJ-16-00 shown next to AJ-146



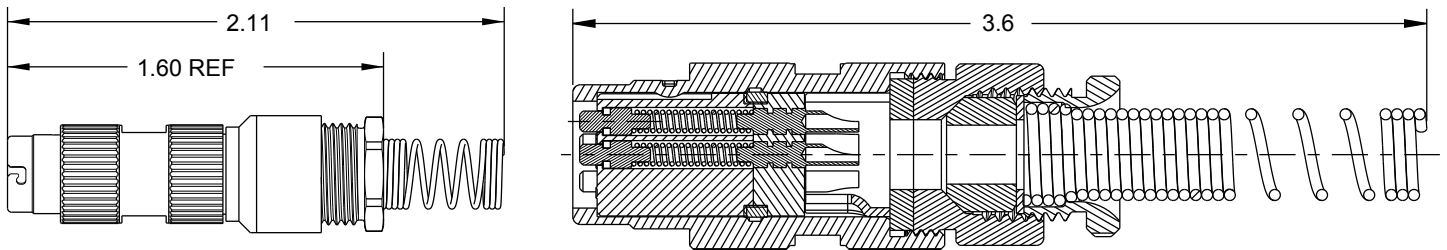
## Shielded Plug Size Comparison :

MAP-56-30 shown next to AP-136



## In-Line Receptacle Size Comparison :

MAJ-56-30 shown next to AJ-166







## WATERTIGHT BREAKAWAY CONNECTORS

### AP- and AJ- Series Connectors

#### TECHNICAL SPECIFICATIONS

|                                  |  |
|----------------------------------|--|
| <b>Shell:</b>                    | Aluminum   |
| <b>Plating:</b>                  | Black Anodize (standard); Black Chrome (shielded)    |
| <b>Insert:</b>                   | Thermoset Plastic                                    |
| <b>Contacts:</b>                 | Gold-plated Brass (Jacks) / Gold-plated BeCu (Plugs) |
| <b>Mating:</b>                   | Axial push-pull motion                               |
| <b>Engagement Force:</b>         | ≤ 14 lbs   |
| <b>Disengagement Force:</b>      | 8-12 lbs. (Standard)<br>5-12 lbs. (Miniature)        |
| <b>Mating Cycles:</b>            | 5000 (Standard)<br>3000 (Miniature)                  |
| <b>Temperature:</b>              | -55°C to +85°C                                       |
| <b>Contact Current Capacity:</b> | 2 amps maximum                                       |
| <b>Contact Resistance:</b>       | ≤ 150 mV   |

Amphenol NEXUS Technologies is the leader in watertight, breakaway connectors designed to meet severe environmental conditions. Our connectors, which are watertight in up to 6 feet of water, have molded-on wiping-action contacts that provide a self-cleaning feature and eliminate issues with pin/socket open contacts.

The 7-Pin and 10-Pin connectors are designed for multiple cable diameters, are available in shielded versions, and can include either solder-type contacts of insulation-piercing contacts, which are field replaceable.

Many of the 7- and 10-pin Connectors also come in a miniature versions that is 50% smaller than the standard connector. All standard connector options are also available in the miniaturized versions.

#### APPLICATIONS:

- C4I Systems
- Military Vehicles
- Commercial Aircraft
- Telecommunications Equipment
- Missiles and Ordnance
- Medical Equipment
- Commercial / Industrial Equipment

# WATERPROOF BREAKAWAY CONNECTORS:



AP-107

**Connector Type:**  
Plug  
**Number of Contacts:** 7  
**Contact Type:**  
Insulation Piercing  
**Rear Accessory:**  
None



AJ-107

**Connector Type:**  
Jack  
**Number of Contacts:** 7  
**Contact Type:**  
Insulation Piercing  
**Rear Accessory:**  
None



AP-107BRS

**Connector Type:**  
Plug, Shielded  
**Number of Contacts:** 7  
**Contact Type:**  
Solder  
**Rear Accessory:**  
Wire Strain Relief



AJ-107BRS

**Connector Type:**  
Jack, Shielded  
**Number of Contacts:** 7  
**Contact Type:**  
Solder  
**Rear Accessory:**  
Wire Strain Relief



AP-107PM

**Connector Type:**  
Jack, Front Mount  
Panel Mount  
**Number of Contacts:** 7  
**Contact Type:**  
Solder  
**Rear Accessory:** None



AJ-107PM

**Connector Type:**  
Plug, Front Mount  
Panel Mount  
**Number of Contacts:** 7  
**Contact Type:**  
Solder  
**Rear Accessory:** None



AP-117OM

**Connector Type:**  
Plug, Miniature  
**Number of Contacts:** 7  
**Contact Type:**  
Solder  
**Rear Accessory:**  
Overmold



AJ-117OM

**Connector Type:**  
Jack, Miniature  
**Number of Contacts:** 7  
**Contact Type:**  
Solder  
**Rear Accessory:**  
Overmold



AP-117BR

**Connector Type:**  
Plug, Miniature  
**Number of Contacts:** 7  
**Contact Type:**  
Solder  
**Rear Accessory:**  
Wire Strain Relief  
(.148 max)



AJ-117BR

**Connector Type:**  
Jack, Miniature  
**Number of Contacts:** 7  
**Contact Type:**  
Solder  
**Rear Accessory:**  
Wire Strain Relief  
(.148 max)



AJ-117PM

**Connector Type:**  
Front Panel-Mount  
Jack, Miniature  
**Number of Contacts:** 7  
**Contact Type:**  
Solder  
**Rear Accessory:** None



AP-110BRXL

**Connector Type:**  
Plug, Miniature  
**Number of Contacts:** 10  
**Contact Type:**  
Solder  
**Rear Accessory:**  
Wire Strain Relief  
(.250 max)



AJ-110BRXL

**Connector Type:**  
Jack, Miniature  
**Number of Contacts:** 10  
**Contact Type:**  
Solder  
**Rear Accessory:**  
Wire Strain Relief  
(.250 max)

## WATERPROOF BREAKAWAY CONNECTORS CONTINUED:

| NEXUS Part Number | Connector Type                          | Number of Contacts | Contact Type        | Rear Accessory                |
|-------------------|---|--------------------|---------------------|-------------------------------|
| AP-107BR*         | Plug                                    | 7                  | Solder              | Wire Strain Relief            |
| AJ-107BR*         | Jack                                    | 7                  | Solder              | Wire Strain Relief            |
| AP-117BRXL*       | Plug, Miniature                         | 7                  | Solder              | Wire Strain Relief (.250 max) |
| AJ-117BRXL*       | Jack, Miniature                         | 7                  | Solder              | Wire Strain Relief (.250 max) |
| AP-107DR*         | Plug                                    | 7                  | Insulation Piercing | Overmold Cap                  |
| AJ-107DR*         | Jack                                    | 7                  | Insulation Piercing | Overmold Cap                  |
| AP-107DRS*        | Plug, Shielded                          | 7                  | Insulation Piercing | Overmold Cap                  |
| AJ-107DRS*        | Jack, Shielded                          | 7                  | Insulation Piercing | Overmold Cap                  |
| AP-117LR-AL*      | Plug, Miniature w/Threaded Locking Ring | 7                  | Solder              | Wire Strain Relief (.250 max) |
| AJ-117LR-AL*      | Jack, Miniature w/Threaded Locking Ring | 7                  | Solder              | Wire Strain Relief (.250 max) |
| AP-117PLR*        | Plug, Miniature w/Threaded Locking Ring | 7                  | Solder              | Overmold                      |
| AJ-117PLR*        | Jack, Miniature w/Threaded Locking Ring | 7                  | Solder              | Overmold                      |
| AJ-117PMDC*       | Jack, Rear Panel-Mount, Miniature       | 7                  | Solder              | None                          |
| AP-110OM*         | Plug, Miniature                         | 10                 | Solder              | Overmold                      |
| AJ-110OM*         | Jack, Miniature                         | 10                 | Solder              | Overmold                      |
| AP-110OMS*        | Plug, Miniature, Shielded               | 10                 | Solder              | Overmold                      |
| AJ-110OMS*        | Jack, Miniature, Shielded               | 10                 | Solder              | Overmold                      |

*\*Image not shown*

## CABLE HARNESS INFORMATION:

| NEXUS Part Number      | Cable Holder                 |              | Cable Seal  | Cable (6 Conductor) with Shield |
|------------------------|------------------------------|--------------|---|---------------------------------|
|                        | Part Number                  | Figure Below |   |                                 |
| AP-107XL<br>AJ-107XL   | AP-107-3BXL<br>AJ-107-3GXL   | A            | AP-107-27   | <p>MIL-C-3885</p>               |
| AP-107XLS<br>AJ-107XLS | AP-107-3BXLS<br>AJ-107-3BXLS | B            | AP-107-27   |                                 |
| AP-107<br>AJ-107       | AP-107-3B<br>AJ-107-3G       | C            | Customer molds strain relief, then uses AP-107-27 | <p>MIL-C-55668</p>              |
| AP-107A<br>AJ-107A     | AP-107-3B<br>AJ-107-3G       | C            | AP-107-31   |                                 |

## WATERTIGHT BREAKAWAY CONNECTOR MATING CHART:

| MATES WITH  | JACKS  |          |           |          |           |          |           |          |            |            |          |           |          |            |
|-------------|--------|----------|-----------|----------|-----------|----------|-----------|----------|------------|------------|----------|-----------|----------|------------|
|             | AJ-107 | AJ-107BR | AJ-107BRS | AJ-107DR | AJ-107DRS | AJ-1100M | AJ-1100MS | AJ-117BR | AJ-117BRXL | AJ-117LRAL | AJ-117OM | AJ-117PRL | AJ-117PM | AJ-117PMDC |
| AP-107      | X      | X        | X         | X        | X         |          |           |          |            |            |          |           |          |            |
| AP-107BR    | X      | X        | X         | X        | X         |          |           |          |            |            |          |           |          |            |
| AP-107BRS   | X      | X        | X         | X        | X         |          |           |          |            |            |          |           |          |            |
| AP-107DR    | X      | X        | X         | X        | X         |          |           |          |            |            |          |           |          |            |
| AP-107DRS   | X      | X        | X         | X        | X         |          |           |          |            |            |          |           |          |            |
| AP-1100M    |        |          |           |          |           | X        | X         |          |            |            |          |           |          |            |
| AP-1100MS   |        |          |           |          |           | X        | X         |          |            |            |          |           |          |            |
| AP-117BR    |        |          |           |          |           |          |           | X        | X          |            | X        |           | X        | X          |
| AP-117BRXL  |        |          |           |          |           |          |           | X        | X          |            |          |           | X        | X          |
| AP-117LR-AL |        |          |           |          |           |          |           |          |            | X          |          |           |          |            |
| AP-117OM    |        |          |           |          |           |          |           |          |            |            | X        |           | X        | X          |
| AP-117PLR   |        |          |           |          |           |          |           |          |            |            |          | X         |          |            |

## MICROPHONE PLUGS AND JACKS



Amphenol NEXUS Technologies has been a long-time supplier of microphone plugs and jacks to the military and commercial helmet and headset industry. Our reliable products are the standard connector of choice for ruggedized, quality communications systems.

Our microphone plugs and jacks are available with either 2 or 3-pins and a locking mechanism. Other designs include selector switches and connector designs with other standard Amphenol NEXUS products.

### MICROPHONE PLUGS:



MP-101

**Mil-Spec Designation:**  
U-173/U

**Conductors:** 2

**Conductor Type:**  
Nickel-Plated BeCu

**Description:**  
2-pin Microphone Plug;  
nylon body



MP-103

**Conductors:** 3  
**Conductor Type:**  
Nickel-Plated BeCu (x2)  
Brass (x1)  
**Description:**  
2-pin Microphone Plug;  
nylon body



MJ-101

**Mil-Spec Designation:**  
U-172/U  
**Conductors:** 2  
**Conductor Type:**  
Nickel-Plated BeCu  
**Description:**  
2-conductor Microphone  
Jack; nylon body



MJ-103

**Conductors:** 3  
**Conductor Type:**  
Nickel-Plated BeCu  
**Description:**  
2-conductor Microphone  
Jack; nylon body with  
button release



MJ-102

**Mil-Spec Designation:**  
U-179A/U  
**Conductors:** 2  
**Conductor Type:**  
Nickel-Plated BeCu  
**Description:**  
2-conductor Microphone  
Jack; nylon body with  
button release

# MICROPHONE JACKS:



MJ-112

**Conductors:** 2  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** 2-conductor Microphone Jack; nylon body with button release



MJ-122

**Mil-Spec Designation:** JJ-055  
**Conductors:** 2  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** 2-conductor Microphone Jack; glass-filled nylon body



MJ-132

**Mil-Spec Designation:** JJ-055  
**Conductors:** 2  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** 2-conductor Microphone Jack; glass-filled nylon body, used with smaller diameter cable



MJ-113

**Conductors:** 3  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** 3-conductor Microphone Jack; nylon body



MJS-103

**Conductors:** 3  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** Microphone Jack Switch - functions as a selector switch to choose either a boom microphone or a gas mask microphone by use of the switch lever.



OMJ-101

**Conductors:** 2  
**Conductor Type:** Nickel-Plated BeCu  
**Description:** 2-conductor Microphone Jack; designed for over-molding





## MIL-C-8805/3 PUSH BUTTON SWITCHES

### TECHNICAL SPECIFICATIONS

|                                    |  |
|------------------------------------|--|
| <b>AC Rating:</b>                  | 10 amps at 115 vac (Resistive load)<br>5 amps at 115 vac (Inductive load)<br>3 amps at 115 vac (Lamp load)   |
| <b>DC Rating:</b>                  | 10 amps at 28 vdc (Resistive load)<br>5 amps at 28 vdc (Inductive load)<br>3 amps at 28 vdc (Lamp load)  |
| <b>Type 7 Contact Arrangement:</b> | Ratings are one half amperage  |
| <b>Mechanical Life:</b>            | 500,000 cycles   |
| <b>Action:</b>                     | Momentary snap of push-pull (as specified)   |
| <b>Plunger Travel:</b>             | .085 inch (approx.)  |
| <b>Operating Force:</b>            |  |
| Ser. 20 & 30                       | 3 to 5 pounds momentary<br>1/2 to 2 pounds push-pull   |
| Ser. 22 & 32                       | 2 to 3 pounds  |
| <b>Weight</b>                      | 050 pound maximum  |
| <b>Case:</b>                       | Aluminum alloy. 2001 - T3, anodized in accordance with MIL-A-8625  |
| <b>Plunger:</b>                    | Glass filled nylon   |
| <b>Body:</b>                       | Diallyl phthalate in accordance with MIL-M-14  |
| <b>Terminals:</b>                  | Threaded 2-56 NC-2B  |
| <b>Terminal Hardware:</b>          | Solder-type wire terminals, with terminal mounting screws and lockwashers, supplied with each switch.  |
| <b>Mounting:</b>                   | Basic switch supplied with 1/2-32 UN-2B nut and internal tooth lockwasher. Switch with mounding adapter C,F,G or H supplied with 5/8-24 UNEF-2B nut and internal tooth lockwasher. |
| <b>Special:</b>                    | Additional types of mounting, button styles, colors, and other variations are available on special order.  |

Amphenol NEXUS Technologies manufactures a wide variety of push-pull and momentary switches for multiple markets and applications. Many of the switches can be incorporated with our connectors for customers have come to rely on our design capabilities and prefer the tactile feel of our quality switches.

In addition to the MIL-S-8805/3, or MS25089, switches, Amphenol NEXUS Technologies makes a number of custom switches to meet a wide variety of design needs.

Our switches are used in many military and commercial applications including:

- Military and Commercial Aircraft
- Avionics
- Ground Vehicles
- Naval Systems
- Ruggedized Communications systems
- Command Systems
- Soldier Systems
- Industrial Applications

### HYDRO-SWITCH:

Amphenol NEXUS Technologies now offers MIL-S-8805/3 type watertight switches that meet IP68 water submersion requirements. This new Hydro-Switch has the same mechanical and electrical properties of our NX300 series switches with the added bonus of being watertight. It can be used as a direct drop-in replacement for designs utilizing current Amphenol NEXUS Technologies' switches. The new Hydro-Switch has the same quality customers expect from an Amphenol NEXUS Technologies product.

# HOW TO ORDER:

Seven Step Process Example :

| 1.               | 2.            | 3.                  | 4.           | 5.            | 6.           | 7.           |
|------------------|---------------|---------------------|--------------|---------------|--------------|--------------|
| Base Part Number | Switch Series | Contact Arrangement | Adapter Type | Adapter Color | Button Style | Button Color |
| NX               | 30            | 2                   | C            | R             | 1            | B            |

## 1. Base Part Number

|     |                 |
|-----|-----------------|
| NX  | Standard Switch |
| NXW | Hydro-Switch ** |

## 2. Switch Series

|    |  |
|----|--|
| 20 | Standard Momentary or push-pull switches     |
| 22 | Standard switches with 2 lb operating force  |
| 30 | Dustproof momentary or push-pull switches    |
| 32 | Dustproof switches with 2 lb operating force |

## 3. Contact Arrangements

|   |  |
|---|--|
| 1 | SPNO: Single pole, normally open               |
| 2 | SPNC: Single pole, normally closed             |
| 3 | 2-CIR: Two circuit                             |
| 4 | 3-TNO: Three terminal, normally open           |
| 5 | 3-TNC: Three terminal, normally closed         |
| 6 | SPDT: Single pole, double throw                |
| 7 | DPST: Double pole, single throw, normally open |

## 4. Adapter Type (See page 30)

|   |                             |
|---|-----------------------------|
| O | Basic Switch ( no adapter ) |
| A | MIL type A                  |
| B | MIL type B                  |
| C | MIL type C                  |
| E | MIL type E                  |
| F | MIL type F                  |
| G | MIL type G                  |
| H | MIL type H                  |

## 5. Adapter Color

|   |                          |
|---|--------------------------|
| B | Standard color; black    |
| R | Red                      |
| C | Clear metal ( aluminum ) |
| O | Without Adapter          |

## 6. Button Style

|   |
|---|
| 1 |
| 2 |
| 3 |
| 5 |
| 6 |
| 8 |

## 7. Button Color

|   |                       |
|---|-----------------------|
| B | Standard color; black |
| R | Red                   |
| G | Gray                  |
| W | White                 |
| Y | Yellow                |

\*\* Hydro-Switch is only available in 300 Series Switches

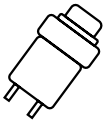
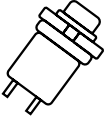
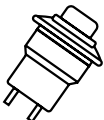
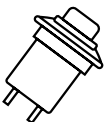
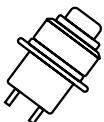
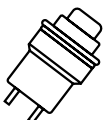
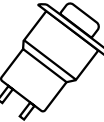
# PUSH BUTTON SWITCH CONTACT ARRANGEMENTS & BUTTON TYPES:

| CONTACT ARRANGEMENTS                               |  |  |  |  |   |  |
|--|--|--|--|--|---|--|
| <p>(1) SPNO</p> <p>Single Pole Normally Open</p>   | <p>(2) SPNC</p> <p>Single Pole Normally Closed</p> | <p>(3) 2-CIRCUIT</p> <p>Can Be Jumpered For SPDT</p> | <p>(4) 3-TERMINAL</p> <p>Single Pole Normally Open</p> | <p>(5) 3-TERMINAL</p> <p>Single Pole Normally Closed</p> | <p>(6) SPDT</p> <p>Single Pole Double Throw</p> | <p>(7) DPST-NO</p> <p>Double Pole Single Throw Normally Open</p> |
| BUTTON STYLES                                      |  |  |  |  |   |  |
| <p>Switches Without Adapters:<br/>(See Note 1)</p> | <p>No. 1</p>                                       | <p>No. 2</p>   | <p>No. 3</p>   | <p>No. 5</p>   | <p>With Adapter</p>                             | <p>With Adapter No. 8</p>  |
| <p>Switches With Adapters:<br/>(See Note 2)</p>    |  |  |  |  |   |  |

1. **SWITCHES WITHOUT ADAPTERS:** The button height dimension shown for both Series 300 switches is taken from top of rubber boot to top of button. Button numbers 1, 3 (push-pull), and 5 is for the Series 300 dustproof switches. The only button available for series 200 switches is the number 2. The button height dimension shown is taken from the top of the housing to the top of the button.

2. **SWITCHES WITH ADAPTERS:** The button height dimension shown for both series of switches is taken from top adapter to top of button. Button numbers 1, 3 (push-pull), and 5 is for the Series 300 dustproof switches. Buttons 2, 6, and 8 are for the Series 200 standard switches.

# CONVERSION TABLE AND ADAPTER TYPE:

| Mounting  | Switch Action | Button Color | Contact 1     | Contact 2     | Contact 3     | Contact 4   | Contact 5   |
|---|---------------|--------------|---------------|---------------|---------------|-------------|-------------|
|    | Momentary     | Black        | MS25089-1A    | MS25089-2A    | MS25089-3A    | MS25089-4A  | MS25089-5A  |
|   |               |              | NX301AB1B     | NX302AB1B     | NX303AB1B     | NX304AB1B   | NX305AB1B   |
|   |               | Red          | MS25089-1AR   | MS25089-2AR   | MS25089-3AR   | MS25089-4AR | MS25089-5AR |
|   |               |              | NX301AB1R     | NX302AB1R     | NX303AB1R     | NX304AB1R   | NX305AB1R   |
|    | Momentary     | Black        | MS25089-1B    | MS25089-2B    | MS25089-3B    | MS25089-4B  | MS25089-5B  |
|   |               |              | NX301BB1B     | NX302BB1B     | NX303BB1B     | NX304BB1B   | NX305BB1B   |
|   |               | Red          | MS25089-1BR   | MS25089-2BR   | MS25089-3BR   | MS25089-4BR | MS25089-5BR |
|   |               |              | NX301BB1R     | NX302BB1R     | NX303BB1R     | NX304BB1R   | NX305BB1R   |
|    | Momentary     | Black        | MS25089-1C    | MS25089-2C    | MS25089-3C    | MS25089-4C  | MS25089-5C  |
|   |               |              | NX301CB1B     | NX302CB1B     | NX303CB1B     | NX304CB1B   | NX305CB1B   |
|   |               | Red          | MS25089-1CR   | MS25089-2CR   | MS25089-3CR   | MS25089-4CR | MS25089-5CR |
|   |               |              | NX301CB1R     | NX302CB1R     | NX303CB1R     | NX304CB1R   | NX305CB1R   |
|   | Push-Pull     | Black        | MS25089-1C-1  | MS25089-2C-1  | MS25089-3C-1  |             |             |
|   |               |              | NX301CB3B     | NX302CB3B     | NX303CB3B     |             |             |
|   |               | Red          | MS25089-1CR-1 | MS25089-2CR-1 | MS25089-3CR-1 |             |             |
|   |               |              | NX301CB3R     | NX302CB3R     | NX303CB3R     |             |             |
|   | Momentary     | Black        | MS25089-1E    | MS25089-2E    | MS25089-3E    | MS25089-4E  | MS25089-5E  |
|   |               |              | NX301EB1B     | NX302EB1B     | NX303EB1B     | NX304EB1B   | NX305EB1B   |
|   |               | Red          | MS25089-1ER   | MS25089-2ER   | MS25089-3ER   | MS25089-4ER | MS25089-5ER |
|   |               |              | NX301EB1R     | NX302EB1R     | NX303EB1R     | NX304EB1R   | NX305EB1R   |
|  | Momentary     | Black        | MS25089-1F    | MS25089-2F    | MS25089-3F    | MS25089-4F  | MS25089-5F  |
|   |               |              | NX301FB1B     | NX302FB1B     | NX303FB1B     | NX304FB1B   | NX305FB1B   |
|   |               | Red          | MS25089-1FR   | MS25089-2FR   | MS25089-3FR   | MS25089-4FR | MS25089-5FR |
|   |               |              | NX301FB1R     | NX302FB1R     | NX303FB1R     | NX304FB1R   | NX305FB1R   |
|   | Push-Pull     | Black        | MS25089-1F-1  | MS25089-2F-1  | MS25089-3F-1  |             |             |
|   |               |              | NX301FB3B     | NX302FB3B     | NX303FB3B     |             |             |
|   |               | Red          | MS25089-1FR-1 | MS25089-2FR-1 | MS25089-3FR-1 |             |             |
|   |               |              | NX301FB3R     | NX302FB3R     | NX303FB3R     |             |             |
|  | Momentary     | Black        | MS25089-1G    | MS25089-2G    | MS25089-3G    | MS25089-4G  | MS25089-5G  |
|   |               |              | NX301GB1B     | NX302GB1B     | NX303GB1B     | NX304GB1B   | NX305GB1B   |
|   |               | Red          | MS25089-1GR   | MS25089-2GR   | MS25089-3GR   | MS25089-4GR | MS25089-5GR |
|   |               |              | NX301GB1R     | NX302GB1R     | NX303GB1R     | NX304GB1R   | NX305GB1R   |
|   | Push-Pull     | Black        | MS25089-1G-1  | MS25089-2G-1  | MS25089-3G-1  |             |             |
|   |               |              | NX301GB3B     | NX302GB3B     | NX303GB3B     |             |             |
|   |               | Red          | MS25089-1GR-1 | MS25089-2GR-1 | MS25089-3GR-1 |             |             |
|   |               |              | NX301GB3R     | NX302GB3R     | NX303GB3R     |             |             |
|  | Momentary     | Black        | MS25089-1H    | MS25089-2H    | MS25089-3H    | MS25089-4H  | MS25089-5H  |
|   |               |              | NX301HB1B     | NX302HB1B     | NX303HB1B     | NX304HB1B   | NX305HB1B   |
|   |               | Red          | MS25089-1HR   | MS25089-2HR   | MS25089-3HR   | MS25089-4HR | MS25089-5HR |
|   |               |              | NX301HB1R     | NX302HB1R     | NX303HB1R     | NX304HB1R   | NX305HB1R   |
|   | Push-Pull     | Black        | MS25089-1H-1  | MS25089-2H-1  | MS25089-3H-1  |             |             |
|   |               |              | NX301HB3B     | NX302HB3B     | NX303HB3B     |             |             |
|   |               | Red          | MS25089-1HR-1 | MS25089-2HR-1 | MS25089-3HR-1 |             |             |
|   |               |              | NX301HB3R     | NX302HB3R     | NX303HB3R     |             |             |



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## HYDRO-SWITCH



### TECHNICAL SPECIFICATIONS

|                                    |  |
|------------------------------------|--|
| <b>AC Rating:</b>                  | 10 amps at 115 vac (Resistive load)<br>5 amps at 115 vac (Inductive load)<br>3 amps at 115 vac (Lamp load)   |
| <b>DC Rating:</b>                  | 10 amps at 28 vdc (Resistive load)<br>5 amps at 28 vdc (Inductive load)<br>3 amps at 28 vdc (Lamp load)  |
| <b>Type 7 Contact Arrangement:</b> | Ratings are one half amperage  |
| <b>Mechanical Life:</b>            | 500,000 cycles   |
| <b>Action:</b>                     | Momentary snap of push-pull (as specified)   |
| <b>Plunger Travel:</b>             | .085 inch (approx.)  |
| <b>Operating Force:</b>            |  |
| Ser. 20 & 30                       | 3 to 5 pounds momentary<br>1/2 to 2 pounds push-pull   |
| Ser. 22 & 32                       | 2 to 3 pounds  |
| <b>Weight</b>                      | 050 pound maximum  |
| <b>Case:</b>                       | Aluminum alloy. 2001 - T3, anodized in accordance with MIL-A-8625  |
| <b>Plunger:</b>                    | Glass filled nylon   |
| <b>Body:</b>                       | Diallyl phthalate in accordance with MIL-M-14  |
| <b>Terminals:</b>                  | Threaded 2-56 NC-2B  |
| <b>Terminal Hardware:</b>          | Solder-type wire terminals, with terminal mounting screws and lockwashers, supplied with each switch.  |
| <b>Mounting:</b>                   | Basic switch supplied with 1/2-32 UN-2B nut and internal tooth lockwasher. Switch with mounding adapter C,F,G or H supplied with 5/8-24 UNEF-2B nut and internal tooth lockwasher. |
| <b>Special:</b>                    | Additional types of mounting, button styles, colors, and other variations are available on special order.  |

Amphenol NEXUS Technologies now offers MIL-S-8805/3 type watertight switches that meet IP68 water submersion requirements. This new Hydro-Switch has the same mechanical and electrical properties of our NX300 series switches with the added bonus of being watertight. It can be used as a direct drop-in replacement for designs utilizing current Amphenol NEXUS Technologies' switches.

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