Modular & Custom Design, Vertically Integrated Manufacturing

From Ocean Depths to Outer Space - Medical Operating Rooms to Living Rooms

ISO 9001:2015 ROHS Compliant REACH Compliant U/L Approved



- Patented shock & vibration approved design
- Set point ranges from 0.1" to 50" WC



- Factory set switch points from 0.5" to 50" WC
- Miniature size, lightweight & low cost



- Field adjustable switch points from .03" WC to 25psi
- Many standard port & mounting options available



- · Dual set points
- Set point ranges from 0.1" to 50" WC



- Field adjustable switch points from 3.0" WC to 60psi
- Snap action switch design suitable for high current applications



- Field adjustable switch points from -3.0" WC to -12psi
- Vacuum ports available to suit most applications

#### **PS100**



Pressure, Vacuum & Differential Pressure Switch

- Field adjustable ranges from 0.1" WC to 5.0" WC
- · Suitable for both high and low current applications

#### **PS160**



**Pressure, Vacuum & Differential Pressure Switch** 

- Factory set points: 0.1" to 5.0" H20
- Reliable performance under harsh conditions

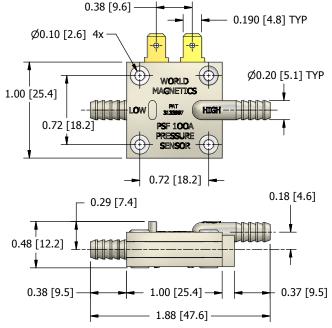
#### **KEY SWITCH FEATURES**

Small, Lightweight, Ultra-Sensitive

Dependable, Long-Life

**Modular Parts, Custom Options** 

Low Relative Cost & Small Minimum Orders PSF100A SERIES



#### FEATURES / BENEFITS

- Patented shock and vibration resistance
- Miniature size, lightweight, low cost
- Quick response time
- Dependable long life (20+ million cycles)
- Gold contact points (dual)
- Rugged Military Standard (MIL-SPEC)



The rugged yet ultra-sensitive PSF100A pressure switch incorporates a patented dual diaphragm / dual contact design offering protection against false actuation due to shock and vibration. Sample switch available by request.

#### SPECIFICATIONS

| WECHANICAL                 |   |
|----------------------------|---|
| Standard Tolerance         | ±20% (Tighter tolerances available)   |
| Switch Type                | SPST normally open   double-make / double-break   |
| Switching Medium           | Air; compatible fluids on "High" side   |
| Mechanical Life            | More than 20 million cycles   |
| Maximum Operating Pressure | 8psi: for units where set point is $3.0''  \text{H}_2\text{O}$ or less 15psi: for units where set point is greater than $3.0''  \text{H}_2\text{O}$ 4psi: for units with Teflon® diaphragm of $0.5''  \text{H}_2\text{O}$ or less 8psi: for units with Teflon® diaphragm greater than $0.5''  \text{H}_2\text{O}$ |
| Shock & Vibration          | At zero pressure, will not make at 50G's shock, will not make at 10G's, 50 to 2000 Hz vibration   |
| Operating Temp.            | +40°F to +150°F (standard)   -46°F to +205°F (contact us)   |
|                            |   |

| PHYSICAL               |  |
|------------------------|--|
| Case Material          | Polycarbonate (other materials available)  |
| Porting Options        | Two .200" diameter barbed ports (low / high) for use with 1/8" - 3/16" ID tubing |
| Diaphragm Material     | Polyurethane / Teflon® (other material options available)                        |
| Contact Points         | Gold (dual)  |
| Electrical Connections | Terminals — .187″x.020″ tab-type, for use with                                   |

| Electrical Connections | Terminals – .187"x.020" tab-type, for use with quick disconnects (ref. AMP 2-520182-2 or equivalent) |
|------------------------|--|
| Mounting               | Eyeleted for #2 screws;<br>mounting clip available   |
| Weight                 | Less than 10 grams   |
|                        |  |

### **ELECTRICAL**

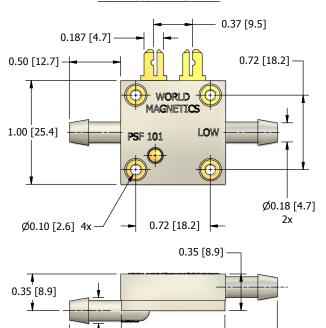
| Current Rating    | 40mA resistive for life in excess of 20 million cycles          |
|-------------------|---|
| Operating Voltage | AC/DC – 30V or less with resistive load; 120 VAC neon lamp load |

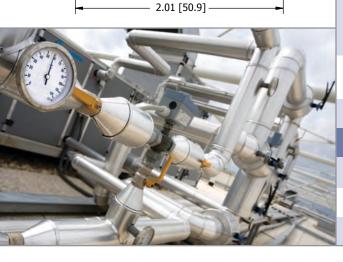
| SET F                | NOTE: For TEFLON® diaphragm add "T" to set point |       |       |       |       |       |       |       |       |       |       |       |       |       |        |
|----------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
|                      | 0.5  | 1.0   | 1.5   | 2.0   | 3.0   | 4.0   | 6.0   | 8.0   | 10.0  | 12.0  | 15.0  | 20.0  | 30.0  | 40.0  | 50.0   |
| In. H <sub>2</sub> 0 | 0.1 - 0.5  | 1.0   | 1.5   | 2.0   | 3.0   | 4.0   | 6.0   | 8.0   | 10.0  | 12.0  | 15.0  | 20.0  | 30.0  | 40.0  | 50.0   |
| mbar                 | 0.25 - 1.25                                      | 2.49  | 3.73  | 4.98  | 7.47  | 9.96  | 14.95 | 19.92 | 24.91 | 29.91 | 37.36 | 49.76 | 74.73 | 99.63 | 124.59 |
| psi                  | 0.004 - 0.018                                    | 0.036 | 0.054 | 0.072 | 0.108 | 0.144 | 0.217 | 0.289 | 0.361 | 0.433 | 0.541 | 0.722 | 1.083 | 1.444 | 1.804  |

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#### MODEL 865X-XXX SHOWN





- 1.00 [25.4] -

Ø0.25 [6.4] 2x

### FEATURES / BENEFITS

- Many standard port and mounting options
- Custom design and engineering available
- Miniature size, lightweight, low cost
- Quick response time
- Dependable long life (20+ million cycles)
- Gold contact points
- PCB terminals available
- Factory set, tamper proof



#### **SPECIFICATIONS**

| NAFCHANICAL                |  |
|----------------------------|--|
| MECHANICAL                 |  |
| Standard Tolerance         | ±20% (Tighter tolerances available)  |
| Switch Type                | SPST normally open   |
| Switching Medium           | Air; compatible fluids on "High" port side   |
| Mechanical Life            | More than 20 million cycles  |
| Maximum Operating Pressure | 8psi: for units where set point is 3.0" H <sub>2</sub> O or less<br>15psi: for units where set point is greater than 3.0" H <sub>2</sub> O<br>8psi: for units with Teflon <sup>®</sup> diaphragm |
| Operating Temp.            | +40°F to +150°F (standard)   -46°F to +205°F (contact us)  |
| PHYSICAL                   |  |
| Case Material              | Polycarbonate (optional: Lexan 141, Ryton®, Ultem®, Noryl®)  |
| Porting Options            | Many standard ports — see Low Port / High Port Options overleaf  |
| Diaphragm Material         | Polyurethane / Teflon® (other material options available)  |
| Contact Points             | Gold   |
| Electrical Connections     | Terminals – .187"x.020" tab-type (bifurcated), for use with quick disconnects (ref. AMP 2-520182-2 or equivalent) .020"x.060" (PCB terminals available)  |
| Mounting                   | #4 Screws through mounting lugs; #2 Screws through eyelets;<br>mounting clip available for specific port arrangement only  |
| Weight                     | Less than 10 grams   |
| ELECTRICAL                 |  |
| Current Rating             | Up to 40mA resistive   |

Note: For higher load capabilities see our PSF103, PSF109 and Goldtech series switches.

AC/DC - 30V or less with resistive load; 120 VAC neon lamp load

**Operating Voltage** 

World Magnetics' exclusive DesignFlex™ feature allows you to quickly custom design a proven pressure, vacuum or differential switch for your application. Choose from our standard PSF101 options as shown below or contact our vertically integrated in-house design and engineering team for special features and unique application needs. Sample switch available by request.

| SET POINT OPTIONS    |                                     |       |                  |                           |                     |        |                      |                       |                    |                                   |                           |           |             |  |                                  |  |
|----------------------|-------------------------------------|-------|------------------|---------------------------|---------------------|--------|----------------------|-----------------------|--------------------|-----------------------------------|---------------------------|-----------|-------------|--|----------------------------------|--|
|                      | 005                                 | 010   | 015              | 020                       | 030                 | 040    | 060                  | 080                   | 100                | 120                               | 150                       | 200       | 300         | 400                                    | 500                              |  |
| In. H <sub>2</sub> 0 | 0.1 - 0.5                           | 1.0   | 1.5              | 2.0                       | 3.0                 | 4.0    | 6.0                  | 8.0                   | 10.0               | 12.0                              | 15.0                      | 20.0      | 30.0        | 40.0                                   | 50.0                             |  |
| mbar                 | 0.25 - 1.25                         | 2.49  | 3.73             | 4.98                      | 7.47                | 9.96   | 14.95                | 19.92                 | 24.91              | 29.91                             | 37.36                     | 49.76     | 74.73       | 99.63                                  | 124.59                           |  |
| psi                  | 0.004 -0.018                        | 0.036 | 0.054            | 0.072                     | 0.108               | 0.144  | 0.217                | 0.289                 | 0.361              | 0.433                             | 0.541                     | 0.722     | 1.083       | 1.444                                  | 1.804                            |  |
| LOW P                | ORT OP                              | тіо   | N S              |                           |                     |        |                      |                       | HIG                | н ро                              | RT O                      | PTIO      | N S         |  |                                  |  |
| 1                    | M.A.                                |       | 2                |                           |                     | 1      |                      |                       |                    | 2                                 | •                         |           | 3           |  |                                  |  |
|                      | ort .156" diamet<br>tubing w/mtg. l |       |                  | Port .156"<br>D tubing w/ |                     |        |                      | .156" diam            | eter               |                                   | h Port .187<br>r 5/32" ID |           |             |  | t .250" diameter<br>2" ID tubing |  |
| 3                    | MA                                  |       | 4                |                           |                     | 5      |                      |                       | 2                  | 4                                 |                           |           | 5           |  |                                  |  |
| 1                    | ort .250" diamet<br>tubing w/mtg.   |       |                  | Port .250"<br>D tubing w, |                     | for 3  |                      | ed Port<br>ping w/mtg | . lugs             |                                   | 1/8" NPT I                | ort       |             |  | bed Port<br>6″ ID tubing         |  |
| 6                    | MAC                                 |       | 7                |                           |                     | 8      |                      |                       |                    | 6                                 | •                         | •         | 7           |  |                                  |  |
| 1                    | arbed Port<br>tubing w/o mtg.       | lugs  | (.060" ve        | No Port<br>ent hole) w,   | /mtg. lugs          | (.060  |                      | Port<br>e) w/o mtg    | . lugs             | (.                                | No Por<br>.060" vent      |           |             |  | u Barbed Port<br>3″ ID tubing    |  |
| 9                    | MA September 1                      |       | 0                | Daybad Da                 | F                   | 1<br>1 |                      | m Optinane (star      | _                  | 8                                 | Doub1-D                   |           | 9           |  | A" Dozt                          |  |
|                      | arbed Port<br>tubing w/mtg. I       | ugs   |                  | Barbed Pool<br>tubing wa  |                     |        | - Torrorr (optional) |                       |                    | Barbed Port<br>for 1/8" ID tubing |                           |           |             | 1/4" Port<br>for Quick Connect Fitting |                                  |  |
| Model<br>Design      | Guide                               |       | PSF101 S<br>Numb |                           | Low Po<br>Option Nu |        | High P<br>Option Nu  |                       | Diaphi<br>Option N |                                   |                           | Three Dig | git Set Poi | nt Option N                            | lumber                           |  |

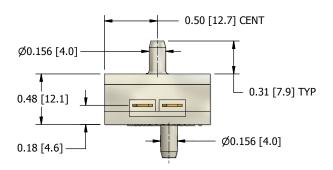
# Design Guide

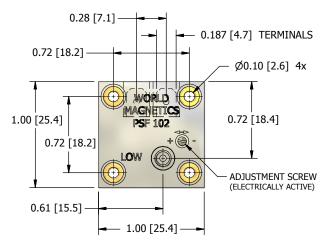
Option Number



**RoHS** 

### MODEL 721X-XXX SHOWN







### FEATURES / BENEFITS

- Field adjustable set point ranges from 0.03" H<sub>2</sub>O to 25 psi
- High resolution / high accuracy field adjustment mechanism
- Many standard ports and mounting options
- Custom design and engineering available
- Miniature size, lightweight, low cost
- Dependable long life (20+ million cycles)
- Gold contact points
- PCB terminals available



#### **SPECIFICATIONS**

| M |  |  |  |
|---|--|--|--|
|   |  |  |  |
|   |  |  |  |

| Standard Tolerance         | Varies by option – see Set Point Options overleaf                                    |
|----------------------------|--|
| Switch Type                | SPST (single pole / single throw) normally open normally closed option — contact us  |
| Switching Medium           | Air; compatible fluids on "High" port side   |
| Mechanical Life            | More than 20 million cycles  |
| Maximum Operating Pressure | Varies by option — see Set Point Options overleaf                                    |
| Operating Temp.            | +40°F to +150°F (standard)   -46°F to +205°F (contact us)<br>+50° - 86°F (700 range) |

#### **PHYSICAL**

| Case Material          | Polycarbonate (optional: Lexan 141, Ryton, Ultem®, Noryl®)   |
|------------------------|--|
| Porting Options        | Many standard ports — see Low Port / High Port Options overleaf  |
| Diaphragm Material     | Polyurethane / Teflon® (other material options available)  |
| Contact Points         | Gold   |
| Electrical Connections | Terminals – .187"x.020" spade (recessed) for use with quick disconnects uninsulated (ref. AMP Faston, #8-640917-1, 187 Series) (PCB terminals available) |
| Mounting               | #4 Screws through mounting lugs; #2 Screws through eyelets;<br>mounting clip available   |
| Weight                 | Less than 10 grams   |

#### **ELECTRICAL**

| Current Rating    | Up to 40mA resistive  |
|-------------------|---|
| Operating Voltage | AC/DC-30V or less with resistive load; 120 VAC neon lamp load |

Note: For higher load capabilities see our PSF103, PSF109 and Goldtech series switches.

World Magnetics' exclusive DesignFlex™ feature allows you to quickly custom design a proven pressure, vacuum or differential switch for your application. Choose from our standard PSF102 options as shown or contact our vertically integrated in-house design and engineering team for special features.

| SET POIN  | T OPTIONS           | 5   |                                |                           |  |                |  |
|---|---------------------|---|--------------------------------|---------------------------|--|----------------|--|
|   | 700                 | 710   | 711                            | 712                       | 713  | 723            | 714                                    |
| In. H <sub>2</sub> 0                            | 0.03 to 0.1         | 0.1 to 0.5  | 0.5 to 2.0                     | 2.0 to 15.0               | 15.0 to 60.0                                   | 60.0 to 100.0  | 100.0 to 692.0                         |
| mbar  | 0.07 to 0.25        | 0.25 to 1.25                                      | 1.25 to 4.98                   | 4.98 to 37.36             | 37.36 to 149.5                                 | 149.5 to 249.0 | 249.0 to 1723.5                        |
| psi   | 0.001 to 0.004      | 0.004 to 0.018                                    | 0.018 to 0.072                 | 0.072 to 0.542            | 0.542 to 2.17                                  | 2.17 to 3.61   | 3.61 to 25.0                           |
| Maximum Operating Pressure                      | 2psi                | 4psi  | 8psi                           | 8psi                      | 15psi  | 30psi          | 30psi                                  |
| Tolerance                                       | +/- 0.03" H20       | +/- 0.1" H <sub>2</sub> 0                         | +/- 0.2" H <sub>2</sub> 0      | +/- 0.5" H <sub>2</sub> 0 | +/- 10%  | +/- 10%        | +/- 10%                                |
| Diaphragm Material                              | PUR only            | Teflon only                                       | PUR or Teflon                  | PUR or Teflon             | PUR or Teflon                                  | PUR or Teflon  | PUR or Teflon                          |
| LOW PORT (                                      | OPTIONS             |   |                                | HIGH                      | PORT OPTI                                      | ONS            |  |
| 1   | 2                   |   | 1                              |                           | 2  | 3              |  |
| Smooth Port .156" dia<br>for 1/8" ID tubing w/m |                     | th Port .156" diameter<br>ID tubing w/o mtg. lugs | Smooth Port .15<br>for 1/8" ID |                           | Smooth Port .187" diame<br>for 5/32" ID tubing |                | Port .250" diameter<br>7/32" ID tubing |
| 3   | 4                   |   |                                |                           | 4  | 5              |  |
| No Port<br>(.060" vent hole) w/m                | tg. lugs (.060" ve  | No Port<br>ent hole) w/o mtg. lugs                | - 1                            | 6330                      | 1/8" NPT Port                                  | for            | Barbed Port<br>3/16" ID tubing         |
| 5   | 6                   |   |                                | ne (standard)             | 6  | 7 (            | 0 0                                    |
| Barbed Port<br>for 3/16" ID tubing w/r          | ntg. lugs for 3/16" | Barbed Port<br>ID tubing w/o mtg. lugs            | 2 Teflon (option               | onal)                     | No Port<br>(.060" vent hole)                   |                | r-Thru Barbed Port<br>r 1/8" ID tubing |
| 7   | 8                   |   | 8                              |                           | 9  | 0              |  |
| Barbed Port                                     | ta luga   for 1/0"  | Barbed Port                                       | Barbed                         |                           | 1/4" Port                                      |                | M8 x 1.25 Port                         |

Model Design Guide

for 1/8" ID tubing w/mtg. lugs

PSF102 Series Number

for 1/8" ID tubing w/o mtg. lugs

Low Port Option Number

High Port Option Number

for 1/8" ID tubing

Diaphragm Option Number

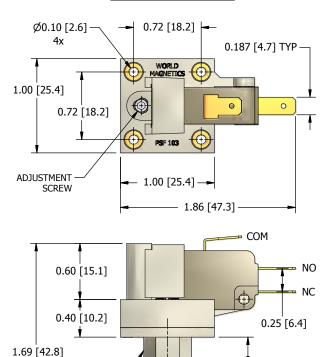
for Quick Connect Fitting

Three Digit Set Point Option Number





#### MODEL 906X-XXX SHOWN





0.29 [7.3]

0.44 [11.2] HEX

#### FEATURES / BENEFITS

- Field adjustable pressure set point, from 3" H<sub>2</sub>O to 60 psi
- Snap action basic switch, up to 25A\*, 125/250 VAC \*Not available on all ranges
- Many standard pressure ports and mounting options
- Custom design and engineering available
- Small size, lightweight, low cost
- Dependable long life (10+ million cycles)



#### **SPECIFICATIONS**

**MECHANICAL** 

| Standard Tolerance            | ±20% (Tighter tolerances available)   |
|-------------------------------|---|
| Switch Type                   | SPDT (single pole / double throw) normally open or normally closed  |
| Switching Medium              | Air; compatible fluids  |
| Mechanical Life               | More than 10 million cycles   |
| Maximum Operating<br>Pressure | Varies by option — see Adjustable Pressure Set Point Options overleaf   |
| Operating Temp.               | +40°F to +150°F (standard)   -46°F to +205°F (contact us)   |
| PHYSICAL                      |   |
| Case Material                 | Polycarbonate (optional: Lexan 141, Ryton®, Ultem®, Noryl®)<br>905 — 906 range use PPS wetted parts                               |
| Pressure Port Options         | Many standard ports — see Pressure Port / Cover Options overleaf  |
| Diaphragm Material            | Polyurethane (Teflon® optional with limited pressure ranges) other options available  |
| Contact Points                | Silver (Gold available on special order)  |
| Electrical Connections        | Terminals — .187"x.020" tab-type for use with quick disconnects (ref. AMP #2-520182-2 or equivalent) .250" available — contact us |
| Mounting                      | #4 Screws through mounting lugs; #2 Screws through eyelets  |
| Weight                        | Less than 20 grams  |
| ELECTRICAL                    |   |

Varies by option - see Adjustable Pressure Set Point Options overleaf

See Adjustable Pressure Set Point Options overleaf

**Operating Voltage** 

**Current Rating** 

DESIGNFLEX™ STANDARD OPTIONS — Choose from our standard PSF103 options as shown below or contact our vertically integrated in-house design and engineering team for special features and unique application needs. Sample switch available by request.

| ADJUSTABLE PRESSURE SET POINT OPTIONS   |              |            |             |            |            |             |                 |  |  |  |
|---|--------------|------------|-------------|------------|------------|-------------|-----------------|--|--|--|
|   | 010*         | 020*       | 902         | 903        | 904        | 905         | 906             |  |  |  |
| In H <sub>2</sub> 0                     | 0.5 to 2.0   | 1.5 to 2.5 | 3 to 10     | 10 to 28   | 28 to 111  | 111 to 416  | 416 to 1664     |  |  |  |
| mbar                                    | 1.2 to 5.0   | 5.0        | 7.5 to 25   | 25 to 69   | 69 to 276  | 276 to 1036 | 1036 to 4144    |  |  |  |
| psi                                     | 0.018 to.072 | 0.072      | 0.11 to 0.4 | 0.4 to 1.0 | 1.0 to 4.0 | 4.0 to 15   | 15.0 to 60.0    |  |  |  |
| Max. Operating Pressure (PUR)           | 30psi        | 30psi      | 30psi       | 30psi      | 30psi      | 70psi       | 70psi           |  |  |  |
| Max. Operating Pressure (Teflon®)       | 15psi        | 15psi      | 15psi       | 30psi      | 30psi      | 30psi       | 30psi           |  |  |  |
| Electrical<br>125/250 VAC Resitive Load | 3A           | 3A         | 3A          | 10A        | 15A        | 15A         | 15A             |  |  |  |
|   |              |            |             |            |            |             | *Non adjustable |  |  |  |



M8 x 1.25 Port

15

Model Design Guide PSF103 Series Number

Diaphragm Option Number

1 Polyurethane (standard)

2 Teflon (optional)

Three Digit Pressure Set Point Option Number

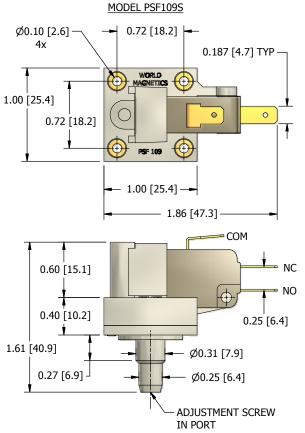


**AVAILABLE** 

**PORTING AND** 

MOUNTING OPTIONS





The versatile high-current PSF109S vacuum switch offers a wide-range field adjustable set point; snap action; and choice of standard vacuum port design options. For custom applications, our in-house design and engineering team provides rapid prototyping and manufacturing turnaround.

#### FEATURES / BENEFITS

- Field adjustable vacuum set point ranges, from -3" H<sub>2</sub>O to -12 psi
- Snap action basic switch, up to 25A\*, 125/250 VAC
   \*Not available on all ranges
- .250" diameter; 1/8" NPT; or 1/4" Quick Connect Fitting port
- Custom design and engineering available
- Small size, lightweight, low cost
- Dependable long life (10+ million cycles)



#### **SPECIFICATIONS**

| MECHANICAL             |   |
|------------------------|---|
| Standard Tolerance     | ±20% (Tighter tolerances available)   |
| Switch Type            | SPDT normally open or normally closed   |
| Switching Medium       | Air; compatible fluids  |
| Mechanical Life        | More than 10 million cycles   |
| Operating Temp.        | +40°F to +150°F (standard)   -46°F to +205°F (contact us)   |
| PHYSICAL               |   |
| Case Material          | Polycarbonate (optional: Lexan 141, Ryton, Ultem®, Noryl®)  |
| Vacuum Port Options    | .250" diameter, 1/8" NPT, Quick Connect Fitting Port  |
| Diaphragm Material     | Polyurethane / Teflon® (other material options available)   |
| Contact Points         | Silver (Gold available on special order)  |
| Electrical Connections | Terminals – .187"x.020" tab-type for use with quick disconnects (ref. AMP #2-520182-2 or equivalent) .250" available — contact us |
| Mounting               | #2 Screws through eyelets   |
| Weight                 | Less than 20 grams  |
| ELECTRICAL             |   |
| Current Rating         | Varies by option — see Adjustable Vacuum Set Point Options overleaf   |
| Operating Voltage      | 125/250 VAC— see Adjustable Vacuum Set Point Options (overleaf)   |
|                        |   |

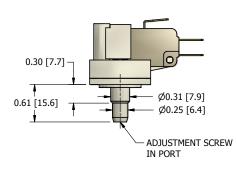
#### ADJUSTABLE VACUUM SET POINT / PORT / ELECTRIC RATING OPTIONS

|  | 20161            | 20112           | 20623           |
|--|------------------|-----------------|-----------------|
| Description                              | 109S-3-8         | 109S-9-80       | 109S-81-330     |
| - In. Hg                                 | 0.2205 to 0.5885 | 0.6613 to 5.878 | 5.951 to 24.25  |
| - In. H <sub>2</sub> 0                   | 3 to 8           | 9 to 80         | 81 to 330       |
| - mbar                                   | 7.5 to 20        | 22 to 199       | 202 to 822      |
| - psi                                    | 0.1 to 0.30      | 0.30 to 2.90    | 2.9 to 11.9     |
| Port Style (see drawing below)           | А                | А               | A               |
| Electrical 125/250VAC<br>Resisitive Load | 3A               | 10A             | 15A             |
|  | 20901            | 20890           | 20897           |
| Description                              | 109S-NPT-3-8     | 109S-NPT-9-80   | 109S-NPT-81-330 |
| - In. Hg                                 | 0.2205 to 0.5885 | 0.6613 to 5.878 | 5.951 to 24.25  |
| - In. H <sub>2</sub> 0                   | 3 to 8           | 9 to 80         | 81 to 330       |
| - mbar                                   | 7.5 to 20        | 22 to 199       | 202 to 822      |
| - psi                                    | 0.10 to 0.30     | 0.30 to 2.90    | 2.9 to 11.9     |
| Port Style (see drawing below)           | В                | В               | В               |
| Electrical 125/250VAC<br>Resisitive Load | 3A               | 10A             | 15A             |
|  | 21472            | 21473           | 21474           |
| Description                              | 109S-QC-3-8      | 109S-QC-9-80    | 109S-QC-81-330  |
| - In. Hg                                 | 0.2205 to 0.5885 | 0.6613 to 5.878 | 5.951 to 24.25  |
| - In. H <sub>2</sub> 0                   | 3 to 8           | 9 to 80         | 81 to 330       |
| - mbar                                   | 7.5 to 20        | 22 to 199       | 202 to 822      |
| - psi                                    | 0.10 to 0.30     | 0.30 to 2.90    | 2.9 to 11.9     |
| Port Style (see drawing below)           | C                | С               | C               |
| Electrical 125/250VAC<br>Resisitive Load | 3A               | 10A             | 15A             |

#### SAMPLE SWITCH available by request - Call 1-800-643-3884

### PORT STYLE A

Ø 0.25 STEPPED AXIAL PORT

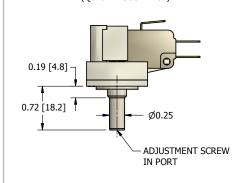


# PORT STYLE B

0.29 [7.3] 0.69 [17.6] 0.44 HEX 1/8-27 NPT ADJUSTMENT SCREW IN PORT

#### PORT STYLE C

JOHN GUEST (QUICK DISCONNECT)



0.190 [4.8] TYP 3x -Ø0.10 [2.6] 4x



## FEATURES / BENEFITS

- **Dual Set Point**
- Miniature size, lightweight, low cost
- Quick response time
- Dependable long life (20+ million cycles)
- Gold contact points

#### **SPECIFICATIONS**

| MECHANICAL                      |  |
|---------------------------------|--|
| Standard Set<br>Point Tolerance | ±20% (Tighter tolerances available)  |
| Switch Type                     | SPST normally open   |
| Switching Medium                | Air; compatible fluids on "High" side  |
| Mechanical Life                 | More than 20 million cycles  |
| Maximum Operating<br>Pressure   | 15psi: for units with polyurethane diaphragm<br>8psi: for units with Teflon® diaphragm               |
| Operating Temp.                 | +40°F to +150°F (standard)   -46°F to +205°F (contact us)  |
| PHYSICAL                        |  |
| Case Material                   | Polycarbonate (other materials available)  |
| Porting Options                 | Two .200" diameter barbed ports (low / high) for use with 1/8" - 3/16" ID tubing                     |
| Diaphragm Material              | Polyurethane / Teflon® (other material options available)  |
| Contact Points                  | Gold   |
| Electrical Connections          | Terminals – .187"x.020" tab-type, for use with quick disconnects (ref. AMP 2-520182-2 or equivalent) |
| Mounting                        | Eyeleted for #2 screws;  |
| Weight                          | Less than 10 grams   |
| ELECTRICAL                      |  |
| Current Rating                  | Up to 40mA resistive   |
| Operating Voltage               | AC/DC – 30V or less with resistive load; 120 VAC neon lamp load                                      |

### 0.30 [7.5] TYP 3x Ø0.20 [5.1] TYP WORLD MAGNETICS 1.00 [25.4] 0.72 [18.2] 0.72 [18.2] 0.18 [4.6] 0.29 [7.4] 0.48 [12.2] 0.37 [9.5] 1.00 [25.4] 0.38 [9.5] -1.88 [47.6]



#### SET POINT OPTIONS (Choose Any Two)

|                      | 4.0   | 6.0   | 8.0   | 10.0  | 12.0  | 14.0  | 16.0  | 18.0  | 20.0  | 25.0  | 30.0  | 35.0  | 40.0  | 45.0   | 50.0   |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| In. H <sub>2</sub> 0 | 4.0   | 6.0   | 8.0   | 10.0  | 12.0  | 14.0  | 16.0  | 18.0  | 20.0  | 25.0  | 30.0  | 35.0  | 40.0  | 45.0   | 50.0   |
| mbar                 | 9.96  | 14.94 | 19.92 | 24.90 | 29.88 | 34.86 | 39.84 | 44.82 | 49.80 | 62.25 | 74.70 | 87.15 | 99.60 | 112.05 | 124.50 |
| psi                  | 0.144 | 0.216 | 0.288 | 0.360 | 0.432 | 0.504 | 0.576 | 0.648 | 0.720 | 0.900 | 1.080 | 1.260 | 1.440 | 1.620  | 1.800  |

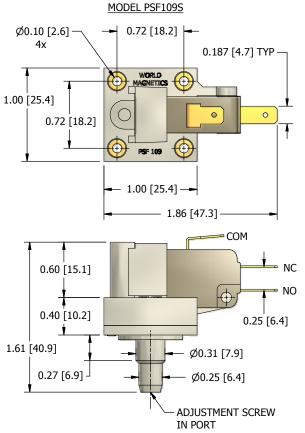
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The versatile high-current PSF109S vacuum switch offers a wide-range field adjustable set point; snap action; and choice of standard vacuum port design options. For custom applications, our in-house design and engineering team provides rapid prototyping and manufacturing turnaround.

#### FEATURES / BENEFITS

- Field adjustable vacuum set point ranges, from -3" H<sub>2</sub>O to -12 psi
- Snap action basic switch, up to 25A\*, 125/250 VAC
   \*Not available on all ranges
- .250" diameter; 1/8" NPT; or 1/4" Quick Connect Fitting port
- Custom design and engineering available
- Small size, lightweight, low cost
- Dependable long life (10+ million cycles)



#### **SPECIFICATIONS**

| MECHANICAL             |   |
|------------------------|---|
| Standard Tolerance     | ±20% (Tighter tolerances available)   |
| Switch Type            | SPDT normally open or normally closed   |
| Switching Medium       | Air; compatible fluids  |
| Mechanical Life        | More than 10 million cycles   |
| Operating Temp.        | +40°F to +150°F (standard)   -46°F to +205°F (contact us)   |
| PHYSICAL               |   |
| Case Material          | Polycarbonate (optional: Lexan 141, Ryton, Ultem®, Noryl®)  |
| Vacuum Port Options    | .250" diameter, 1/8" NPT, Quick Connect Fitting Port  |
| Diaphragm Material     | Polyurethane / Teflon® (other material options available)   |
| Contact Points         | Silver (Gold available on special order)  |
| Electrical Connections | Terminals – .187"x.020" tab-type for use with quick disconnects (ref. AMP #2-520182-2 or equivalent) .250" available — contact us |
| Mounting               | #2 Screws through eyelets   |
| Weight                 | Less than 20 grams  |
| ELECTRICAL             |   |
| Current Rating         | Varies by option — see Adjustable Vacuum Set Point Options overleaf   |
| Operating Voltage      | 125/250 VAC— see Adjustable Vacuum Set Point Options (overleaf)   |
|                        |   |

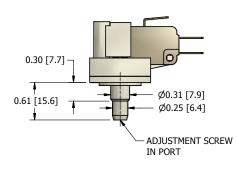
#### ADJUSTABLE VACUUM SET POINT / PORT / ELECTRIC RATING OPTIONS

|  | 20161            | 20112           | 20623           |
|--|------------------|-----------------|-----------------|
| Description                              | 109S-3-8         | 109S-9-80       | 109S-81-330     |
| - In. Hg                                 | 0.2205 to 0.5885 | 0.6613 to 5.878 | 5.951 to 24.25  |
| - In. H <sub>2</sub> 0                   | 3 to 8           | 9 to 80         | 81 to 330       |
| - mbar                                   | 7.5 to 20        | 22 to 199       | 202 to 822      |
| - psi                                    | 0.1 to 0.30      | 0.30 to 2.90    | 2.9 to 11.9     |
| Port Style (see drawing below)           | A                | А               | A               |
| Electrical 125/250VAC<br>Resisitive Load | 3A               | 10A             | 15A             |
|  | 20901            | 20890           | 20897           |
| Description                              | 109S-NPT-3-8     | 109S-NPT-9-80   | 109S-NPT-81-330 |
| - In. Hg                                 | 0.2205 to 0.5885 | 0.6613 to 5.878 | 5.951 to 24.25  |
| - In. H <sub>2</sub> 0                   | 3 to 8           | 9 to 80         | 81 to 330       |
| - mbar                                   | 7.5 to 20        | 22 to 199       | 202 to 822      |
| - psi                                    | 0.10 to 0.30     | 0.30 to 2.90    | 2.9 to 11.9     |
| Port Style (see drawing below)           | В                | В               | В               |
| Electrical 125/250VAC<br>Resisitive Load | 3A               | 10A             | 15A             |
|  | 21472            | 21473           | 21474           |
| Description                              | 109S-QC-3-8      | 109S-QC-9-80    | 109S-QC-81-330  |
| - In. Hg                                 | 0.2205 to 0.5885 | 0.6613 to 5.878 | 5.951 to 24.25  |
| - In. H <sub>2</sub> 0                   | 3 to 8           | 9 to 80         | 81 to 330       |
| - mbar                                   | 7.5 to 20        | 22 to 199       | 202 to 822      |
| - psi                                    | 0.10 to 0.30     | 0.30 to 2.90    | 2.9 to 11.9     |
| Port Style (see drawing below)           | C                | С               | C               |
| Electrical 125/250VAC<br>Resisitive Load | 3A               | 10A             | 15A             |

#### SAMPLE SWITCH available by request – Call 1-800-643-3884

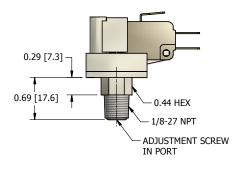
### PORT STYLE A

Ø 0.25 STEPPED AXIAL PORT



### PORT STYLE B

1/8-27 NPT PORT



#### PORT STYLE C

JOHN GUEST (QUICK DISCONNECT)

