## 

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

## Modular \& Custom Design, Vertically Integrated Manufacturing

From Ocean Depths to Outer space--Medical Operating Rooms to Living Rooms
$\xrightarrow{ } \rightarrow-10=-0^{\circ}$


Pressure \& Vacuum Switch

- Field adjustable pressure and vacuum set points from -11.9 to 60psi
- Compact, lightweight, environmentally sealed housing

- Field adjustable switch points from $3.0^{\prime \prime} \mathrm{H} 20$ to 60 psi
- Snap action switch design suitable for high current applications



## PSF102



Pressure, Vacuum \& Differential Pressure Switch

- Field adjustable switch points from $0.03^{\prime \prime} \mathrm{H} 20$ to 25 psi
- Many standard port \& mounting options available

- Field adjustable switch points from - $3.0^{\prime \prime} \mathrm{H} 2 \mathrm{O}$ to -12 psi
- Vacuum ports available to suit most applications


Pressure, Vacuum \& Differential Pressure Switch

- Factory set points from $0.1^{\prime \prime}$ to $2.5^{\prime \prime}$ H2O
- Reliable performance under harsh conditions



## 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

## MECHANICAL



Standard Tolerance
Switch Type
Switching Medium
Mechanical Life
Maximum Operating
Pressure

Operating Temp.
PHYSICAL
Case Material
Porting Options
Diaphragm Material
Contact Points

Electrical Connections

## Mounting

Weight

## ELECTRICAL

## Current Rating

Operating Voltage
$\pm 20 \%$ (Tighter tolerances available)

SPST normally open
Air; compatible fluids on "High" port side
More than 20 million cycles

8 psi : for units where set point is $3.0^{\prime \prime} \mathrm{H}_{2} \mathrm{O}$ or less
15 psi : for units where set point is greater than $3.0^{\prime \prime} \mathrm{H}_{2} \mathrm{O}$
$8 p s i$ : for units with Teflon ${ }^{\circ}$ diaphragm
$+40^{\circ} \mathrm{F}$ to $+150^{\circ} \mathrm{F}$ (standard) $\mid-46^{\circ} \mathrm{F}$ to $+205^{\circ} \mathrm{F}$ (contact us)

Polycarbonate (optional: Lexan 141, Ryton ${ }^{\circledR}$, Ultem ${ }^{\oplus}$, Nory ${ }^{\circledR}$ )
Many standard ports — see Low Port / High Port Options overleaf

Polyurethane / Teflon ${ }^{\circledR}$ (other material options available)
Gold

Terminals - $.187^{\prime \prime x} .020^{\prime \prime}$ tab-type (bifurcated), for use with quick disconnects (ref. AMP 2-520182-2 or equivalent) .020"x.060" (PCB terminals available)
\#4 Screws through mounting lugs; \#2 Screws through eyelets; mounting clip available for specific port arrangement only

Less than 10 grams

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

World Magnetics' exclusive DesignFlex ${ }^{\text {TM }}$ 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. $\mathrm{H}_{2} \mathrm{O}$ | 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 PORT OPTIONS
HIGH PORT OPTIONS


## FEATURES / BENEFITS

- Field adjustable set point ranges - from $0.03^{\prime \prime} \mathrm{H}_{2} \mathrm{O}$ 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

## MECHANICAL



| Standard Tolerance |  |
| :--- | :--- |
| Switch Type |  |
| Switching Medium |  |
| Mechanical Life |  |
| Maximum Operating Pressure |  |
| Operating Temp. |  |

## PHYSICAL

| Case Material |
| :--- |
| Porting Options |
| Diaphragm Material |
| Contact Points |
| Electrical Connections |

## Mounting

## Weight

## ELECTRICAL

## Current Rating

Operating Voltage

Polycarbonate (optional: Lexan 141, Ryton, Ultem ${ }^{\oplus}$, Nory ${ }^{\bullet}$ )
Many standard ports — see Low Port / High Port Options overleaf
Polyurethane / Teflon ${ }^{\circledR}$ (other material options available)
Gold
Terminals $-.187 " x .020$ " spade (recessed) for use with quick
disconnects uninsulated (ref. AMP Faston, \#8-640917-1, 187 Series)
Terminals $-.187^{\prime \prime} \times .020^{\prime \prime}$ spade (recessed) for use with quick
disconnects uninsulated (ref. AMP Faston, \#8-640917-1, 187 Series) (PCB terminals available)
\#4 Screws through mounting lugs; \#2 Screws through eyelets; mounting clip available
Less than 10 grams

Up to 40mA resistive

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

## Varies by option - see Set Point Options overleaf

SPST (single pole / single throw) normally open normally closed option - contact us

Air; compatible fluids on "High" port side
More than 20 million cycles
Varies by option — see Set Point Options overleaf
$+40^{\circ} \mathrm{F}$ to $+150^{\circ} \mathrm{F}$ (standard) $\mid-46^{\circ} \mathrm{F}$ to $+205^{\circ} \mathrm{F}$ (contact us) $+50^{\circ}-86^{\circ}$ ( 700 range)

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

## Desiditis

## DESIGNFLEX STANDARD OPTIONS

World Magnetics' exclusive DesignFlex ${ }^{\text {TM }}$ 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.



## Model <br> Design Guide

For building standard model
order number


RoHS

## 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
Point Tolerance
Switch Type
Switching Medium
Mechanical Life

Maximum Operating

## Pressure

Operating Temp．

## PHYSICAL

| Case Material | Polycarbonate（other materials available） |
| :--- | :--- |
| Porting Options | Two $.200^{\prime \prime}$ diameter barbed ports（low／high）for use with <br> $1 / 8^{\prime \prime}-3 / 16^{\prime \prime}$ ID tubing |
| Diaphragm Material | Polyurethane／Teflon ${ }^{\oplus}$（0ther material options available） |
| Contact Points | Gold |
| Electrical Connections | Terminals $-.187 " x .020^{\prime \prime}$ tab－type，for use with <br> quick disconnects（ref．AMP $2-520182-2$ or equivalent） |

Mounting

## Weight

## ELECTRICAL

Current Rating
Operating Voltage
$\pm 20 \%$（Tighter tolerances available）
SPST normally open
Air，compatible fluids on＂High＂side
More than 20 million cycles
15psi：for units with polyurethane diaphragm
8psi：for units with Teflon® diaphragm
$+40^{\circ} \mathrm{F}$ to $+150^{\circ} \mathrm{F}$（standard） $\mid-46^{\circ} \mathrm{F}$ to $+205^{\circ} \mathrm{F}$（contact us）
quick disconnects（ref．AMP 2－520182－2 or equivalent）
Eyeleted for \＃2 screws；
Less than 10 grams

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

## SET POINT OPTIONS（Choose Any Two）

|  | $\mathbf{4 . 0}$ | $\mathbf{6 . 0}$ | $\mathbf{8 . 0}$ | $\mathbf{1 0 . 0}$ | $\mathbf{1 2 . 0}$ | $\mathbf{1 4 . 0}$ | $\mathbf{1 6 . 0}$ | $\mathbf{1 8 . 0}$ | $\mathbf{2 0 . 0}$ | $\mathbf{2 5 . 0}$ | $\mathbf{3 0 . 0}$ | $\mathbf{3 5 . 0}$ | $\mathbf{4 0 . 0}$ | $\mathbf{4 5 . 0}$ | $\mathbf{5 0 . 0}$ |
| ---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In． $\mathrm{H}_{2} \mathrm{O}$ | 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 |



## FEATURES / BENEFITS

- Field adjustable pressure set point, from $3^{\prime \prime} \mathrm{H}_{2} \mathrm{O}$ to 60 psi
- Snap action basic switch, up to $25 A^{*}, 125 / 250$ 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 |
| :--- |
| Switch Type |
| Switching Medium |
| Mechanical Life |
| Maximum Operating <br> Pressure |
| Operating Temp. |

$\pm 20 \%$ (Tighter tolerances available)
SPDT (single pole / double throw) normally open or normally closed

Air; compatible fluids
More than 10 million cycles

Varies by option - see Adjustable Pressure Set Point Options overleaf
$+40^{\circ} \mathrm{F}$ to $+150^{\circ} \mathrm{F}$ (standard) $\mid-46^{\circ} \mathrm{F}$ to $+205^{\circ} \mathrm{F}$ (contact us)

Polycarbonate (optional: Lexan 141, Ryton ${ }^{\circledR}$, Ultem ${ }^{\circledR}$, Nory ${ }^{\circledR}$ ) 905 - 906 range use PPS wetted parts

Many standard ports - see Pressure Port / Cover Options overleaf
Polyurethane (Teflon ${ }^{\circledR}$ optional with limited pressure ranges) other options available

Silver (Gold available on special order)
Terminals $-.187^{\prime \prime} \mathrm{x} .020$ " tab-type for use with quick
disconnects (ref. AMP \#2-520182-2 or equivalent) .250" available contact us
\#4 Screws through mounting lugs; \#2 Screws through eyelets

Less than 20 grams

> Varies by option - see Adjustable Pressure Set Point Options overleaf

See Adjustable Pressure Set Point Options overleaf

DESIGNFLEX ${ }^{\text {m" }}$ 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

PRESSURE PORT/COVER OPTIONS

| 00 |  | 01 | (0) (0) | 02 |  | 03 |  | 04 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Smooth Port .156" diameter for $1 / 8^{\prime \prime}$ ID tubing $w / m t g$. lugs |  | Smooth Port . 156" diameter for $1 / 8^{\prime \prime}$ ID tubing w/o mtg. lugs |  | Barbed Port for $3 / 16^{\prime \prime}$ ID tubing on terminals side $\mathrm{w} / \mathrm{mtg}$. lugs |  | Barbed Port for 3/16" ID tubing opposite terminals w/mtg. lugs |  | Barbed Port for 3/16" ID tubing on terminals side w/o mtg. lugs |  |
| 05 |  | 06 |  | 07 |  | 08 |  | 09 |  |
| Barbed Port for 3/16" ID tubing opposite terminals w/o mtg. lugs |  | 1/8" NPT Port |  | Flo-Thru Barbed Port <br> for $1 / 8^{\prime \prime}$ ID tubing w/o mtg. lugs |  | Smooth Port .250" diameter for 7/32" ID tubing w/o mtg. lugs |  | Smooth Port .250" diameter for 7/32" ID tubing w/mtg. lugs |  |
| 10 |  | 11 |  | 12 |  | 13 |  | 14 |  |
| Barbed Port for $1 / 8^{\prime \prime}$ ID tubing on terminals side $\mathrm{w} / \mathrm{mtg}$. lugs |  | Barbed Port for $1 / 8^{\prime \prime}$ ID tubing opposite terminals w/mtg. lugs |  | Barbed Port for $1 / 8^{\prime \prime}$ ID tubing on terminals side w/o mtg. lugs |  | Barbed Port for $1 / 8^{\prime \prime}$ ID tubing opposite terminals w/o mtg. lugs |  | 1/4" Port for Quick Connect Fitting |  |
| 15 |  |  |  |  |  | Diaphragm Options <br> 1 Polyurethane (standard) $\qquad$ |  | OTHER / CUSTOM PORTING AND MOUNTING OPTIONS AVAILABLE |  |
|  | M8 $\times 1.25$ Port |  |  |  |  |  |  |  |  |

Model
Design Guide
For building standard model
order number

PSF103 Series Number

Pressure Port/Cover Option Number
Diaphragm Option Number Three Digit Pressure Set Point Option Number


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 $-3^{\prime \prime} \mathrm{H}_{2} \mathrm{O}$ to -12 psi
- Snap action basic switch, up to $25 A^{*}, 125 / 250$ 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
Switch Type
Switching Medium
Mechanical Life
Operating Temp.

## PHYSICAL

| Case Material | P |
| :--- | :--- |
| Vacuum Port Options | .2 |
| Diaphragm Material | P |

## Contact Points

Electrical Connections

## Mounting

Weight

## ELECTRICAL

## Current Rating

Operating Voltage

Polycarbonate (optional: Lexan 141, Ryton, Ultem ${ }^{\oplus}$, Nory ${ }^{\left({ }^{\oplus}\right)}$
. 250 " diameter, $1 / 8^{\prime \prime}$ NPT, Quick Connect Fitting Port
Polyurethane / Teflon ${ }^{\circledR}$ (other material options available)
Silver (Gold available on special order)
Terminals - . $187^{\prime \prime} \mathrm{x} .020^{\prime \prime}$ tab-type for use with quick disconnects (ref. AMP \#2-520182-2 or equivalent) . 250 " available - contact us
\#2 Screws through eyelets
Less than 20 grams

Varies by option - see Adjustable Vacuum Set Point Options overleaf

125/250 VAC- see Adjustable Vacuum Set Point Options (overleaf)

## TRHMFLTA

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. $\mathrm{H}_{2} \mathrm{O}$ | 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 | A | A |
| Electrical 125/250VAC 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. $\mathrm{H}_{2} \mathrm{O}$ | 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) | B | B | B |
| Electrical 125/250VAC Resisitive Load | 3A | 10A | 15A |
|  | 21472 | 21473 | 21474 |
| Description | 109S-0C-3-8 | 109S-0C-9-80 | 109S-0c-81-330 |
| - In. Hg | 0.2205 to 0.5885 | 0.6613 to 5.878 | 5.951 to 24.25 |
| - In. $\mathrm{H}_{2} \mathrm{O}$ | 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 | C | C |
| Electrical 125/250VAC Resisitive Load | 3A | 10A | 15A |

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



The versatile PSF111 pressure and vacuum switch offers a wide range of field adjustable set points, port options and electrical connections. Using a waterproof snap-action microswitch and the new DesignFlex protective housing, this switch is ideal for use in hostile environments where dust and water ingress may be an issue.

## FEATURES / BENEFITS

- Compact, lightweight, environmentally sealed housing
- Field adjustable pressure and vacuum set points from -11.9 to 60psi
- Many standard pressure port and mountings options
- Custom design and engineering available
- Custom electrical lead lengths with option to add electrical connector


## SPECIFICATIONS

MECHANICAL

| Standard Tolerance |  |
| :--- | :--- |
| Switch Type |  |
| Switching Medium |  |
| Mechanical Life |  |
| Maximum Operating <br> Pressure |  |
| Operating Temp. |  |

## PHYSICAL

| Case Material |
| :--- |
| Pressure Port Options |
| Diaphragm Material |

## Contact Points

Electrical Connections

Mounting

## Weight

$\pm 20 \%$ (Tighter tolerances available)
SPDT (single pole / double throw) normally open (std.) | normally closed (opt.)
Air; compatible fluids
More than 1 million cycles
Varies by option - see Adjustable Pressure Set Point Options overleaf
$-40^{\circ} \mathrm{F}$ to $+185^{\circ} \mathrm{F}$

Polycarbonate (optional: Lexan 141, Ryton ${ }^{\oplus}$, Ultem ${ }^{\oplus}$, Nory ${ }^{\oplus}$ ) 112 - 113 range use PPS wetted parts

Many standard ports — see Pressure Port / Cover Options overleaf
Polyurethane (Teflon ${ }^{\circledR}$ optional with limited pressure ranges) other options available

Silver (Gold available on special order)
6" AWG 20 PVC wire (2 or 3 wire)
other length and connector options available
\#4 Screws through mounting lugs; \#2 Screws through eyelets;
Less than 20 grams

## ELECTRICAL

Current Rating
Operating Voltage

3 AMP standard | 4 AMP available
12 VDC / 125 VAC

## Mesiditis

DESIGNFLEX ${ }^{\text {m" }}$ STANDARD OPTIONS - Choose from our standard PSF111 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.


PRESSURE PORT/COVER OPTIONS


Model
Design Guide
For building standard model order number

## PSF111 Series Pressure Port / Cover Option Number Diaphragm <br> Option Number

Three Digit Set Point Option Number


The rugged yet ultra-sensitive Goldtech ${ }^{\text {TM }}$ PS100 and PS160 series pressure switches feature a larger diameter diaphragm and incorporate a conventional snap action switch element.

This design assures reliable performance under harsh and adverse conditions, while remaining low in relative cost.

Sample switch available by request.

## FEATURES / BENEFITS

- Reliable performance under harsh / adverse conditions
- Larger diameter diaphragm / Conventional snap action
- Standard set point ranges from: $0.07{ }^{\prime \prime} \mathrm{H}_{2} \mathrm{O}$ to $5.0^{\prime \prime} \mathrm{H}_{2} \mathrm{O}$
- Multi-barb port connections standard tubing: 0.250 in . and 0.375 in .
- Orifices, bleed holes and various mounting configurations available on all models
- Lightweight, low cost
- Rigorously tested - Exceeds UL-508 / UL-353 Pilot Duty requirements (Tested hundreds of thousands of cycles)
- Silver contact points
- Different sized electric terminations available for same unit


## IHFIIF[GY Goldtech SERIES

## SPECIFICATIONS

## MECHANICAL

Standard Tolerance
Switch Type
Switching Medium
Mechanical Life

Max Operating Pressure
Burst Pressure
Operating Temperature

## PHYSICAL

Case Material

Porting Options
Diaphragm Material
Contact Points
Electrical Connections

Mounting
(see brackets shown below)

Weight

## ELECTRICAL

Current / Voltage Rating

Rated Standards


Varies by set point — contact us
SPDT
Air; compatible fluids
Tested hundreds of thousands of cycles;
Exceeds UL-508 / UL-353 Pilot Duty requirements
PS160-0.5psi / PS100-1.0psi
3.5 psi

PS160-40 ${ }^{\circ} \mathrm{F}$ to $+185^{\circ} \mathrm{F} / \mathrm{PS} 100-13^{\circ} \mathrm{F}$ to +221 F

MOUNTING BRACKET STYLE MUST BE SELECTED (ONLY ONE IS REQUIRED)

(2) PORTS

TERMINALS (3)


Multi-barb 0.250 in. and 0.375 in. tubing ID (PS100) / 0.25 tubing ID. (PS160)
Post-Cured Silicon
Silver
Terminals - 0.250 in. $\times 0.30$ in. tab-type for use
with quick disconnects

PS100 Series: Vertical mount recommended
PS160 Series: Variable position vertical mounting brackets available.
Note: Always mount with diaphragm in vertical position unless otherwise specified

Less than 80 grams average (varies with snap switch / brackets)

5A 125/250 VAC Standard | 3A 125/250 AC | 1/10 HP 125/250 VAC .01A 125/250 VAC
(UL 1054, EN 61058) \| UL/VDE Approved MH29861
Related: UL 353, UL 508, BS EN 1854: 1997

RoHS

