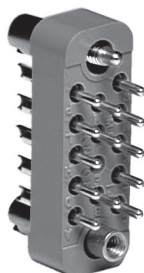


# Rack and Panel Connectors Subminiature Rectangular



SMP20



SMS20

## ELECTRICAL SPECIFICATIONS

**Current Rating:** 7.5 A

**Breakdown Voltage:**

At sea level: 2000 V<sub>RMS</sub>

At 70 000 feet [21 336 meters]: 500 V<sub>RMS</sub>

## PHYSICAL SPECIFICATIONS

**Number of Contacts:** 5, 7, 11, 14, 20, 26, 34, 42, 50, 75

**Contact Spacing:** 0.120" [3.05 mm]

**Contact Gauge:** #20 AWG

**Minimum Creepage Path Between Contacts:**

0.080" [2.03 mm]

**Minimum Air Space Between Contacts:** 0.050" [1.27 mm]

## FEATURES

- Lightweight
- Polarized by guides or screwlocks
- Screwlocks lock connectors together to withstand vibration and accidental disconnect
- Overall height kept to a minimum
- Floating contacts aid in alignment and in withstanding vibration
- Contacts, precision machined and individually gauged, provide high reliability
- Insertion and withdrawal forces kept low without increasing contact resistance
- Contact plating provides protection against corrosion, assures low contact resistance and ease of soldering

## APPLICATIONS

For use wherever space is at a premium and a high quality connector is required in avionics, automation, communications, controls, instrumentation, missiles, computers and guidance systems.

## MATERIAL SPECIFICATIONS

**Contact Pin:** Brass, gold plated

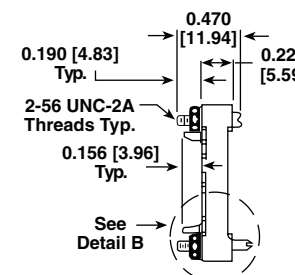
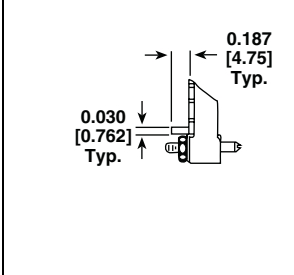
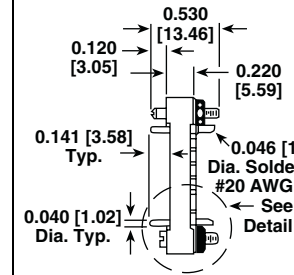
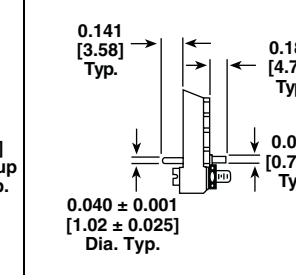
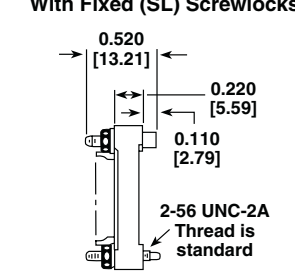
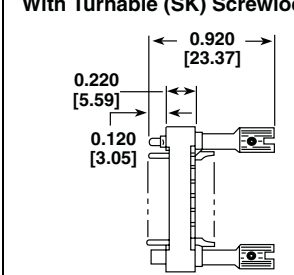
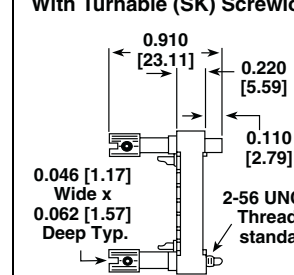
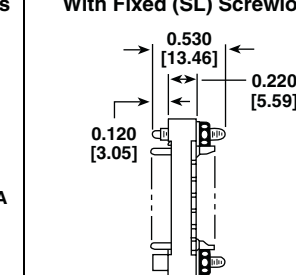
**Contact Socket:** Phosphor bronze, gold plated

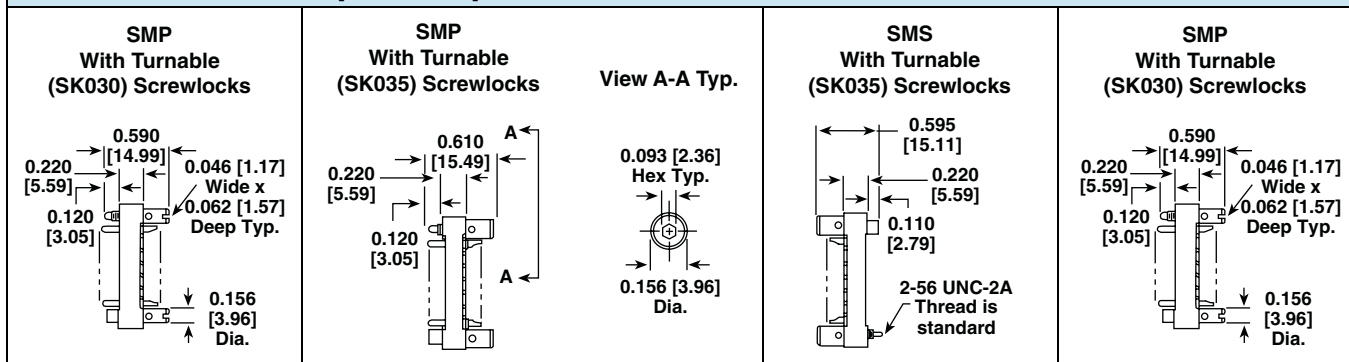
(Beryllium copper available on request)

**Guides:** Stainless steel, passivated

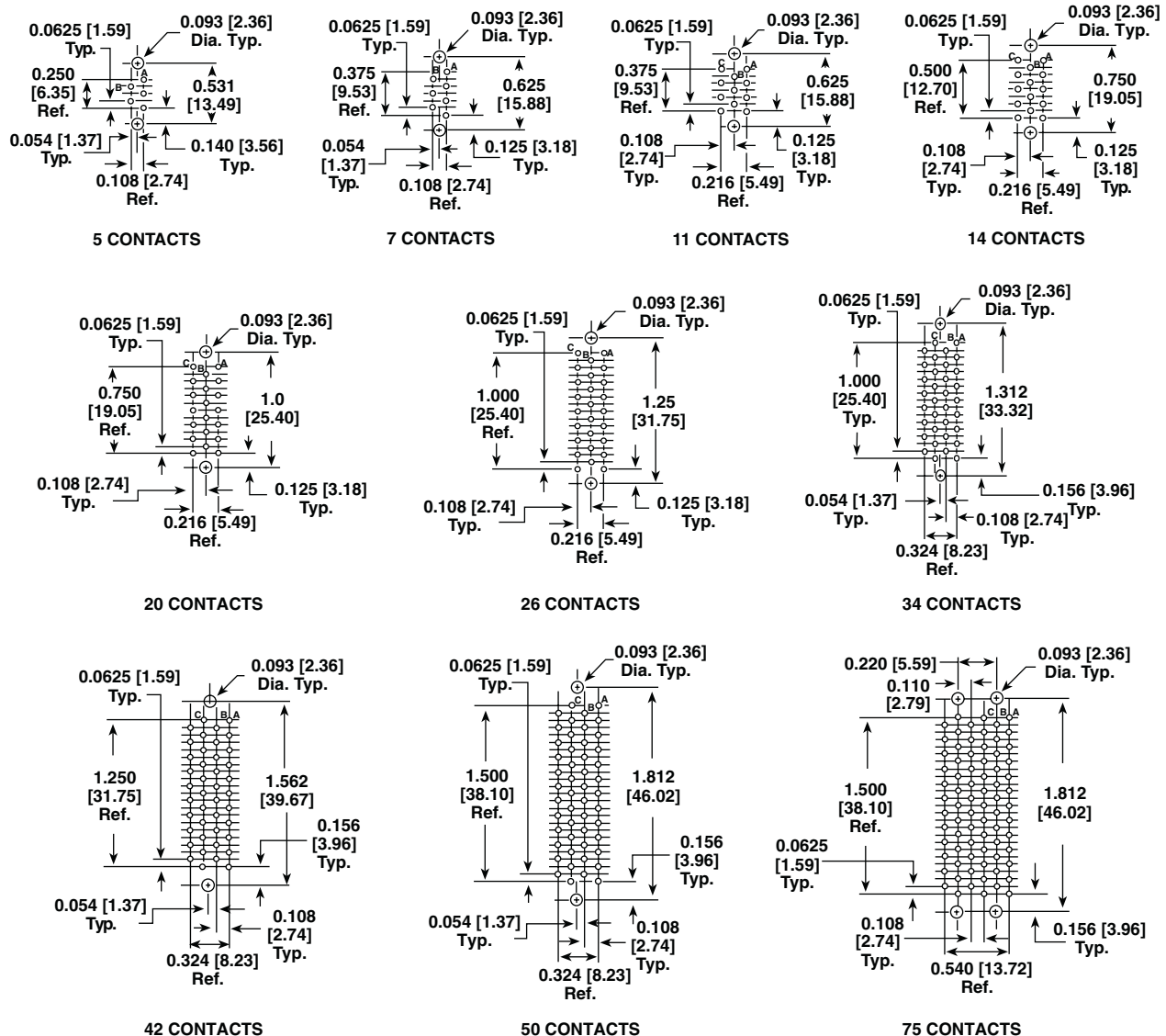
**Screwlocks:** Stainless steel, passivated

**Standard Body:** Glass-filled diallyl phthalate per MIL-M-14, Model GDI-30F, green

| DIMENSIONS in inches [millimeters]                                                                                                                                                                                                |                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>SMS</b><br/>With Fixed Standard Guides</p>  <p>0.190 [4.83] Typ.<br/>2-56 UNC-2A Threads Typ.<br/>0.156 [3.96] Typ.<br/>See Detail B</p> | <p><b>SMDS - DETAIL B</b><br/>Dip Solder Contact Option</p>  <p>0.187 [4.75] Typ.<br/>0.030 [0.762] Typ.</p> | <p><b>SMP</b><br/>With Fixed Standard Guides</p>  <p>0.530 [13.46]<br/>0.120 [3.05]<br/>0.220 [5.59]<br/>0.141 [3.58] Typ.<br/>0.046 [1.17] Dia. Solder Cup #20 AWG Typ.<br/>0.040 [1.02] Dia. Typ.<br/>See Detail C</p> | <p><b>SMDP - DETAIL C</b><br/>Dip Solder Contact Option</p>  <p>0.141 [3.58] Typ.<br/>0.187 [4.75] Typ.<br/>0.030 [0.762] Typ.<br/>0.040 ± 0.001 [1.02 ± 0.025] Dia. Typ.</p> |
| <p><b>SMS</b><br/>With Fixed (SL) Screwlocks</p>  <p>0.520 [13.21]<br/>0.220 [5.59]<br/>0.110 [2.79]<br/>2-56 UNC-2A Thread is standard</p>    | <p><b>SMP</b><br/>With Turnable (SK) Screwlocks</p>  <p>0.920 [23.37]<br/>0.220 [5.59]<br/>0.120 [3.05]</p>  | <p><b>SMS</b><br/>With Turnable (SK) Screwlocks</p>  <p>0.910 [23.11]<br/>0.220 [5.59]<br/>0.110 [2.79]<br/>0.046 [1.17] Wide x 0.062 [1.57] Deep Typ.<br/>2-56 UNC-2A Thread is standard</p>                            | <p><b>SMP</b><br/>With Fixed (SL) Screwlocks</p>  <p>0.530 [13.46]<br/>0.220 [5.59]<br/>0.120 [3.05]</p>                                                                      |

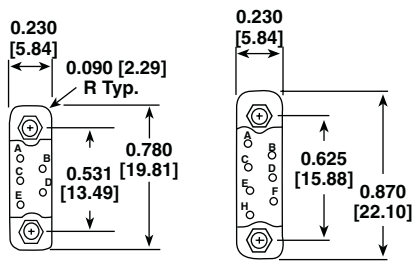
**DIMENSIONS** in inches [millimeters]**TERMINAL VARIATIONS** in inches [millimeters]**DIP SOLDER PC BOARD MOUNTING PATTERNS**

Male (SMP) Connector is shown - Female is opposite. Contact row and Mating Hole  $\varnothing$  to  $\varnothing$  Dimensions also applies to Solder Cup Connectors.

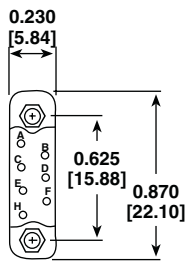


**DIMENSIONS** in inches [millimeters]

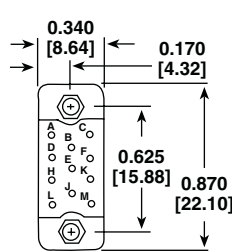
**NOTE:** The views below show the wiring side of a pin model connector (female is opposite). Socket hardware is assembled at "A" contact end of a pin model connector.



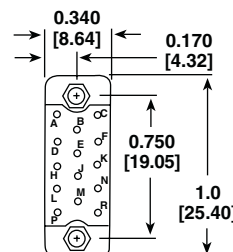
5 CONTACTS



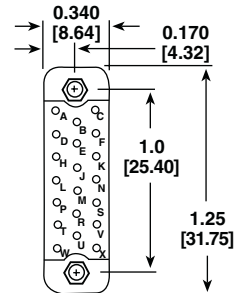
7 CONTACTS



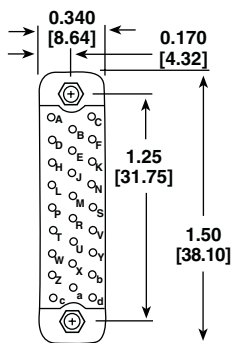
11 CONTACTS



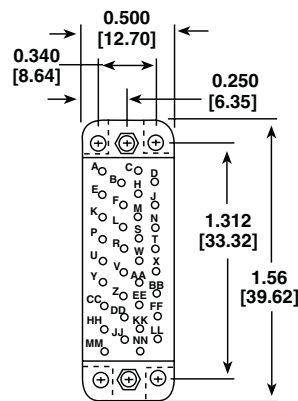
14 CONTACTS



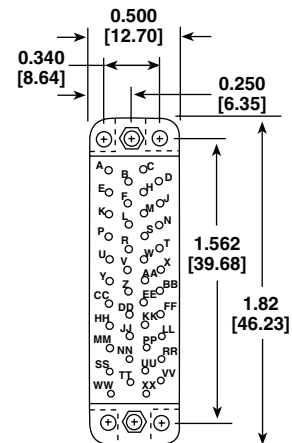
20 CONTACTS



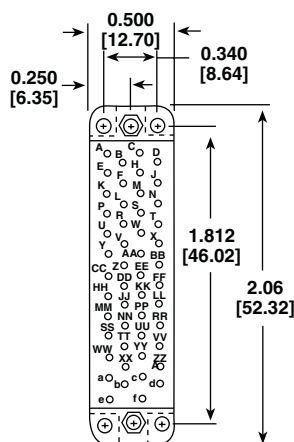
26 CONTACTS



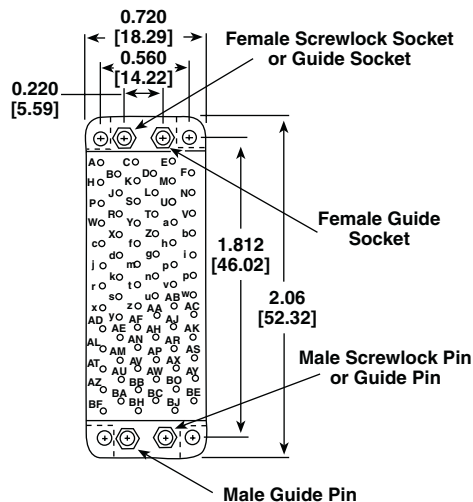
34 CONTACTS



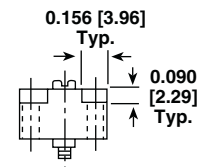
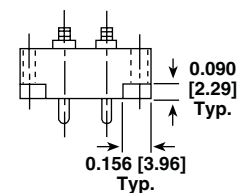
42 CONTACTS



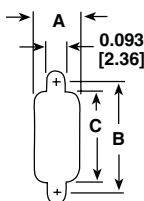
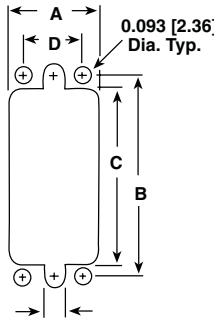
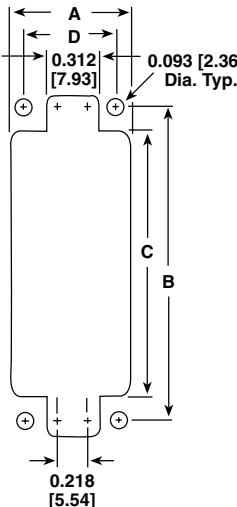
50 CONTACTS



75 CONTACTS


TYPICAL END VIEW  
34 THRU 50 CONTACTS

TYPICAL END VIEW  
75 CONTACTS

**PANEL CUTOUT** in inches [millimeters]

|                                                                                   |                                                                                   |                                                                                   | NUMBER OF CONTACTS | A                | B                | C                | D                | FIGURE |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------|------------------|------------------|------------------|------------------|--------|
|  |  |  | 5                  | 0.230<br>[5.84]  | 0.531<br>[13.49] | 0.410<br>[10.41] | -                | I      |
|                                                                                   |                                                                                   |                                                                                   | 7                  | 0.230<br>[5.84]  | 0.625<br>[15.88] | 0.500<br>[12.70] | -                |        |
|                                                                                   |                                                                                   |                                                                                   | 11                 | 0.340<br>[8.64]  | 0.625<br>[15.88] | 0.530<br>[13.46] | -                |        |
|                                                                                   |                                                                                   |                                                                                   | 14                 | 0.340<br>[8.64]  | 0.750<br>[19.05] | 0.620<br>[15.75] | -                |        |
|                                                                                   |                                                                                   |                                                                                   | 20                 | 0.340<br>[8.64]  | 1.0<br>[25.40]   | 0.910<br>[23.11] | -                |        |
|                                                                                   |                                                                                   |                                                                                   | 26                 | 0.340<br>[8.64]  | 1.25<br>[31.75]  | 1.16<br>[29.46]  | -                |        |
|                                                                                   |                                                                                   |                                                                                   | 34                 | 0.500<br>[12.70] | 1.312<br>[33.32] | 1.16<br>[29.46]  | 0.343<br>[8.71]  | II     |
|                                                                                   |                                                                                   |                                                                                   | 42                 | 0.500<br>[12.70] | 1.562<br>[39.68] | 1.41<br>[35.81]  | 0.343<br>[8.71]  |        |
|                                                                                   |                                                                                   |                                                                                   | 50                 | 0.500<br>[12.70] | 1.812<br>[46.02] | 1.66<br>[42.16]  | 0.343<br>[8.71]  |        |
|                                                                                   |                                                                                   |                                                                                   | 75                 | 0.720<br>[18.29] | 1.812<br>[46.02] | 1.66<br>[42.16]  | 0.562<br>[14.28] | III    |

**ORDERING INFORMATION**

| C                                                                            | SM           | B                                                                                           | S                     | 20           | G                                                                                                                                                                    | 26                                      | R                                                                    | 027 <sup>(1)</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------|-----------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CONTACTS                                                                     | MODEL        | CONTACT TYPE                                                                                | CONTACT STYLE         | CONTACT SIZE | PLATING                                                                                                                                                              | NUMBER OF CONTACTS                      | (OPTIONAL)                                                           | HARDWARE OPTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                              | Subminiature |                                                                                             | P = Pin<br>S = Socket | #20 AWG      |                                                                                                                                                                      | 5, 7, 11, 14, 20,<br>26, 34, 42, 50, 75 |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| (OPTIONAL)<br>Closed entry socket contacts only. Omit for standard contacts. |              |                                                                                             |                       |              | Optional plating available:<br>G = Gold (0.00003 thick) over nickel<br>G5 = Gold (0.00005 thick) over nickel<br>Omit designator for gold (0.00001 thick) over nickel |                                         | (OPTIONAL)<br>R = Reversed guides or screwlocks<br>Omit for standard |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                              |              | (OPTIONAL)<br>B = Beryllium copper, socket contacts (Solder cup)<br>D = Dip solder contacts |                       |              |                                                                                                                                                                      |                                         |                                                                      | (Omit if no hardware desired)<br>027 = Slotted cres guides 0.090" [2.29 mm] diameter<br>SK = Turnable screwlocks with 2-56 threads<br>SK3 = Turnable screwlocks with 3-48 threads<br>SL = Fixed screwlocks with 2-56 threads<br>SL3 = Fixed screwlocks with 3-48 threads<br>SK030 = Turnable screwlocks with short slotted knobs<br>SK035 = Turnable screwlocks with socket head knobs<br>SK3030 = Turnable screwlocks with short slotted knobs with 3-48 threads<br>SK3035 = Turnable screwlocks with socket head knobs with 3-48 threads |

**EXAMPLES:**  
 SMBS20-26SK035 = Female, 26 beryllium copper socket contacts with socket head knobs on turnable screwlocks for #20 AWG wiring.  
 SMP20-14SL3 = Male, 14 contact pins, fixed screwlocks with 3-48 threads for #20 AWG wiring.

**Note**

<sup>(1)</sup> To order complete connector with hardware supplied unassembled, add suffix "UA" on end of hardware designation.



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