

Amphenol® PT, SP, MS/PT

Proprietary/MIL-C-26482, Series 1

solder type



wall mounting receptacle



cable connecting receptacle*



box mounting receptacle



straight plug



jam nut receptacle



thru bulkhead receptacle

Amphenol® solder contact miniature cylindrical connectors meet the most critical application needs. Design versatility combined with high reliability performance makes these series of Miniature Cylindrical Connectors ideal for environmental sealing or pressurized applications.

The MS/PT Series is qualified to MIL-C-26482, Series 1 and has all the outstanding design characteristics and quality of the PT Series. The SP Series is a modification of the PT, providing special shells with a wide mounting flange for back panel mounting.

A corrosion resistant electrically conductive finish of cadmium plate with an olive drab chromate after-treatment is used on the PT and MS/PT. The SP is given a durable non-conductive hard anodic "Alumilite"® coating which provides abrasion protection and resistance to corrosion.

Shell components for these series are aluminum. The dependable 5 key/keyway polarization with bayonet lock coupling assures positive mating with no chance of cross plugging. Spring tension provided by a wave washer in the coupling nut ensures maintenance of interfacial seal between mating halves.

Both the insert and main joint gasket are molded from resilient neoprene. This provides excellent moisture sealing at the gasket and superior electrical isolation of the contact in the insert.

Both pins and sockets are machined from a copper alloy and are gold plated. This gold plating eliminates contact corrosion and offers an indefinite shelf life. Socket contacts for these series are a closed entry design. Printed circuit board contacts are also available.

The PT, SP and MS/PT Series are intermateable and intermountable with all existing Miniature Cylindrical Series connectors except for the threaded coupling PC Series.

PT Solder is UL recognized under file #E115497, Volume 1, Section 5.

Refer to pages 56-61 for insert arrangement availability.

PT, SP, MS/PT

MIL-SPEC CONTACT DATA/CONNECTOR RATINGS

Contact Specifications					
Contact Size	Test Current	Maximum Millivolt Drop†	Solder Well Diameter	Solder Well Depth	
20	7.5	55	.046 ^{+0.004} _{-0.000}	.125 ^{+0.031} _{-0.000}	
16	13.0	50	.078 ^{+0.005} _{-0.003}	.188 ^{+0.031} _{-0.000}	
Service Rating					
Service Rating	Recommended Operating AC Voltage at Sea Level	Test Voltage AC (RMS), 60 cps			
		Sea Level	50,000 ft.	70,000 ft.	110,000 ft.
I	600	1,500	500	375	200
II	1,000	2,300	750	500	200

† Silver plated wire per MIL-C-26482

* This connector style is sometimes referred to as a cable connecting "plug." It does, however, mate with a straight or 90 degree plug.

PT, SP Service Classes

PT and SP connectors are available in the service classes listed below. Each class, with the exception of hermetic, offers one or more means of terminating or supporting a cable or wire bundle. Class "W" is not available in the SP Series.

- "A" General duty; back shell is threaded for conduit attachment of MS3057 cable clamp
- "A" (SR) General duty, with strain relief clamp for cable or wire bundle support
- "C" Pressurized receptacle; less than 1 cu. in. per hour leakage at 30 psi over a temperature range of -65°F to $+257^{\circ}\text{F}$
- "E" Environmental resistant connectors - supplied with a multi-holed grommet and clamping nut for moisture-proofing individual open wires
- "E" (SR) Environmental resistant strain relief clamp and grommet for moisture proofing individual wires; provides added wire bundle support
- "J" Same as "W" class except with strain relief
- "P" Translucent nylon boot for retaining customer-applied potting compounds; held in place by a threaded ring
- "P" (SR) Strain relief clamp suitable for retaining customer applied potting compounds, with provision for wire support
- "W" Compressing clamp and neoprene gland for moisture proofing multi-conductor jacketed cables. Telescoping sleeves (MS 3420A) can be used to adapt to cables smaller than minimum close-down.
- "H"* Hermetically sealed with compression glass inserts

MS/PT Service Classes

The MS/PT Miniature connector is available in the following certified service classes:

- "E" Environmental resistant connectors - supplied with a multi-holed grommet and clamping nut for moisture-proofing individual open wires
- "F" Grommet seal with strain relief clamp
- "P" Translucent nylon boot for retaining customer-applied potting compounds; held in place by a threaded ring

* Refer to pages 14-17 for Hermetic versions.



"A" general duty



"E" (SR), MS / "F" strain relief



"E" MS / "E" open wire seal

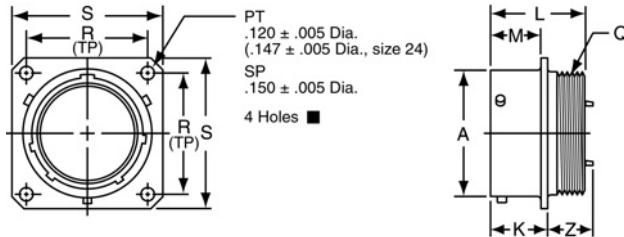


"P", MS / "P" potting boot



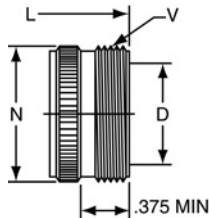
"W" cable seal

PT00 (MS3110) SP00 wall mounting receptacle



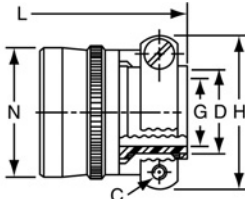
TERMINATION ASSEMBLIES

“A” General Duty/
“C” Pressurized



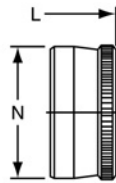
PT00A-XX-XXX
SP00A-XX-XXX
PT00C-XX-XXX

“A” (SR), “E” (SR), “P” (SR),
MS / “F” Strain Relief



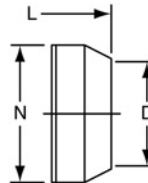
PT00A-XX-XXX (SR)
SP00A-XX-XXX (SR)
PT00E-XX-XXX (SR)
SP00E-XX-XXX (SR)
PT00P-XX-XXX (SR)
SP00P-XX-XXX (SR)
MS3110F-XX-XXX

“E” Open Wire Seal



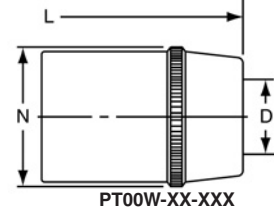
PT00E-XX-XXX
SP00E-XX-XXX
MS3110E-XX-XXX

“P” Potting Boot



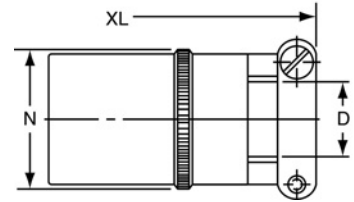
PT00P-XX-XXX
SP00P-XX-XXX
MS3110P-XX-XXX

“W” Cable Seal



PT00W-XX-XXX

“J” Cable Seal



PT00J-XX-XXX
MS3110J-XX-XXX

To complete part number see how to order on page 18.
■ (MMC) located within .0025 of (TP)

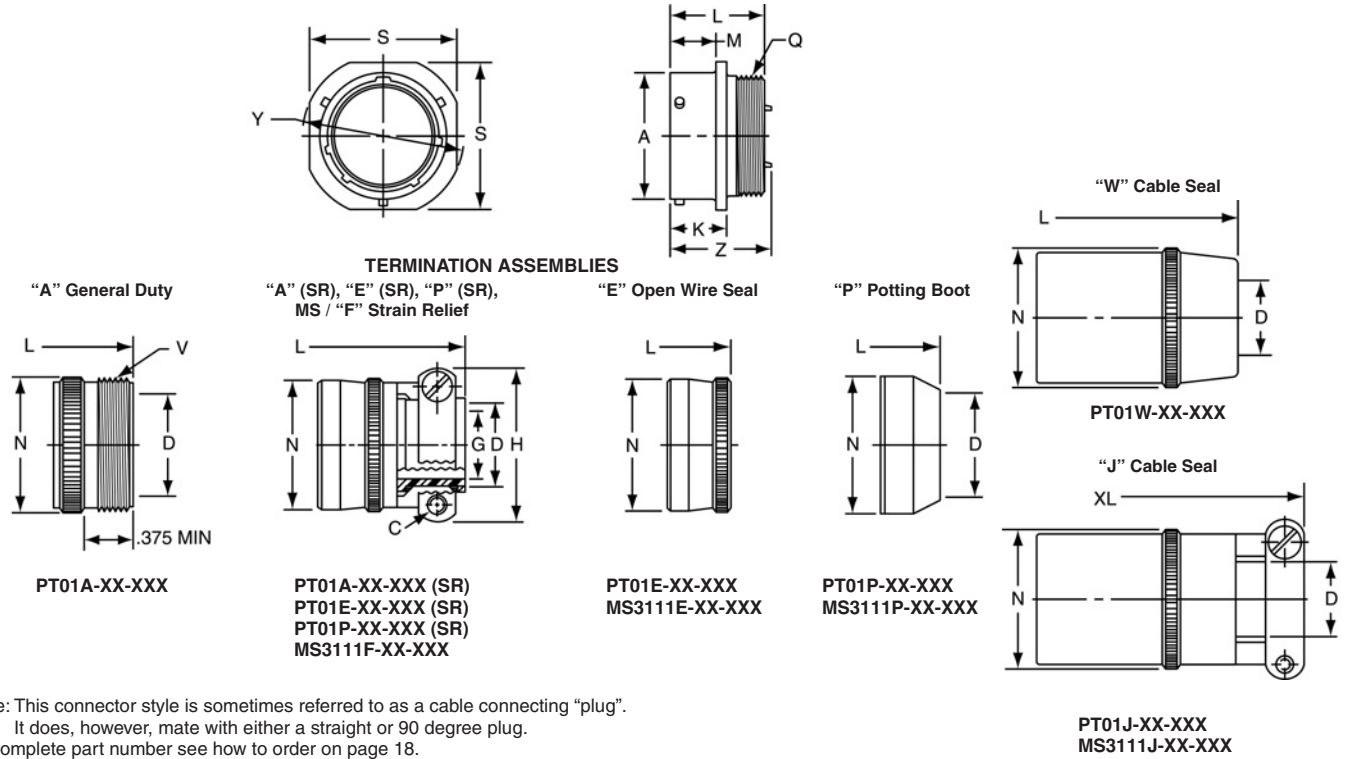
Shell Size	Receptacle Front View				Receptacle Side View								Class “A”, “C”				
	R (TP)		S Max.		A +.001 -.005	K +.020 -.010		L Max.	M +.010 -.000		Q Thread Class 2A	Z Max.		D Min.	L Max.	N Max.	V Thread Class A
	PT	SP	PT	SP		PT	SP		PT	SP		PT	SP				
6	.469	.641	.688	.953	.348	.493	.524	.906	.431	.462	.3125-32 NEF	.468	.438	.175	1.553	.462	.3750-32 NEF
8	.594	.734	.812	1.047	.473	.493	.524	.906	.431	.462	.4375-28 UNEF	.468	.438	.297	1.553	.590	.5000-28 UNEF
10	.719	.812	.938	1.125	.590	.493	.524	.906	.431	.462	.5625-24 NEF	.468	.438	.421	1.553	.717	.6250-24 NEF
12	.812	.938	1.031	1.250	.750	.493	.524	.906	.431	.462	.6875-24 NEF	.468	.438	.546	1.553	.834	.7500-20 UNEF
14	.906	1.031	1.125	1.344	.875	.493	.524	.906	.431	.462	.8125-20 UNEF	.468	.438	.663	1.553	.970	.8750-20 UNEF
16	.969	1.125	1.219	1.438	1.000	.493	.524	.906	.431	.462	.9375-20 UNEF	.468	.438	.787	1.553	1.088	1.0000-20 UNEF
18	1.062	1.203	1.312	1.516	1.125	.493	.524	.906	.431	.462	1.0625-18 NEF	.531	.438	.879	1.553	1.216	1.1875-18 NEF
20	1.156	1.297	1.438	1.672	1.250	.650	.650	1.125	.556	.556	1.1875-18 NEF	.531	.531	1.014	1.703	1.332	1.1875-18 NEF
22	1.250	1.375	1.562	1.750	1.375	.650	.650	1.125	.556	.556	1.3125-18 NEF	.531	.531	1.134	1.703	1.460	1.4375-18 NEF
24	1.375	1.500	1.688	1.875	1.500	.683	.683	1.188	.589	.589	1.4375-18 NEF	.498	.498	1.259	1.765	1.585	1.4375-18 NEF

Shell Size	Class “A” (SR), “E” (SR), “P” (SR), MS / “F”						Class “E”, MS / “E”		Class “P”, MS / “P”			Class “W”, “J”				
	C Thread	D Min.	G Max.	H Max.	L Max.	N Max.	L Max.	N Max.	D Min.	L Max.	N Max.	D		L Max.	N Max.	XL Max.
												Closed	Free			
6	-	-	-	-	-	-	1.266	.440	.192	1.438	.484	-	-	-	-	-
8	6-32	.240	.125	.812	1.922	.550	1.266	.560	.317	1.438	.608	.168	.230	1.705	.547	2.271
10	6-32	.302	.188	.875	1.922	.675	1.266	.685	.434	1.438	.734	.205	.312	1.705	.675	2.271
12	6-32	.428	.312	1.000	1.922	.803	1.266	.813	.548	1.438	.858	.338	.442	1.848	.812	2.411
14	6-32	.552	.375	1.125	1.922	.920	1.266	.930	.673	1.438	.984	.416	.539	2.040	.940	2.599
16	6-32	.615	.500	1.188	2.047	1.047	1.266	1.057	.798	1.438	1.110	.550	.616	2.256	1.067	2.943
18	8-32	.740	.625	1.438	2.078	1.165	1.266	1.175	.899	1.438	1.234	.600	.672	2.486	1.194	3.172
20	8-32	.740	.625	1.438	2.344	1.290	1.516	1.301	1.024	1.656	1.360	.635	.747	2.922	1.322	3.610
22	8-32	.928	.750	1.625	2.344	1.418	1.516	1.430	1.149	1.656	1.484	.670	.846	3.086	1.449	3.766
24	8-32	.990	.800	1.719	2.406	1.543	1.578	1.555	1.274	1.717	1.610	.740	.894	3.310	1.576	3.985

All dimensions for reference only.

PT01 (MS3111)

cable connecting receptacle



Note: This connector style is sometimes referred to as a cable connecting "plug".
It does, however, mate with either a straight or 90 degree plug.
To complete part number see how to order on page 18.

Shell Size	Recept. Front View		Receptacle Side View						Class "A",				
	S ±.020	Y ±.020	A +.001 -.005	K +.020 -.010	L Max.	M +.016 -.000	Q Thread Class 2A	Z Max.	D Min.	L Max.	N Max.	V Thread Class A	
6	.688	.812	.348	.494	.906	.400	.3125-32 NEF	.948	.175	1.553	.462	.3750-32 NEF	
8	.812	.938	.473	.494	.906	.400	.4375-28 UNEF	.948	.297	1.553	.590	.5000-28 UNEF	
10	.938	1.062	.590	.494	.906	.400	.5625-24 NEF	.948	.421	1.553	.717	.6250-24 NEF	
12	1.031	1.156	.750	.494	.906	.400	.6875-24 NEF	.948	.546	1.553	.834	.7500-20 UNEF	
14	1.125	1.250	.875	.494	.906	.400	.8125-20 UNEF	.948	.663	1.553	.970	.8750-20 UNEF	
16	1.219	1.344	1.000	.494	.906	.400	.9375-20 UNEF	.948	.787	1.553	1.088	1.0000-20 UNEF	
18	1.312	1.438	1.125	.494	.906	.400	1.0625-18 NEF	.948	.879	1.553	1.216	1.1875-18 NEF	
20	1.438	1.562	1.250	.650	1.125	.535	1.1875-18 NEF	1.166	1.041	1.703	1.332	1.1875-18 NEF	
22	1.562	1.688	1.375	.650	1.125	.535	1.3125-18 NEF	1.166	1.135	1.703	1.460	1.4375-18 NEF	
24	1.688	1.812	1.500	.683	1.188	.568	1.4375-18 NEF	1.166	1.259	1.765	1.585	1.4375-18 NEF	

Shell Size	Class "A" (SR), "E" (SR), "P" (SR), MS / "F"						Class "E", MS / "E"		Class "P", MS / "P"			Class "W", "J"				
	C Thread	D Min.	G Max.	H Max.	L Max.	N Max.	L Max.	N Max.	D Min.	L Max.	N Max.	D		L Max.	N Max.	XL Max.
												Closed	Free			
6	-	-	-	-	-	-	1.266	.440	.192	1.438	.484	-	-	-	-	-
8	6-32	.240	.125	.812	1.922	.550	1.266	.560	.317	1.438	.608	.168	.230	1.705	.547	2.271
10	6-32	.302	.188	.875	1.922	.675	1.266	.685	.434	1.438	.734	.205	.312	1.705	.675	2.271
12	6-32	.428	.312	1.000	1.922	.803	1.266	.813	.548	1.438	.858	.338	.442	1.848	.812	2.411
14	6-32	.552	.375	1.125	1.922	.920	1.266	.930	.673	1.438	.984	.416	.539	2.040	.940	2.599
16	6-32	.615	.500	1.188	2.047	1.047	1.266	1.057	.798	1.438	1.110	.550	.616	2.256	1.067	2.943
18	8-32	.740	.625	1.438	2.078	1.165	1.266	1.175	.899	1.438	1.234	.600	.672	2.486	1.194	3.172
20	8-32	.740	.625	1.438	2.344	1.290	1.516	1.301	1.024	1.656	1.360	.635	.747	2.922	1.322	3.610
22	8-32	.928	.750	1.625	2.344	1.418	1.516	1.430	1.149	1.656	1.484	.670	.846	3.086	1.449	3.766
24	8-32	.990	.800	1.719	2.406	1.543	1.578	1.555	1.274	1.717	1.610	.740	.894	3.310	1.576	3.985

All dimensions for reference only.

PT, SP, MS/PT

how to order

PT, SP

To more easily illustrate ordering procedure, part number PT00A-20-41PW(SR) is shown as follows:

PT	00	A	-	20	-	41	P	W	(SR)
1	2	3	4	5	6	7	8		

See code below:

1. Connector Type

- "PT" designates standard olive drab, electrically conductive cadmium plated bayonet lock connector with solder contacts
- "SP" designates electrically non-conductive, hard anodic coated bayonet lock connector with solder contacts and larger flange and mounting holes for back panel mounting
- "PTG" designates plug with grounding fingers

2. Shell Style

- "00" designates wall mounting receptacle
- "01" designates cable connecting receptacle**
- "02" designates box mounting receptacle
- "06" designates straight plug
- "07" designates jam nut receptacle
- "08" designates 90 degree plug cable support
- "B" designates thru bulkhead receptacle (pressurized)
- "I" designates solder mount receptacle (Hermetic only)

3. Service Classes

- "A" designates general duty back shell
- "C" designates pressurized receptacle
- "E" designates environmental resisting open wire seal with grommet and nut
- "J" designates clamp assembly for moisture proofing multi-jacketed cables, with strain relief
- "P" designates assembly with potting boot
- "W" designates clamp assembly for moisture proofing multi-jacketed cables
- "H" designates hermetic* without interfacial seal
- "Y" designates hermetic* with interfacial seal

4. Shell Size

- "20" designates shell size. Shell sizes 6 through 24 available.

5. Insert Arrangement

- "20 - 41" designates insert arrangement. Refer to pages 56-61 for insert availability.

6. Contacts

- "P" designates pin contacts
- "S" designates socket contacts

For ordering connectors with printed circuit board contacts, see pg. 12.

7. Insert Rotation

- "W", "X", "Y", "Z" designate that insert is rotated in its shell from "normal" position. No letter required for normal (no rotation) position.

8. "SR" designates a strain relief clamp.

Indicate optional finishes as follows:

- (003) olive drab cadmium plate (standard on "PT")
- (005) anodic coating - Alumilite® (standard on "SP")
- (014) olive drab cadmium plate over nickel
- (023) electroless nickel
- (024) olive drab zinc cobalt plating
- (025) non-conductive black zinc cobalt plating
- (027) conductive black zinc cobalt plating
- (424) electroless nickel finish with strain relief
- (466) olive drab zinc cobalt plating with strain relief
- (470) non-conductive black zinc cobalt plating with strain relief
- (476) conductive black zinc cobalt plating with strain relief
- (100) Suffix added for flat eyelet pin contacts in hermetic versions

MS/PT

MIL-C-26482, Series 1

Part number MS3110E20-41PW is shown as follows:

MS	311	0	E	20	-	41	P	W
1	2	3	4	5	6	7	8	

For Hermetic connectors part number MS3113H20Y41PW is shown as follows:

MS	311	3	H	20	Y	41	P	W
1	2	3	4	5, 6		7	8	

See code below:

1. "MS" designates Military Standard

2. Specification Number

- "311" designates basic family number for MIL-C-26482, Series 1 solder type

3. Shell Style

- "0" designates wall mounting receptacle
- "1" designates cable connecting receptacle**
- "2" designates box mounting receptacle
- "3" designates solder mount receptacle (hermetic only)
- "4" designates jam nut receptacle
- "6" designates straight plug

4. Service Class

- "E" designates environmental resisting connector
- "F" designates environmental resisting connectors with strain relief
- "J" designates clamp assembly for moisture proofing multi-jacketed cables, with strain relief
- "P" designates potted type with potting boot
- "H" designates hermetic

5. Shell Size

- "20" designates shell size. Shell sizes 8 through 24 available.

6. Insert Arrangement

- "20-41" designates arrangement. Refer to pages 56-61 for insert availability.
- Hermetic version
- "20Y41" designates insert arrangement; specify "Y" for flat eyelet pin contacts, or "C" for solder cup pin contacts

7. Contact Configuration

- "P" designates pin contacts
- "S" designates socket contacts

8. Insert Rotation

- "W", "X", "Y", "Z" designate that insert is rotated in its shell from "normal" position. No letter required for normal (no rotation) position.

* Hermetic connectors are supplied with tin plated shells.

**This connector style is sometimes referred to as a cable connecting "plug". It does, however, mate with either a straight or 90 degree plug.