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INFORMATION REQUIRED FOR SWITCH SELECTION

The following is a guide to assist you in switch selection. Please consider the technical information in the order presented below.

- **MAXIMUM SYSTEM PRESSURE**

  Must not exceed the value shown for the required model pressure sensor.

- **SET POINT**

  The set point must be within the limits prescribed on the specification sheet for any given pressure sensor.

- **ELECTRICAL SWITCH SELECTION**

  The electrical voltage and the electrical load (amps) and whether resistive or inductive is critical to the function and life of the system. Please be careful in selection. Consult our sales department if you would like assistance. All electrical switches are single pole double throw (SPDT) but may be used as single pole single throw (SPST). Choice of 1 amp gold contact, 5 amp silver contact or 7 amp silver contact.

- **RESET BAND**

  The pressure difference between the initial electrical switch actuation and the reset point. This difference, sometimes called “deadband” or “hysteresis”, may be a specific pressure value, but must be within the reset band given for the pressure sensor.

- **VIBRATION AND SHOCK**

  If vibration and shock is a concern, please consult with our sales department. Most models offered are capable of handling moderate to heavy mechanical shock and vibratory loads.

- **MATERIAL COMPATIBILITY**

  The customers media (system gas(es) or fluid) and the surrounding environment must be compatible with the materials of the switch model as outlined under data specifications.

- **OPTIONS AND SPECIAL MODIFICATIONS**

  If not outlined in this catalog, please consult with the sales department.

- **SWITCH SELECTION**

  For complete assistance, you can consult our sales department.

ZERO LEAKAGE DEFINITION:

The following “Zero Leakage Definition” is applicable to all standard Wasco products with the following exception: Super Purity Switches and Ultra High Purity Switches (see pages 16-19 for Leakage rates on these models).

WASCO PRESSURE SWITCHES =	Bubble-tight, air is undetectable in a 5 second soap bubble test.
WASCO VACUUM SWITCHES =	1 x 10^{-3}cc/min. air or less at ambient temperature.

WIRE COLOR CODE

VACUUM SWITCHES

OPEN INCREASE VACUUM	BLACK & WHITE
CLOSE INCREASE VACUUM	BLACK & RED
OPEN DECREASE VACUUM	BLACK & RED
CLOSE DECREASE VACUUM	BLACK& WHITE

PRESSURE SWITCHES

OPEN INCREASE PRESSURE	BLACK & RED
CLOSE INCREASE PRESSURE	BLACK & WHITE
OPEN DECREASE PRESSURE	BLACK & WHITE
CLOSE DECREASE PRESSURE	BLACK& RED

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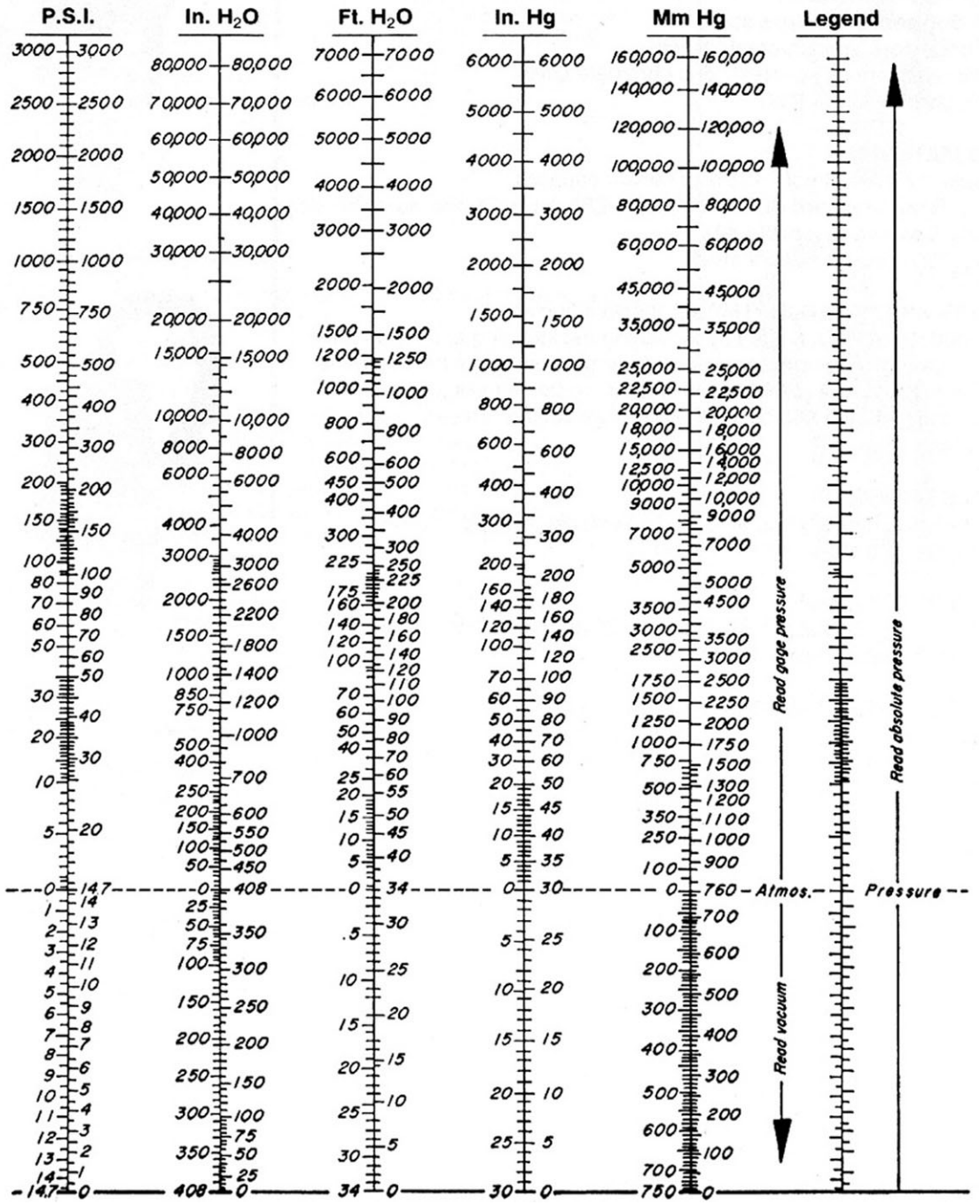
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PRESSURE CONVERSION CHART

Absolute pressure values are on the right of all vertical scales. Vacuum values are on the left side and are read from atmospheric pressure down. Gage pressure values are also on the left, but read from atmospheric pressures up. A straight edge placed on the chart through any known value will cross all other vertical scales at the correct conversion.

1 P.S.I.	=	27.777	Inches H_2O
1 P.S.I.	=	2.31	Feet H_2O
1 P.S.I.	=	2.04	Inches Hg
1 P.S.I.	=	52.63	Mm Hg
1 P.S.I.	=	0.070	Kg/cm^2
1 P.S.I.	=	0.068	BAR
1 ATM	=	760.0	Mm Hg
1 ATM	=	760.0	TORR
1 ATM	=	29.92	Inches Hg
1 ATM	=	14.7	P.S.I.



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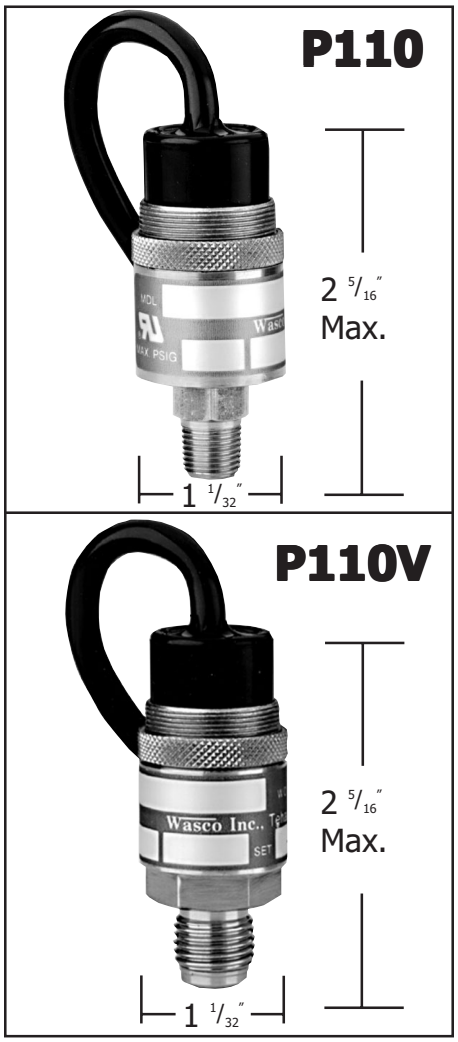
P110 SERIES

PRESSURE SWITCH

1-500 PSI RANGE

Features:

- **Stainless Steel Construction**
- **Capsule Type Sensor**
- **Miniature Size**
- **Excellent Accuracy and Repeatability**
- **Field Adjustable or Factory Set, or Factory Set and Locked**



This series is a rugged and reliable low to medium miniature pressure switch with excellent sensitivity, repeatability and set-point tolerance.

Specifications:

NON-WETTED MATERIALS

Body–300 series stainless steel.
Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish.
Plastic parts-nylon or PVC.

WETTED MATERIALS

Capsule–17-7PH, proof - 125% of sensor capacity.
Seal-O-Ring–Standard BUNA N (optional–EPR, Viton, Silicone, Neoprene, etc.)
Locking Compound–Loctite #277.
Fitting–300 series stainless steel.

PRESSURE SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to lower set point, counter clockwise to raise the set point. Holding the electric switch housing in position, tighten the lock ring and check the pressure setting. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 3.5 ounces (Standard 'W3' interface).

PRESSURE CONNECTION

1/8-NPT male standard.

P110 Series Performance Table. All values given in PSI (gauge).

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
30	1.0-30	± 0.7	0.7-2.3	P110-31W3	P110-35W3	P110-37W3
125	3-125	± 2.0	1.3-3.8	P110-51W3	P110-55W3	P110-57W3
250	8-250	± 5.0	2.0-10.0	P110-81W3	P110-85W3	P110-87W3
500	18-500	± 10.0	5.0-21.0	P110-151W3	P110-155W3	P110-157W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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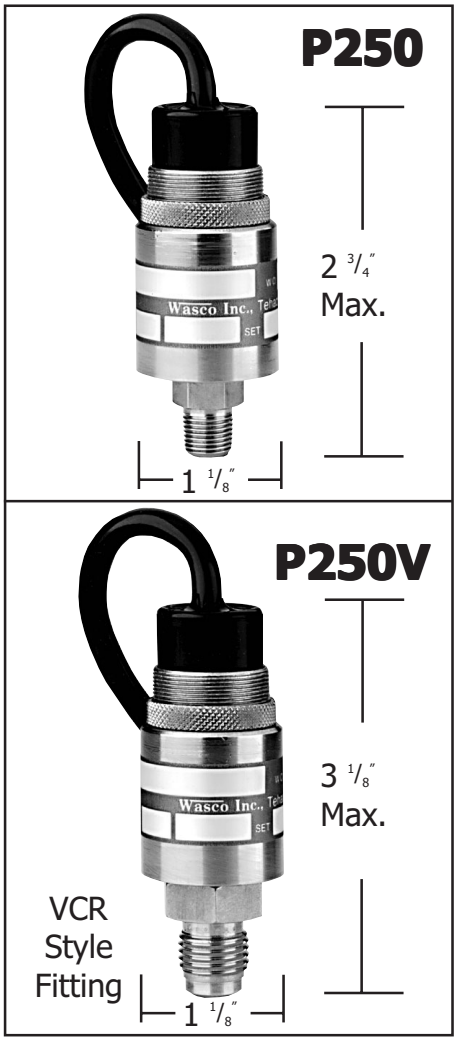
P250 SERIES

PRESSURE SWITCH

With Overpressure Protection to 4000 PSI
1-100 PSI RANGE

Features:

- **Stainless Steel Construction**
- **Sensitive Limp Diaphragm**
- **Miniature Size**
- **Excellent Accuracy and Repeatability**
- **Field Adjustable or Factory Set, or Factory Set and Locked**
- **5000 PSI Proof**



Specifications:

NON-WETTED MATERIALS

Body–300 series stainless steel.
Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish.
Actuator–steel.
Springs–steel.
Plastic parts-nylon or PVC.
Adjusting nut–steel.

WETTED MATERIALS

Fitting–300 series stainless steel.
Adaptor–300 series stainless steel.
Seal-O-Ring–Standard BUNA N (optional - EPR, Viton, Silicon, Neoprene, etc.)
Diaphragm–Kapton.
Locking Compound–Loctite #277.
Washer–300 series stainless steel.
Screw–300 series stainless steel.

PRESSURE SWITCH ADJUSTMENT (if field adjustable)

A change in the set point may be made by turning the adjusting ring located in the opening in the side of the body. Causing the ring to turn counter clockwise will lower the set point, and turning clockwise will raise the set point. For the best results after resetting the switch, cycle the system pressure level several times to stabilize the new set point. Repeat above procedure if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 5 ounces (Standard 'W3' interface).

PRESSURE CONNECTION

1/8-NPT male standard.

A sturdy miniature pressure switch for high system pressure applications. This model allows sensitive, accurate, set points at low pressure, while having the ability to withstand high pressure surges and spikes to 4000 PSI. The ideal switch for hydraulic or fluid systems where spikes are a common occurrence.

P250 Series Performance Table. All values given in PSI (gauge).

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
4000	1-10	± 0.2	0.5-1.5	P250-11W3	P250-15W3	P250-17W3
4000	10-20	± 0.4	1.0-4.0	P250-21W3	P250-25W3	P250-27W3
4000	20-35	± 0.7	2.0-5.0	P250-31W3	P250-35W3	P250-37W3
4000	35-60	± 1.2	4.5-8.0	P250-41W3	P250-45W3	P250-47W3
4000	60-100	± 2.0	7.0-15.0	P250-51W3	P250-55W3	P250-57W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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P500 SERIES

ECONOMY PRESSURE SWITCH

Light to Moderate Service
2-500 PSI RANGE

Features:

- **All Steel Unibody Construction**
- **Stainless Steel Capsule Type Sensor**
- **Miniature Size**
- **Excellent Accuracy and Repeatability**
- **Field Adjustable or Factory Set, or Factory Set and Locked**



An inexpensive and reliable low to medium miniature pressure switch with good sensitivity, repeatability and set-point tolerance.

Specifications:

NON-WETTED MATERIALS

Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish.
Plastic parts-nylon or PVC.

WETTED MATERIALS

Body/Fitting–steel zinc chromate finish.
Capsule–17-7PH, proof = 125% of sensor capacity.
Seal-O-Ring–Standard BUNA N (optional - EPR, Viton, Silicone, Neoprene, etc.)
Locking Compound–Loctite #277.

PRESSURE SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to lower set point, counter clockwise to raise the set point. Holding the electric switch housing in position, tighten the lock ring and check the pressure setting. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 2.5 ounces (Standard 'W3' interface).

PRESSURE CONNECTION

1/8-NPT male standard.

P500 Series Performance Table. All values given in PSI (gauge).

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
30	2-30	± 1.0	1.0-2.0	P500-31W3	P500-35W3	P500-37W3
125	5-125	± 3.0	2.0-3.0	P500-51W3	P500-55W3	P500-57W3
250	10-250	± 7.0	3.0-8.0	P500-81W3	P500-85W3	P500-87W3
500	22-500	± 12.0	8.0-18.0	P500-151W3	P500-155W3	P500-157W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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P550 SERIES

LOW PRESSURE SWITCH

0.5-15 PSI RANGE

Features:

- **Black Anodized Aluminum Unibody**
- **Diaphragm Type Sensor**
- **Miniature Size**
- **Excellent Accuracy and Repeatability**
- **Factory Set and Locked Only**



A reliable low pressure switch with good sensitivity, repeatability and set point tolerance.

Specifications:

NON-WETTED MATERIALS

Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish.
Plastic parts-nylon.

WETTED MATERIALS

Body/Fitting 6061-T6 aluminum anodized.
Diaphragm: 300 series stainless steel.
Seal-O-Ring–Standard BUNA N
O-Ring Retainer: 300 series stainless steel.

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 2.5 ounces (Standard 'W3' interface).

PRESSURE CONNECTION

1/8-NPT male standard.

PRESSURE SWITCH ADJUSTMENT

Factory set and locked–ONLY.

P550 Series Performance Table. All values given in PSI (gauge).

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
75	.5-15	±.5	.4-1.8	P550-31W3	P550-35W3	P550-37W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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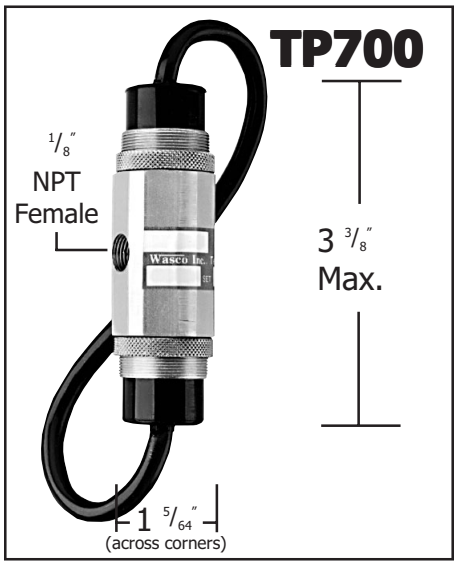
TP700 SERIES

DUAL PRESSURE SWITCH

1-500 PSI RANGE

Features:

- **Steel Construction**
- **Stainless Steel Capsule Type Sensor**
- **Miniature Size**
- **Excellent Accuracy and Repeatability**
- **Factory Set or Factory Set, or Factory Set and Locked**



This series is a rugged and reliable low to medium miniature dual pressure switch with excellent sensitivity, repeatability and set-point tolerance. Utilizing one pressure port, the two (2) electrical switches may be set without regard to one another, as long as they are set within the set point range of the sensors (listed below). This offers the possibility to set for redundancy or any pressure difference within the range.

Specifications:

NON-WETTED MATERIALS

Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish.
Plastic parts-nylon or PVC.

WETTED MATERIALS

Capsule–17-7PH, proof = 125% of sensor capacity.
Seal-O-Ring–Standard BUNA N (optional - EPR, Viton, Silicone, Neoprene, etc.)
Locking Compound–Loctite #277.
Body–steel, zinc chromate finish.

PRESSURE SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to lower set point, counter clockwise to raise the set point. Holding the electric switch housing in position, tighten the lock ring and check the pressure setting. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 8 ounces (Standard 'W3' interface).

PRESSURE CONNECTION

1/8-NPT female standard.

TP700 Series Performance Table. All values given in PSI (gauge).

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
30	1.0-30	± 0.7	0.7-2.3	TP700-31W3	TP700-35W3	TP700-37W3
125	3-125	± 2.0	1.3-3.8	TP700-51W3	TP700-55W3	TP700-57W3
250	8-250	± 5.0	2.0-10.0	TP700-81W3	TP700-85W3	TP700-87W3
500	18-500	± 10.0	5.0-21.0	TP700-151W3	TP700-155W3	TP700-157W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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P325 SERIES

HIGH PRESSURE SWITCH

With Overpressure Protection
500-6000 PSI RANGE

Features:

- **Stainless Steel Construction**
- **Piston with O-Ring Style Sensor**
- **Miniature Size**
- **Excellent Accuracy and Repeatability**
- **Field Adjustable or Factory Set, or Factory Set and Locked**
- **9000 PSI Proof**



Specifications:

NON-WETTED MATERIALS

Body–steel, nickel plated.
Locking Compound-Loctite #277.
Electric switch housing–steel, zinc chromate finish
Actuator–steel.
Springs–steel.
Plastic parts-nylon or PVC.
Lock ring–steel, zinc chromate finish

WETTED MATERIALS

Fitting–300 series stainless steel.
Piston-17-4 stainless steel.
Seal-O-Ring–Standard BUNA N (optional - EPR, Viton, Silicon, Neoprene, etc.)

PRESSURE SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to lower set point, counter clockwise to raise the set point. Holding the electric switch housing in position, tighten the lock ring and check the pressure setting. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 4.5 ounces (standard 'W3' interface)

PRESSURE CONNECTION

1/8-NPT male standard.

This is a very sturdy switch, designed to take vibration and shock from the heaviest equipment. In addition, it also features a cushioned spike reducer to maintain perfect set point and switch function to pressures of 6000 PSI.

Note: When switch is to be factory set, the type of system media must accompany the purchase order.

Note: for the set point tolerance and reset band of set points other than the nominals shown. Interpolation is required.

P325 Series Performance Table. All values given in PSI (gauge).

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
3000 PSI	400-3000	± 4%	40-150	P325-11W3	P325-15W3	P325-17W3
6000 PSI	900-6000	± 4%	50-350	P325-21W3	P325-25W3	P325-27W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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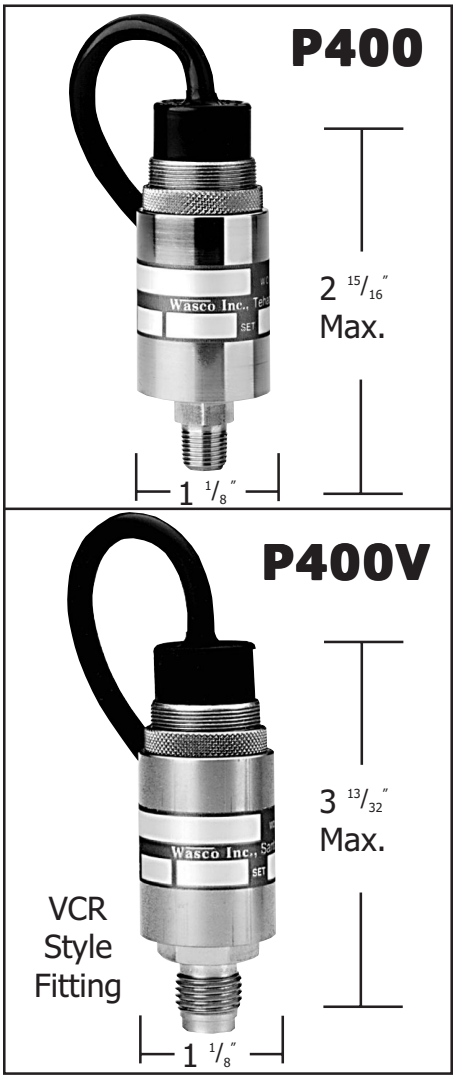
P400 SERIES

HIGH PRESSURE SWITCH

With Overpressure Protection
100-6000 PSI RANGE

Features:

- **Stainless Steel Construction**
- **Sensitive Diaphragm Sealed Piston Sensor**
- **Miniature Size**
- **Excellent Accuracy and Repeatability**
- **Field Adjustable or Factory Set, or Factory Set and Locked**
- **9000 PSI Proof**



A sturdy miniature pressure switch for high system pressure applications. This model allows sensitive, accurate, set points over a wide pressure range, while having the ability to withstand high pressure surges and spikes to 6000 PSI.

Specifications:

NON-WETTED MATERIALS

Body–300 series stainless steel.
Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish
Actuator–steel.
Springs–steel
Plastic parts-nylon or PVC.

WETTED MATERIALS

Fitting–300 series stainless steel.
Adaptor–300 series stainless steel.
Seal-O-Ring–Standard BUNA N (optional - EPR, Viton, Silicon, Neoprene, etc.)
Diaphragm–Kapton.
Locking Compound–Loctite #277.

PRESSURE SWITCH ADJUSTMENT (if field adjustable)

A change in the set point may be made by turning the adjusting ring located in the opening in the side of the body. Causing the ring to turn counter clockwise will lower the set point, and turning clockwise will raise the set point. For the best results after resetting the switch, cycle the system pressure level several times to stabilize the new set point. Repeat the above adjustment procedure if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 6.5 ounces (standard 'W3' interface).

PRESSURE CONNECTION

1/8-NPT male standard.

Note: for the set point tolerance and reset band of set points other than the nominals shown, interpolation is required.

P400 Series Performance Table. All values given in PSI (gauge).

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
6000 PSI	100-500	± 3%	15-60	P400-11W3	P400-15W3	P400-17W3
6000 PSI	400-2500	± 3%	20-200	P400-21W3	P400-25W3	P400-27W3
6000 PSI	1500-6000	± 3%	100-600	P400-31W3	P400-35W3	P400-37W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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V110 SERIES

VACUUM SWITCH

1.6 - 29.5 in Hg RANGE

Features:

- **Stainless Steel Construction**
- **Capsule Type Sensor**
- **Miniature Size**
- **Excellent Accuracy and Repeatability**
- **Field Adjustable or Factory Set, or Factory Set and Locked**





This is a rugged and reliable full range miniature vacuum switch with excellent sensitivity, repeatability and set-point tolerance.

Specifications:

NON-WETTED MATERIALS

Body–300 series stainless steel.
Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish.
Plastic parts-nylon or PVC.

WETTED MATERIALS

Capsule–17-7PH, proof - 125% of sensor capacity.
Seal-O-Ring–Standard BUNA N (optional–EPR, Viton, Silicone, Neoprene, etc.)
Locking Compound–Loctite #277.
Fitting–300 series stainless steel.

VACUUM SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to raise the set point, counter clockwise to lower the set point. Holding the electric switch housing in position, tighten the lock ring and check the set point. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 3.5 ounces (Standard 'W3' interface).

PRESSURE CONNECTION

1/8-NPT male standard.

NOTE: Vacuum switches may be damaged if exposed to positive pressure.

V110 Series Performance Table. All values given in inches Hg. vacuum.

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
29.9	1.6-29.5	±1.2	1.4-4.6	V110-31W3	V110-35W3	V110-37W3
29.9	6.0-29.5	±4.0	2.6-7.6	V110-51W3	V110-55W3	V110-57W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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V250 SERIES

VACUUM SWITCH

With Overpressure Protection to 3000 PSI
0.5-29.5 in Hg RANGE

Features:

- **Stainless Steel Construction**
- **Sensitive Limp Diaphragm sensor**
- **Miniature Size**
- **Excellent Accuracy and Repeatability**
- **Field Adjustable or Factory Set, or Factory Set and Locked**
- **4000 PSI Proof**



A sturdy miniature vacuum switch for high pressure applications. This model allows sensitive, accurate set points in vacuum, while having the ability to withstand high pressure surges and spikes to 3000 PSI.

Specifications:

NON-WETTED MATERIALS

Body–300 series stainless steel.
Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish.
Actuator–steel.
Springs–steel.
Plastic parts-nylon or PVC.
Adjusting nut–steel.

WETTED MATERIALS

Fitting–300 series stainless steel.
Adaptor–300 series stainless steel.
Seal-O-Ring–Standard BUNA N (optional - EPR, Viton, Silicon, Neoprene, etc.)
Diaphragm–Kapton.
Locking Compound–Loctite #277.
Washer–300 series stainless steel.
Screw–300 series stainless steel.

VACUUM SWITCH ADJUSTMENT (if field adjustable)

A change in the set point may be made by turning the adjusting ring located in the opening in the side of the body. Causing the ring to turn counter clockwise will raise the set point, and turning clockwise will lower the set point. For the best results after resetting the switch, cycle the system vacuum level several times to stabilize the new set point. Repeat the above adjustment procedure if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 5 ounces (Standard 'W3' interface).

PRESSURE CONNECTION

1/8-NPT male standard.

V250 Series Performance Table. All values given in inches Hg. vacuum.

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
3000 PSI	0.5-2.0	±0.3	1.0-3.5	V250-01W3	V250-05W3	V250-07W3
3000 PSI	2.0-5.0	±0.3	1.0-3.5	V250-11W3	V250-15W3	V250-17W3
3000 PSI	2.5-12.0	±0.4	1.5-6.0	V250-21W3	V250-25W3	V250-27W3
3000 PSI	10.0-29.5	±0.4	3.0-8.0	V250-31W3	V250-35W3	V250-37W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

Switch part numbers V250-01W3, V250-05W3 and V250-07W3; set point range 0.5 to 2.0 is decreasing vacuum only.

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V500 SERIES

VACUUM SWITCH

Light to Moderate Service
2.0 - 29.5 in Hg RANGE



An inexpensive and reliable full range miniature vacuum switch with good sensitivity, repeatability and set-point tolerance.

Features:

- **All Steel Unibody Construction**
- **Stainless Steel Capsule Type Sensor**
- **Miniature Size**
- **Excellent Accuracy and Repeatability**
- **Field Adjustable or Factory Set, or Factory Set and Locked**

Specifications:

NON-WETTED MATERIALS

Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish.
Plastic parts-nylon or PVC.

WETTED MATERIALS

Body/Fitting- steel, zinc chromate finish.
Capsule–17-7PH, proof - 125% of sensor capacity.
Seal-O-Ring–Standard BUNA N (optional–EPR, Viton, Silicone, Neoprene, etc.)
Locking Compound–Loctite #277.

VACUUM SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to raise the set point, counter clockwise to lower the set point. Holding the electric switch housing in position, tighten the lock ring and check the set point. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 2.5 ounces (Standard 'W3' interface).

PRESSURE CONNECTION

1/8-NPT male standard.

NOTE: Vacuum switches may be damaged if exposed to positive pressure.

V500 Series Performance Table. All values given in inches Hg. vacuum.

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
29.9	2.0-29.5	±1.5	2.0-4.0	V500-31W3	V500-35W3	V500-37W3
29.9	10-29.5	±5.0	3.0-7.0	V500-51W3	V500-55W3	V500-57W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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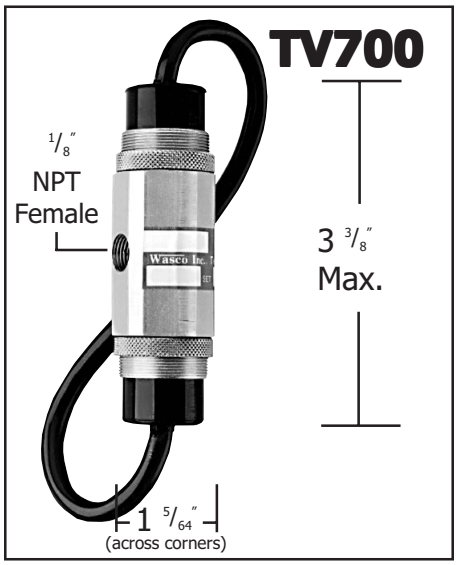
TV700 SERIES

DUAL VACUUM SWITCH

1.6-29.5 in Hg RANGE

Features:

- **Steel Construction**
- **Stainless Steel Capsule Type Sensor**
- **Miniature Size**
- **Excellent Accuracy and Repeatability**
- **Factory Set or Factory Set, or Factory Set and Locked**



This series is a rugged and reliable full range miniature dual vacuum switch with excellent sensitivity, repeatability and set-point tolerance. Utilizing one pressure port, the two (2) electrical switches may be set without regard to one another, as long as they are set within the set point range of the sensors (listed below). This offers the possibility to set for redundancy or any pressure difference within the range.

Specifications:

NON-WETTED MATERIALS

Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish.
Plastic parts-nylon or PVC.

WETTED MATERIALS

Capsule–17-7PH, proof = 125% of sensor capacity.
Seal-O-Ring–Standard BUNA N (optional - EPR, Viton, Silicone, Neoprene, etc.)
Locking Compound–Loctite #277.
Body–steel, zinc chromate finish.

VACUUM SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to raise the set point, counter clockwise to lower the set point. Holding the electric switch housing in position, tighten the lock ring and check the set point. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 8 ounces (Standard 'W3' interface).

PRESSURE CONNECTION

1/8-NPT female ONLY.

NOTE: Vacuum switches may be damaged if exposed to positive pressure.

TV700 Series Performance Table. All values given in inches Hg. vacuum.

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
29.9	2.0-29.5	±1.5	2.0-4.0	TV700-31W3	TV700-35W3	TV700-37W3
29.9	10-29.5	±5.0	3.0-7.0	TV700-51W3	TV700-55W3	TV700-57W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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SP120 SERIES

SUPER PURITY PRESSURE SWITCH 1-500 PSI RANGE

Features:

- **All Stainless Steel (wetted) Sensor**
- **All Welded Construction**
- **Leak tested and Certified to 1X10^{-9} cc per sec. Helium**
- **Finely Finished (wetted) Surfaces to Reduce Particulates**



A rugged and reliable miniature switch featuring an all welded high purity sensor system.

Specifications:

NON-WETTED MATERIALS

Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish.
Plastic parts–nylon or PVC.

WETTED MATERIALS

Body–316 series stainless steel.
Capsule—17-7PH, proof = 125% of sensor capacity.
Fitting—316 series stainless steel.

PRESSURE SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to lower set point, counter clockwise to raise the set point. Holding the electric switch housing in position, tighten the lock ring and check the pressure setting. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 3.5 ounces (Standard 'W3' interface).

PRESSURE CONNECTION

9/16-18 UNF-VCR Style (1/4" Faceseal) male standard.

SP124 = 1/4" NPT MALE
SP127 = 7/16"-20 UNF MALE
SP128 = 1/8" NPT MALE
SP129 = 9/16"-18 UNF MALE

SP120 Series Performance Table. All values given in PSI (gauge).

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
30	1.0-30	± 0.7	0.7-2.3	SP129-31W3	SP129-35W3	SP129-37W3
125	3-125	± 2.0	1.3-3.8	SP129-51W3	SP129-55W3	SP129-57W3
250	8-250	± 5.0	2.0-10.0	SP129-81W3	SP129-85W3	SP129-87W3
500	18-500	± 10.0	5.0-21.0	SP129-151W3	SP129-155W3	SP129-157W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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SV120 SERIES

SUPER PURITY VACUUM SWITCH 1.6 - 29.5 in Hg RANGE

Features:

- **All Stainless Steel (wetted) Sensor**
- **All Welded Construction**
- **Leak tested and Certified to 1X10^{-9} cc per sec. Helium**
- **Finely Finished (wetted) Surfaces to Reduce Particulates**



A rugged and reliable miniature switch featuring an all welded high purity sensor system.

Specifications:

NON-WETTED MATERIALS

Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish.
Plastic parts-nylon or PVC.

WETTED MATERIALS

Body–316 series stainless steel.
Capsule—17-7PH, proof = 125% of sensor capacity.
Fitting—316 series stainless steel.

VACUUM SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to raise the set point, counter clockwise to lower the set point. Holding the electric switch housing in position, tighten the lock ring and check the set point. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 3.5 ounces (Standard 'W3' interface).

PRESSURE CONNECTION

9/16-18 UNF-VCR Style (1/4" Faceseal) male standard.

NOTE: Vacuum switches may be damaged if exposed to positive pressure.

SV124 = 1/4" NPT MALE
SV127 = 7/16"-20 UNF MALE
SV128 = 1/8" NPT MALE
SV129 = 9/16"-18 UNF MALE

HIGH PURITY SWITCHES

SV120 Series Performance Table. All values given in inches Hg. vacuum.

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
29.9	1.6-29.5	± 1.2	1.4-4.6	SV129-31W3	SV129-35W3	SV129-37W3
29.9	6.0-29.5	± 4.0	2.6-7.6	SV129-51W3	SV129-55W3	SV129-57W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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UHP150
SERIES

ULTRA HIGH PURITY PRESSURE SWITCH
1-500 PSI RANGE

Features:

- **All Stainless Steel (wetted) Sensor**
- **All Welded Construction**
- **Leak tested and Certified to 1X10^{-9} cc per sec. Helium**
- **Wetted Surfaces Electropolished to Reduce Particulates**
- **10 Ra (or better) finish wetted surfaces**
- **Manufactured in a Class 100 cleanroom**



A reliable miniature switch featuring an all stainless steel, welded ultra high purity sensor system.

Specifications:

NON-WETTED MATERIALS

Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish.
Plastic parts-nylon or PVC.

WETTED MATERIALS

Body–316 VIM/VAR series stainless steel.
Capsule—17-7PH, proof = 125% of sensor capacity.
Fitting—316 VIM/VAR series stainless steel.

PRESSURE SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to lower set point, counter clockwise to raise the set point. Holding the electric switch housing in position, tighten the lock ring and check the pressure setting. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

UHP154 = 1/4" NPT MALE
UHP157 = 7/16"-20 UNF MALE
UHP158 = 1/8" NPT MALE
UHP159 = 9/16"-18 UNF MALE

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 3.5 ounces (Standard 'W3' interface).

PRESSURE CONNECTION

9/16-18 UNF-VCR Style (1/4" Faceseal) male standard.

UHP150 Series Performance Table. All values given in PSI (gauge).

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
30	1.0-30	± 0.7	0.7-2.3	UHP159-31W3	UHP159-35W3	UHP159-37W3
125	3-125	± 2.0	1.3-3.8	UHP159-51W3	UHP159-55W3	UHP159-57W3
250	8-250	± 5.0	2.0-10.0	UHP159-81W3	UHP159-85W3	UHP159-87W3
500	18-500	± 10.0	5.0-21.0	UHP159-151W3	UHP159-155W3	UHP159-157W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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UHP160
SERIES

ULTRA HIGH PURITY VACUUM SWITCH
1.6 - 29.5 in Hg RANGE

Features:

- **All Stainless Steel (wetted) Sensor**
- **All Welded Construction**
- **Leak tested and Certified to 1X10^{-9} cc per sec. Helium**
- **Wetted Surfaces Electropolished to Reduce Particulates**
- **10 Ra (or better) finish wetted surfaces**
- **Manufactured in a Class 100 cleanroom**



A reliable miniature switch featuring an all stainless steel, welded ultra high purity sensor system.

Specifications:

NON-WETTED MATERIALS

Lock ring–steel, zinc chromate finish.
Electric switch housing–steel, zinc chromate finish.
Plastic parts-nylon or PVC.

WETTED MATERIALS

Body–316 VIM/VAR series stainless steel.
Capsule—17-7PH, proof = 125% of sensor capacity.
Fitting—316 VIM/VAR series stainless steel.

VACUUM SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to raise the set point, counter clockwise to lower the set point. Holding the electric switch housing in position, tighten the lock ring and check the set point. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

UHP164 = 1/4" NPT MALE
UHP167 = 7/16"-20 UNF MALE
UHP168 = 1/8" NPT MALE
UHP169 = 9/16"-18 UNF MALE

TEMPERATURE RANGE

-65º F to +225º F, a slight change up to 2% in the set point may occur below -10º F and above +125º F.

CYCLE RATE-SENSOR AND ELECTRICAL SWITCH

Not to exceed 22 CPM (cycles per minute).

WEIGHT

Approx. 3.5 ounces (Standard 'W3' interface).

PRESSURE CONNECTION

9/16-18 UNF-VCR Style (1/4" Faceseal) male standard.

NOTE: Vacuum switches may be damaged if exposed to positive pressure.

UHP160 Series Performance Table. All values given in inches Hg. vacuum.

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER 'W3' INTERFACE* 1 AMP	5 AMP	7 AMP
29.9	1.6-29.5	±1.2	1.4-4.6	UHP160-31W3	UHP160-35W3	UHP160-37W3
29.9	6.0-29.5	±4.0	2.6-7.6	UHP160-51W3	UHP160-55W3	UHP160-57W3

* See page 29 for Standard & Optional Electrical Interfaces and electrical switch characteristics.

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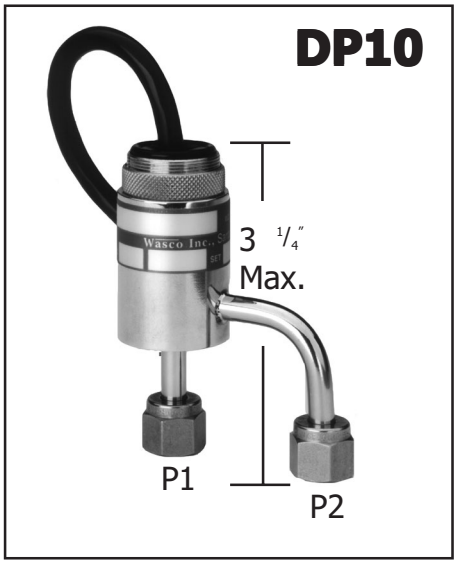
DIFFERENTIAL PRESSURE SWITCH

1-500 PSID RANGE

DPq10 SERIES

Features:

- **Brass Construction**
- **Capsule Type Sensor**
- **Miniature Size**
- **Solid State Electronics (See page 25 for technical data)**
- **Field Adjustable or Factory Set, or Factory Set and Locked**



This series is a sensitive and reliable low to medium miniature differential pressure switch with excellent sensitivity, repeat-ability and set-point tolerance.

Specifications:

NON-WETTED MATERIALS

Lock ring–steel, zinc chromate finish.
Electric switch housing–brass.
Plastic parts-nylon or PVC.

WETTED MATERIALS

Spring- Stainless Steel.
Magnet- Neodymium, nickel plated.
Capsule-17-7PH, proof - 125% of sensor capacity.
Seal-O-Ring–Standard BUNA N (optional - EPR, Viton, Silicone, Neoprene, etc.)
Locking Compound–Loctite #277.
Fitting–brass.
Body–brass.

DIFFERENTIAL PRESSURE SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to lower set point, counter clockwise to raise the set point. Holding the electric switch housing in position, tighten the lock ring and check the pressure setting. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

0º F to +160º F, a slight change up to 2% in the set point may occur below +40º F and above +125º F.

WEIGHT

Approx. 7.8 ounces

PRESSURE CONNECTION

1/4" tube with Swagelok fittings (standard)
See Page 27 for optional fittings.

DP10 Series Performance Table. All values given in PSI (differential).

MAX. SYSTEM PRESSURE	MAX. SYSTEM PRESSURE DIFFERENTIAL	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER WITH STANDARD 1/4" SWAGELOK FITTINGS
500	30 PSID	1.0-30 PSID	± 0.7 PSID	0.7-2.3	DP10-03BBXXXRA
500	70 PSID	2-70 PSID	± 1.4 PSID	1.0-3.1	DP10-04BBXXXRA
500	125 PSID	3-125 PSID	± 2.0 PSID	1.3-3.8	DP10-05BBXXXRA
500	250 PSID	8-250 PSID	± 5.0 PSID	2.0-10.0	DP10-08BBXXXRA
500	500 PSID	18-500 PSID	± 10.0 PSID	5.0-21.0	DP10-15BBXXXRA

* See page 25 for Technical Data on this Hall Effect Solid State Electronic Switch.

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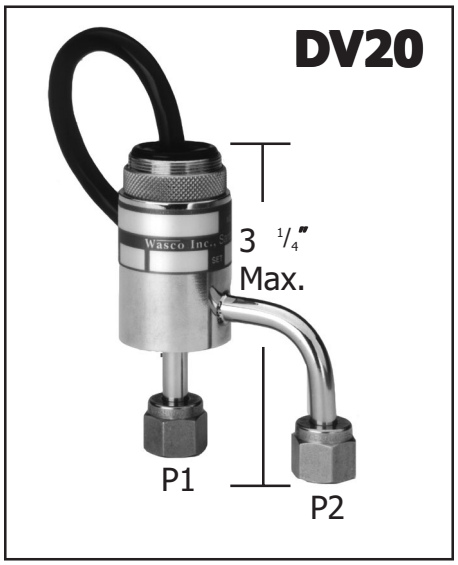
DV20 SERIES

DIFFERENTIAL VACUUM SWITCH

2-29.5 inches Hg DIFFERENTIAL RANGE

Features:

- **Brass Construction**
- **Capsule Type Sensor**
- **Miniature Size**
- **Solid State Electronics (See page 25 for technical data)**
- **Field Adjustable or Factory Set, or Factory Set and Locked**



This series is a sensitive and reliable full range miniature differential vacuum switch with excellent sensitivity, repeat-ability and set-point tolerance.

Specifications:

NON-WETTED MATERIALS

Lock ring–steel, zinc chromate finish.
Electric switch housing–brass.
Plastic parts-nylon or PVC.

WETTED MATERIALS

Spring- Stainless Steel.
Magnet- Neodymium, nickel plated.
Capsule–17-7PH, proof - 125% of sensor capacity.
Seal-O-Ring–Standard BUNA N (optional–EPR, Viton, Silicone, Neoprene, etc.)
Locking Compound–Loctite #277.
Fitting–brass.
Body–brass.

DIFFERENTIAL VACUUM SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to raise the set point, counter clockwise to lower the set point. Holding the electric switch housing in position, tighten the lock ring and check the set point. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

0º F to +160º F, a slight change up to 2% in the set point may occur below +40º F and above +125º F.

WEIGHT

Approx. 7.8 ounces

PRESSURE CONNECTION

1/4" tube with Swagelok fittings (standard)
See Page 27 for optional fittings.

DV20 Series Performance Table. All values given in Inches of Hg. vacuum.

MAX. SYSTEM PRESSURE	MAX. SYSTEM PRESSURE DIFFERENTIAL	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER WITH STANDARD 1/4" SWAGELOK FITTINGS
100 PSIG	30" Hg	2.0-29.5	± 1.0	1.0 - 4.0	DV20-03BBXXXRA

* See page 25 for Technical Data on this Hall Effect Solid State Electronic Switch.

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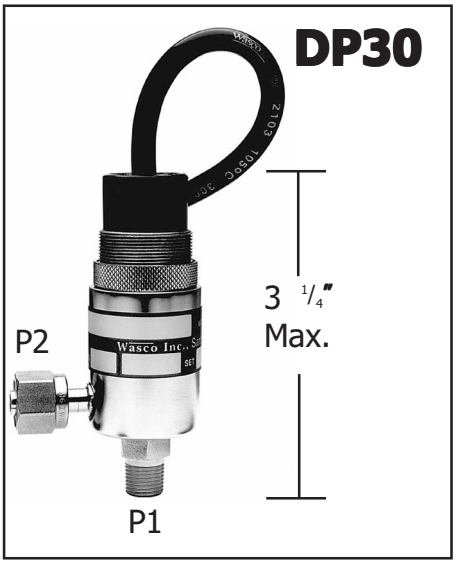
DP30 SERIES

DIFFERENTIAL PRESSURE SWITCH

1-500 PSID RANGE

Features:

- **Stainless Steel Construction**
- **Capsule Type Sensor**
- **Miniature Size**
- **Solid State Electronics (See page 25 for technical data)**
- **Field Adjustable or Factory Set, or Factory Set and Locked**



This series is a sensitive and reliable low to medium miniature differential pressure switch with excellent sensitivity, repeat-ability and set-point tolerance.

Specifications:

NON-WETTED MATERIALS

Lock ring–steel, zinc chromate finish.
Electric switch housing–brass.
Plastic parts-nylon or PVC.

WETTED MATERIALS

Spring- Stainless Steel.
Magnet- Neodymium, nickel plated.
Capsule-17-7PH, proof - 125% of sensor capacity.
Seal-O-Ring–Standard BUNA N (optional - EPR, Viton, Silicone, Neoprene, etc.)
Locking Compound–Loctite #277.
Fitting–stainless steel.
Body–stainless steel.

DIFFERENTIAL PRESSURE SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to lower set point, counter clockwise to raise the set point. Holding the electric switch housing in position, tighten the lock ring and check the pressure setting. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

0º F to +160º F, a slight change up to 2% in the set point may occur below +40º F and above +125º F.

WEIGHT

Approx. 7.8 ounces

PRESSURE CONNECTION

1/4" tube with Swagelok fittings (standard)
See Page 27 for optional fittings.

DP30 Series Performance Table. All values given in PSI (differential).

MAX. SYSTEM PRESSURE	MAX. SYSTEM PRESSURE DIFFERENTIAL	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER WITH STANDARD 1/4" SWAGELOK FITTINGS
500	30 PSID	1.0-30 PSID	± 0.7 PSID	0.7-2.3	DP30-03BBXXXRA
500	70 PSID	2-70 PSID	± 1.4 PSID	1.0-3.1	DP30-04BBXXXRA
500	125 PSID	3-125 PSID	± 2.0 PSID	1.3-3.8	DP30-05BBXXXRA
500	250 PSID	8-250 PSID	± 5.0 PSID	2.0-10.0	DP30-08BBXXXRA
500	500 PSID	18-500 PSID	± 10.0 PSID	5.0-21.0	DP30-15BBXXXRA

* See page 25 for Technical Data on this Hall Effect Solid State Electronic Switch.

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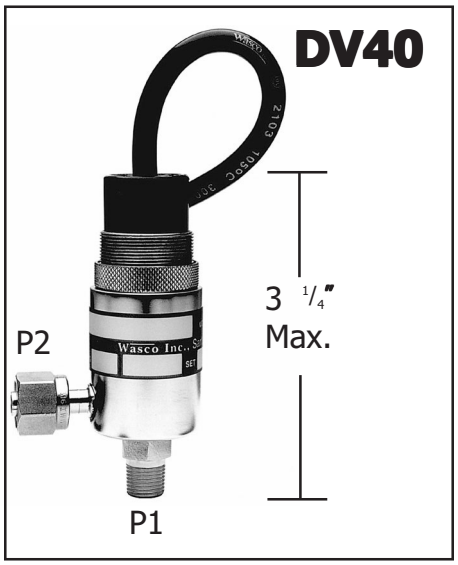
DV40 SERIES

DIFFERENTIAL VACUUM SWITCH

2-29.5 inches Hg DIFFERENTIAL RANGE

Features:

- **Stainless Steel Construction**
- **Capsule Type Sensor**
- **Miniature Size**
- **Solid State Electronics (See page 25 for technical data)**
- **Field Adjustable or Factory Set, or Factory Set and Locked**



This series is a sensitive and reliable full range miniature differential vacuum switch with excellent sensitivity, repeat-ability and set-point tolerance.

Specifications:

NON-WETTED MATERIALS

Lock ring–steel, zinc chromate finish.
Electric switch housing–brass.
Plastic parts-nylon or PVC.

WETTED MATERIALS

Spring- Stainless Steel.
Magnet- Neodymium, nickel plated.
Capsule–17-7PH, proof - 125% of sensor capacity.
Seal-O-Ring–Standard BUNA N (optional–EPR, Viton, Silicone, Neoprene, etc.)
Locking Compound–Loctite #277.
Fitting–stainless steel.
Body–stainless steel.

DIFFERENTIAL VACUUM SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to raise the set point, counter clockwise to lower the set point. Holding the electric switch housing in position, tighten the lock ring and check the set point. Repeat above if necessary.

SETTING OPTIONS

Switches are normally supplied field adjustable, may be ordered factory set, or factory set and locked.

TEMPERATURE RANGE

0º F to +160º F, a slight change up to 2% in the set point may occur below +40º F and above +125º F.

WEIGHT

Approx. 7.8 ounces

PRESSURE CONNECTION

1/4" tube with Swagelok fittings (standard)
See Page 27 for optional fittings.

DV40 Series Performance Table. All values given in Inches of Hg. vacuum.

MAX. SYSTEM PRESSURE	MAX. SYSTEM PRESSURE DIFFERENTIAL	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER WITH STANDARD 1/4" SWAGELOK FITTINGS
100 PSIG	30" Hg	2.0-29.5	± 1.0	1.0 - 4.0	DV40-03BBXXXRA

* See page 25 for Technical Data on this Hall Effect Solid State Electronic Switch.

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HOW TO ORDER: DIFFERENTIAL SWITCHES

(DP10, 30 & DV20, 40 Series)

This chart illustrates the ordering procedure of Wasco differential switches

DP10	-05	B	B	080	R	A	-X	/9999
Switch Series	Sensor	Fitting (P1)	Fitting (P2)	Setpoint	Setpoint Indicator	Setpoint Adjustability	Options Callout	Unique Four digit number

Choose one of the following selections in each category

Switch Series

DP10, DV20, DV40, DP50

Sensor

-03, -04, -05, -06, -08, -10, -12, -15 (see switch series specification sheet for pressure range)

Fitting ("P1") & ("P2") Select one of the following for each fitting. See page 27 for optional fittings.

A= Cartridge (7/8 - 14)
B= 1/4" tube with Swagelok® Nut & Ferrule
C= 1/8" NPT Male
D= 1/4" NPT Male
E= 1/4" Male VCR® Style (9/16-18 with faceseal)
F= M12 X 1.5 Male
G= 7/16 - 20 Male

Setpoint

Using a three digit number, insert what your desired setpoint ("actuation point") is. For a mid-range setpoint, insert "MDR"

Setpoint Indicator

Use one of the following letters for DP10 & 30 series only
R= Setpoint is on RISING pressure
F= Setpoint is on FALLING pressure

Use one of the following letters for DV20 & 40 series only
H= Setpoint is on increasing vacuum (measuring vacuum with inches of mercury (Hg))
J= Setpoint is on decreasing vacuum (measuring vacuum with inches of mercury (Hg))
K= Setpoint is on decreasing Torr (increasing vacuum), where 760 Torr =atmosphere and 0 Torr = perfect vacuum)
L= Setpoint is on increasing Torr (decreasing vacuum), where 760 Torr =atmosphere and 0 Torr = perfect vacuum)

Setpoint Adjustability

A= Factory set and field adjustable
B= Factory set and permanently locked
C= Switch set at the middle of its' range and field adjustable (customer sets switch to final set point)

Options Callout

-X= Special Options; this will only be inserted when your application calls for special options. On initial order, include what X indicates, following the part number; example ("X= 48" electrical leads").

Unique Four digit number

Insert the four digit number (sometimes called "file number") that Wasco has supplied to you. This number identifies all the unique properties of your application. Note, this number is issued by the factory or your distributor/representative. Do not insert anything other than what has been issued to you. If the requirements for your application changes, check with Wasco to see if this four digit number needs to change. This number is used as a revision control.

Example: DP10-05BB080RA-X/9999

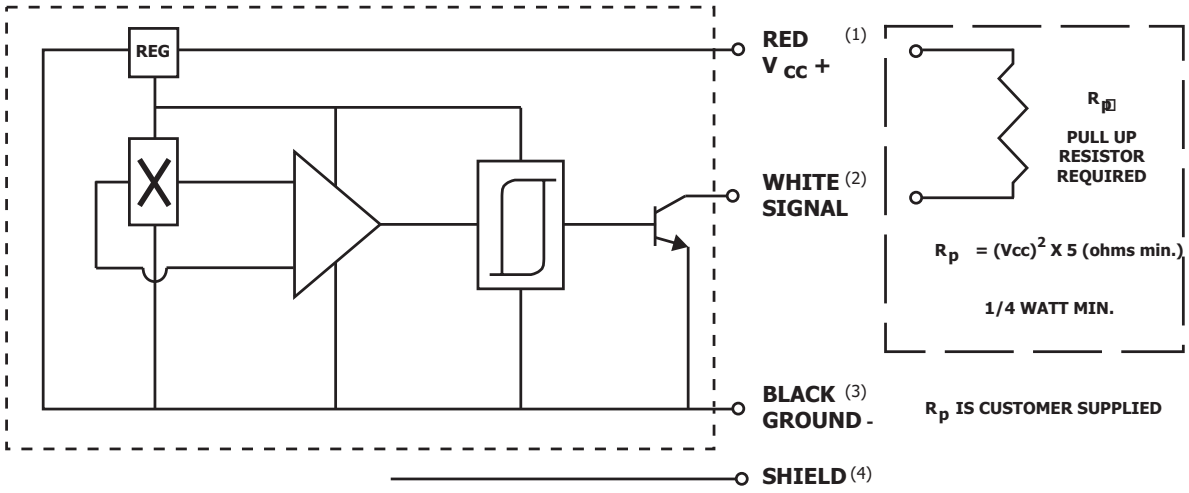
This part number indicates that this is a (DP10) series switch with a (-05) sensor (Maximum pressure of 125 PSI). P1 fitting is (B) 1/4" tube with Swagelok® Nut & Ferrule; P2 fitting is also a (B) 1/4" tube with Swagelok® Nut & Ferrule. The setpoint is 80 PSID (080) on (R) RISING pressure, the switch is (A) Factory set and field adjustable. (-X) Options callout indicates (for this switch only) that the switch includes a BX1-1 enclosure (see page 28 of this catalog for optional enclosure information). (9999) is the unique four digit number Wasco has issued to you.

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SOLID STATE TECHNICAL DATA

Hall Effect Solid State Electronic Switch



OPTIONS ON ALL SOLID STATE SWITCHES:

REVERSE POLARITY PROTECTION
OUTPUT SHORT CIRCUIT PROTECTION
PNP OUTPUT CAPABILITY (NPN output is standard)

ELECTRONICS SPECIFICATIONS:

INPUT VOLTAGE V_{CC}: +4.5 TO 24 VDC
INPUT CURRENT I_{CC}: 9 MILLIAMPS MAX. (OUTPUT VOLTAGE HI)
OUTPUT SATURATION VOLTAGE: 400 MILLIVOLTS MAX.
OUTPUT ON CURRENT, I_{SINK}: 50 MILLIAMPS MAX.
OUTPUT RISE TIME: 1 MICROSECOND
OUTPUT FALL TIME: 1 MICROSECOND
OUTPUT LEAKAGE CURRENT: 10 MICROAMPS MAX.
WHEN SWITCH IS NORMALLY **OPEN**: LOGIC IS "HI"
WHEN SWITCH IS **CLOSED**: LOGIC IS "LO" AT SET POINT

TEMPERATURE RANGE: 0º F to +160º F, a slight change up to 2% in the set point may occur below +40º F and above +125º F.

SOLID STATE LOW PRESSURE

HE 901 SERIES | 1 - 500 PSI RANGE

Features:

- Stainless Steel Construction
- Capsule Type Pressure Sensor
- Miniature Size
- Excellent Accuracy and Repeatability
- Field Adjustable, Factory Set, or Factory Set & Locked

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER
30 PSI	1-30	± 0.7	0.7-2.5	HE 901-39C
125 PSI	3-125	± 2.0	1.2-3.5	HE 901-59C
250 PSI	8-250	± 5.0	2.0-10.0	HE 901-89C
500 PSI	18-500	± 10.0	5.0-20.0	HE 901-159C



PRESSURE SWITCH ADJUSTMENT (if field adjustable)

This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to lower set point, counter clockwise to raise the set point. Holding the electric switch housing in position, tighten the lock ring and check the pressure setting. Repeat above if necessary.

Wetted Materials:

Capsule - 17-7 PH Stainless Steel
Seal - Buna-N, Viton, EPR
Unibody - 300 Series Stainless Steel

Note: All values given in PSI (gauge).

HE 902 SERIES | 1 - 100 PSI RANGE WITH OVERPRESSURE TO 3000 PSI

UL 353 Recognized </= 125 psig

Features:

- Stainless Steel Construction
- Sensitive Limp Diaphragm Sensor
- Miniature Size
- Excellent Accuracy and Repeatability
- Field Adjustable, Factory Set, or Factory Set & Locked

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER
3000 PSI	1-10	± 0.5	1.0-3.0	HE 902-18C
3000 PSI	5-50	± 1.0	1.2-3.5	HE 902-28C
3000 PSI	10-100	± 2.0	5.0-9.0	HE 902-38C



PRESSURE SWITCH ADJUSTMENT (if field adjustable)

A change in the set point may be made by turning the adjusting ring located in the opening in the side of the body. Causing the ring to turn counter clockwise will lower the set point, and turning clockwise will raise the set point. For the best results after resetting the switch, cycle the system pressure level several times to stabilize the new set point. Repeat above procedure if necessary.

Wetted Materials:

Fitting - 300 Series Stainless Steel
Adaptor - 300 Series Stainless Steel
Seal - Buna-N, Viton, EPR
Diaphragm - Kapton
Backup - 300 Series Stainless Steel
Screw - 300 Series Stainless Steel

Note: All values given in PSI (gauge).

Note: Optional fittings for HE 901 thru HE 906 see page 27.

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SOLID STATE HIGH PRESSURE

HE 903 SERIES | 400 - 6000 PSI RANGE | 9000 PSI PROOF

Features:
- Stainless Steel Construction
- Piston With O-Ring Style Sensor
- Miniature Size
- Excellent Accuracy and Repeatability
- Field Adjustable, Factory Set, or Factory Set & Locked

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER
3000 PSI	400-3000	± 4%	40-150	HE 903-18C
6000 PSI	900-6000	± 4%	50-350	HE 903-28C

Wetted Materials:
Piston - 17-4 Stainless Steel
Seal - Buna-N, Viton, EPR
Unibody - 300 Series Stainless Steel

Note: All values given in PSI (gauge).

NOTE: Type of media must accompany order.



PRESSURE SWITCH ADJUSTMENT (if field adjustable)
This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to lower set point, counter clockwise to raise the set point. Holding the electric switch housing in position, tighten the lock ring and check the pressure setting. Repeat above if necessary.

HE 904 SERIES | 100 - 6000 PSI RANGE | 9000 PSI PROOF

UL 353 Recognized
</= 125 psig

Features:
- Stainless Steel Construction
- Sensitive Limp Diaphragm Sensor
- Miniature Size
- Excellent Accuracy and Repeatability
- Field Adjustable, Factory Set, or Factory Set & Locked

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER
6000 PSI	100-500	± 3%	15 - 60	HE 904-18C
6000 PSI	400-2500	± 3%	20 - 200	HE 904-28C
6000 PSI	1500-6000	± 3%	100 - 600	HE 904-38C

Wetted Materials:
Fitting - 300 Series Stainless Steel
Adaptor - 300 Series Stainless Steel
Seal - Buna-N, Viton, EPR
Diaphragm - Kapton
Backup - 300 Series Stainless Steel
Screw - 300 Series Stainless Steel

Note: All values given in PSI (gauge).



PRESSURE SWITCH ADJUSTMENT (if field adjustable)
A change in the set point may be made by turning the adjusting ring located in the opening in the side of the body. Causing the ring to turn counter clockwise will lower the set point, and turning clockwise will raise the set point. For the best results after resetting the switch, cycle the system pressure level several times to stabilize the new set point. Repeat above procedure if necessary.

SOLID STATE VACUUM

HE 905 SERIES | 1 - 29.5 IN Hg RANGE

UL 353 Recognized

Features:
- Stainless Steel Construction
- Capsule Type Vacuum Sensor
- Miniature Size
- Excellent Accuracy and Repeatability
- Field Adjustable, Factory Set, or Factory Set & Locked

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER
29.9 IN Hg	1-29.5 IN Hg	± 1 IN Hg	1-4 IN Hg	HE 905-39C

Wetted Materials:
Capsule - 17-7 PH Stainless Steel
Seal - Buna-N, Viton, EPR
Unibody - 300 Series Stainless Steel

NOTE: Vacuum switches may be damaged if exposed to positive pressure.



VACUUM SWITCH ADJUSTMENT (if field adjustable)
This model may be adjusted by loosening the lock ring and turning the electric switch housing clockwise to lower set point, counter clockwise to raise the set point. Holding the electric switch housing in position, tighten the lock ring and check the pressure setting. Repeat above procedure if necessary.

HE 906 SERIES | 1 - 29.5 IN Hg RANGE WITH OVERPRESSURE TO 3000 PSI

UL 353 Recognized
</= 125 psig

Features:
- Stainless Steel Construction
- Sensitive Limp Diaphragm Sensor
- Miniature Size
- Excellent Accuracy and Repeatability
- Field Adjustable, Factory Set, or Factory Set & Locked

MAX. SYSTEM PRESSURE	SET POINT RANGE	SET POINT TOLERANCE	RESET BAND	PART NUMBER
3000 PSI	1-5 IN Hg	± .3 IN Hg	.5-2 IN Hg	HE 906-18C
3000 PSI	2-29.5 IN Hg	± .5 IN Hg	1 - 3 IN Hg	HE 906-28C

Wetted Materials:
Fitting - 300 Series Stainless Steel
Adaptor - 300 Series Stainless Steel
Seal - Buna-N, Viton, EPR
Diaphragm - Kapton
Backup - 300 Series Stainless Steel
Screw - 300 Series Stainless Steel



VACUUM SWITCH ADJUSTMENT (if field adjustable)
A change in the set point may be made by turning the adjusting ring located in the opening in the side of the body. Causing the ring to turn counter clockwise will raise the set point, and turning clockwise will lower the set point. For the best results after resetting the switch, cycle the system pressure level several times to stabilize the new set point. Repeat above procedure if necessary.

Note: Optional fittings for HE 901 thru HE 906 see page 27.

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OPTIONAL FITTINGS

The following fittings are available on most of Wasco's pressure and vacuum switches. Consult sales dept. for availability.



1/8" NPT Male (Standard)



1/4" NPT Male



1/8" NPT Female



1/4" NPT Female



1/4" VCR® Style (9/16 - 18)



1/4" VCO® Style (9/16 - 18)



1/4" Tube
(with Swagelok® nut & ferrule)



3/8" Tube
(with Swagelok® nut & ferrule)



M12 X 1.5



M16 X 1.5



7/16 - 20



7/16 - 20
(with 37° flare cone)



5/16 - 24



1/2 - 20
(with 45° cone)



5/8 - 18
(with 45° cone)



KF/NW 16

We are constantly adding additional fittings to our optional fittings selection. What are your needs?

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ENCLOSURES

This enclosure series is factory installed only, and is usually installed on switches that are **factory set and locked**. This will assure protection to the equivalent minimum level of NEMA 4.

BX1-2 is also available with a factory installed power connector to DIN 43650 specifications as shown, (BX1-2X).
- #1 pole - Normally open
- #2 pole - Normally closed
- Ground pole - Common

BX1-3 includes Heyco liquid tight pigtail fitting with strain relief.

MATERIAL:
- Body - 300 Series Stainless Steel
- Strain Relief (BX1-3) nylon with BUNA-N gland.



Military "M" Interface | **BX1-1** | **BX1-2X** | **BX1-2** | **BX1-3**

APPLICABLE SWITCH MODELS: for P/V110, P/V250, P325, P400, HE 901-906, DP 10, 30; DV 20, 40 Series, **factory set and locked only.**

BX1 Series Enclosures come standard with 20 AWG x 18" long jacketed wire.

HESS NUMBERING CODE

HE901	—	5	9	C	—	X
BODY STYLE		SENSOR	FITTING	SETTING OPTIONS		ADDITIONAL OPTIONS

SWITCH NUMBERING CODE

P110	—	3	1	W3	C	—	X
BODY STYLE		SENSOR	AMPERAGE	INTERFACE	SETTING OPTIONS		ADDITIONAL OPTIONS

UNIQUE FOUR DIGIT NUMBER

"File Number"

All Wasco Part Numbers are followed by a unique four digit number (sometimes called "file number") that Wasco will supply to you. This number identifies all the unique properties of your application. Note, this number is issued by the factory or your distributor/representative. Do not insert anything other than what has been issued to you. If the requirements for your application changes, check with Wasco to see if this four digit number needs to change. This number is used as a revision control. Example from "Switch Numbering Code" above is P110-31W3C/7668; "7668" is the "file number".

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ELECTRICAL SWITCH CHARACTERISTICS

MAX. AMP RATING	VOLTS AC/DC	AMP RESISTIVE	AMP INDUCTIVE	CONTACT MATERIAL
1	115/28	1/1	1/0.5	GOLD
5	250/28	5/5	5/3	SILVER
7	250/28	7/7	7/4	SILVER

CAUTION: For optimal Dry Circuit operation, use the gold contact 1 amp switch with a load current greater than 5mA.

STANDARD & OPTIONAL ELECTRICAL INTERFACES



F2 F3

SCREW TERMINALS

2 terminal 3 terminal
Potted with #8-32 screws.



Q2 Q3

QUICK-CONNECT

2 terminal 3 terminal
Potted, standard terminals that accept the ark-les or equal female terminals.



W2 W3

THIS IS THE STANDARD ELECTRICAL INTERFACE

JACKETED WIRE LEADS

2 wire 3 wire
Potted to full height for strain relief. Standard #20 AWG x 12" long jacketed wire. Polyvinyl chloride insulated.



L2 L3

FLYING WIRE LEADS

2 wire 3 wire
Potted, low profile style, flying leads only. Standard #20 AWG x12" long. Polyvinyl chloride insulated.



S2 S3

SOLDER PINS

2 pin 3 pin
Potted with .060" dia. pins. Also accepts AMP #60789-2 PIN receptacles.

IMPORTANT: If your choice of electrical interface is other than "W3", replace the "W3" with the style of your choice. (i.e. P110-31W3A becomes P110-31F2A)

SWITCH SET POINT SETTING OPTIONS

A = Factory set and field adjustable.
B = Factory set and permanently locked.
C = Set mid-range and field adjustable, customer to set final set point.

WIRE COLOR CODE

Pressure switch:
Common - Black
Normally Open (NO) - White
Normally Closed (NC) - Red

Vacuum Switch:
Common - Black
Normally Open (NO) - Red
Normally Closed (NC) - White

AVAILABLE OPTIONS AND SPECIAL MODIFICATIONS

To modify a part, add "-X" at the end of the part number. A full description must accompany your order.

If our standard line of switches does not meet your special requirements, please consult our Sales Department. We understand your needs in special situations when a standard product will not do the job. We will be glad to review your special requirements and advise you accordingly.

Let Wasco eliminate your final assembly. We can save you time by offering a wide variety of pin and connector assemblies for our switches. We utilize AMP, Molex, Cannon, Burndy, Hirschmann, Packard, Bendix and other connector suppliers. We have a certified class 100 cleanroom for manufacturing and welding. Other diaphragm materials are available such as Kalrez®, Teflon® or Stainless Steel.

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APPLICATION WORKSHEET

Please take a few minutes to record your application information. This will make it easier to determine the proper model and sensor.

We will be glad to assist you. Call or write, but please have the information as outlined below first

• Medium(media) _____

• Max. System Pressure _____ PSIG. Normal Working Pressure _____ PSIG

• Max. Spike Pressure _____ Number of Spikes per ___ minute ___ hour ___ day

• Max. System Temp. _____ ° F Normal Operating Temp. _____ ° F

• Desired Set Point _____ +/- _____ Pressure Increasing ☐ Pressure Decreasing ☐

• Electrical Use SPDT ☐ SPST ☐ Common and NO ☐ NC ☐

• Reset Point (if required) _____ Minimum ☐ Maximum ☐

• Reset Band (if required) _____ Minimum ☐ Maximum ☐

• CPM (cycles per minute) _____ Shifts/Day _____

• Electrical System _____ Volts, AC DC @ _____ Amp, Inductive Resistive

• Special Protection, ie: NEMA _____

• Type of Electrical Interface _____

•Vibration and Shock (if applicable)
Vibration _____ CPS @ _____ G's
Shock _____ G's @ _____ Milliseconds

• Zero Leakage Requirement _____

• Special Requirements or Modification. Please outline in detail below.

_____

_____

_____

Your Name: _____ Phone: _____

Company: _____ Fax: _____

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GLOSSARY OF TERMS

Accuracy: A measure of conformity between the value read on the indicating scale or calibrated dial and an accepted standard value. Instrument accuracy is usually expressed as a % of its range, i.e. "accurate within the limits of + x % of full range span."
Adjustable Range: The limits between which the set point can be adjusted.
Burst Pressure: Pressure which causes failure of the pressure element, resulting in permanent damage.
Cycle: One complete sequence of values of the controlled variable usually above and below the set point, which occurs during a time period.
DPDT: Double pole double throw has two independent circuits which are operated by a single actuator. A DPDT switch will contain two common, two normally open and two normally closed terminals.
Deadband: The minimum change in pressure required to open or close the contacts of a switch.
Differential Pressure: The measured pressure difference between two pressure sources.
Division 1: Classification of equipment used in hazardous locations. Division 1 locations occur where hazardous concentrations of flammable gases or vapors exist continuously, intermittently or periodically under normal conditions; frequently because of repair or maintenance operation/leakage or due to breakdown or faulty operation of equipment or processes which might also cause simultaneous failure of electrical equipment.
Division 2: Division 2 hazardous locations occur where flammable volatile liquid or flammable gases are handled, processed or used, but in which they will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown or in case of abnormal operation of equipment. Explosion-Proof Construction: Units which are designed to contain gas or vapor explosions within the enclosure and prevent ignition of the surrounding atmosphere.
Hysteresis: The difference in readings of an instrument when the value of the measured quantity is approached from two different directions.
Maximum Temperature: The highest temperature at which a pressure or vacuum switch may be operated without resulting in the loss of accuracy and set point tolerance.
Maximum Working Pressure (MWP): The designed safe limit of a pressure element for regular use at a specified pressure.
NEMA 4: Water-tight and dust-tight enclosures intended for use indoors or outdoors to protect the equipment against splashing, falling, or hose directed water, external condensation and water seepage. They are also sleet-resistant.
NEMA 4X: Water-tight, dust-tight and corrosion resistant enclosures with same qualifications as NEMA 4, but with added corrosion resistance.
NEMA 7: Enclosures for indoor Class I, Division 1 Hazardous locations with gas or vapor atmospheres.
NEMA 9: Enclosures for indoor Class ll, Division 1 Hazardous locations with combustible dust atmospheres.
Proof Pressure: Pressure in excess of the maximum working pressure to which a pressure sensor may be occasionally subjected, which causes no permanent damage. The unit may require recalibration.
Reset Band: The difference in pressure between the set point and the reset point.
Reset point: Point at which a switch will return to its original or normal operating position.
Sensor: A primary measuring device (bellows, diaphragm, piston) for detecting either the absolute or variable pressure.
Set Point: The predetermined point at which a switch will operate and can be specified either on increasing or decreasing pressure.
Set Point Tolerance: The exactness with which a unit duplicates its set point value after each successive cycle, within the same conditions. SPDT: Single pole double throw, an SPDT switch contains one common, normally open and normally closed terminal.
Vacuum Pressure: The value of pressure below atmospheric pressure.
Wetted Parts: Components that come into direct contact with the process.
Working Pressure Range: The pressure range within which two opposing sensors can be safely operated and still maintain set point adjustability provided the difference in pressure between them does not exceed the designed adjustable range.

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HOW TO ORDER

Always order by model number, file number, (if available) Media, for O-Ring compatibility, Amperage, for proper electrical load, Maximum PSIG, to determine capsule or spring package, Set Point, and any special "X" items required that are not standard. All orders are subject to final acceptance by Wasco, Inc.

TERMS

Net 30 days after credit approval; otherwise payment must be received before shipment, or if approved, C.O.D. shipment.

RETURN POLICY

Should one of our products be suspected of malfunction, return it as soon as possible, with shipping charges prepaid. An RMA (Return Material Authorization) number must be issued for your return. Please do not attempt to disassemble or repair as this action may destroy evidence of malfunction. Your cooperation in this regard will save both time and money.

WARRANTY POLICY

WASCO warrants its differential,pressure and vacuum switch products to be free from defects in material and workmanship in normal use and service for a period of 3 years or 1 million cycles from date of shipment, which ever occurs first. This warranty is limited to the repair or replacement of the product or part thereof which the Seller's inspection finds to be defective. This warranty shall not apply if the product has been subjected to misuse, negligence, accident, modification or repair by unauthorized persons. Repairs NOT covered under this Warranty will be subjected to a standard service charge. No other warranty or guarantee is expressed or implied.

Note: Please consider all the possible failure modes in your system that could occur with the use of our product. The switch you are considering could fail mechanically or electrically and the user must bear full responsibility for its' misapplication and misuse, including but not limited to any losses or damages caused by your use of that switch in your products, and by your customer's use of your products. Wasco, Inc. accepts no responsibility or liability for failures resulting from any misapplication of its product.

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Transducer Specifications

Performance Specifications

	T1 Series	T2 Series	T3 Series
Output Type	0.5 to 4.5 Volts	1 - 5 Volts	4 - 20 mA
Accuracy [1]	**0.5% FS -40 to 220ºF**	**0.5% FS -40 to 220ºF**	**0.5% FS -40 to 220ºF**
Linearity[2]	< 0.25%FS (15 - 500 Psia) < 0.5%FS (750 - 3000 Psia)	< 0.25%FS (15 - 500 Psia) < 0.5%FS (750 - 3000 Psia)	< 0.25%FS (15 - 500 Psia) < 0.5%FS (750 - 3000 Psia)
Zero Pressure Offset [3] (Consult Factory for other options)	0.5 V +/-0.05 V	1 V +/- 0.05 V	4mA +/- 0.2 mA
Operating Temperature	-40 to 220ºF	-40 to 220ºF	-40 to 220ºF
Storage Temperature	-40 to 220ºF	-40 to 220ºF	-40 to 220ºF
Proof Pressure	3 X FS	3 X FS	3 X FS
Burst Pressure	10 X FS or 15,000 Psia (whichever is less)	10 X FS or 15,000 Psia (whichever is less)	10 X FS or 15,000 Psia (whichever is less)

Electrical Specifications

Output Type	0.5 to 4.5 Volts	1 - 5 Volts	4 - 20 mA
Supply Voltage	5 +/- 0.5	8 to 30 Volts	8 to 30 Volts
Supply Current	< 6 mA	< 3 mA	Not Applicable
Output Current	0.45 mA Max (Sink or Source)	0.45 mA Max (Sink or Source)	Not Applicable
Response Time	< 1 ms	< 1 ms	< 1ms

Reliability and Environmental Performance

	Test Conditions	Value	Units
Wetted Materials	304L & 316L Stainless Steel	-	-
Pressure/Temperature Cycles[4]	0 to FS @ 8Hz; and -40ºF to 220ºF	>1.8x10^6	Cycles
Thermal Shock	220ºF to -40ºF, 0.5 hr soak at temperature (2s transfer)	250	Cycles
Vibration	10 to 2050 Hz, 20 Sinusoidal, 3 Axes	144	Hours
Humidity	185ºF and 90% to 95% relative humidity	250	Hours
Weight	T1 Series with 1/8" NPT 316L stainless steel fitting	≤1.5	Ounces

[1]Includes pressure and temperature hysteresis, repeatability, non-linearity and calibration.
[2]Calibrated using BFSL
[3]Sensor output @ 14.5 psia.
[4]Pressure cycling performed at rated full scale pressure.

Limited Warranty (for Wasco Transducers only)

All WASCO INC. transducers are warranted against defective materials and workmanship for a period of one (1) year from the date of delivery to the original purchaser. Any product that is found to be defective within the one year period will be replaced or repaired at the discretion of WASCO INC. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABLITY, FITNESS FOR A PARTICULAR PURPOSE, PERFORMANCE, OR OTHERWISE. WASCO INC. is not an expert in the customer's technical field and therefore does not warrant the suitability of its products for the applications selected by the customer. WASCO INC. accepts no responsibility for misuse, misapplication or unauthorized modification of its products. WASCO INC.'s obligation under this limited warranty is strictly and exclusively limited to the repair or replacement free of charge of such products as are to be found to be defective in material or workmanship on the condition that the purchaser gives prompt written notice to WASCO INC. of any claim to breach of warranty within the warranty period, and if requested, returns the defective product(s) to WASCO INC. WASCO INC. will not assume any expenses or liability for repairs made to its products outside of its plant without its prior written consent. WASCO INC. reserves the right to satisfy its warranty obligation in full, with respect to defective products, by the payment to the purchaser of all sums paid by the purchaser to WASCO INC. for such products. IN NO EVENT SHALL WASCO INC. BE LIABLE FOR CLAIMS (BASED UPON BREACH OR EXPRESS OR IMPLIED WARRANTY, NEGLIGENCE OR OTHERWISE) FOR ANY DAMAGES, WHETHER DIRECT, IMMEDIATE, INCIDENTAL, FORSEEABLE, CONSEQUENTIAL, OR SPECIAL. WASCO INC. reserves the right to change its specifications at any time without notice.

Wasco INC.

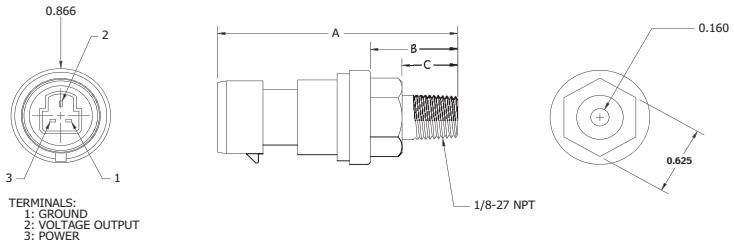
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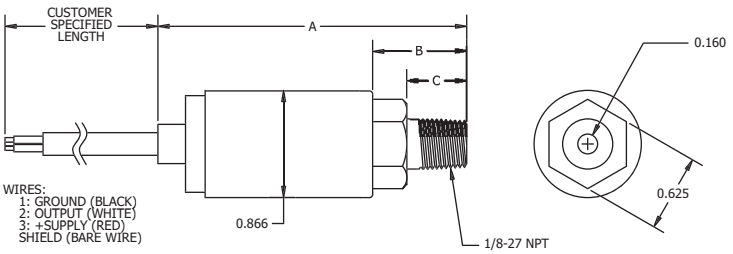
Transducer Drawings

T1 Series Dimensional Drawings



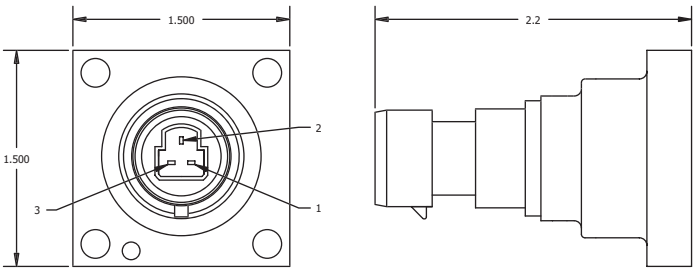
TERMINALS:
1: GROUND
2: VOLTAGE OUTPUT
3: POWER

THREAD SIZE	LENGTH "A"	LENGTH "B"	LENGTH "C"
1/4-18 NPT	2.20	.875	.600
1/8-27 NPT	2.10	.760	.485
7/16-20 UNF	1.95	.625	.350
1/4" Faceseal	2.22	.900	.625

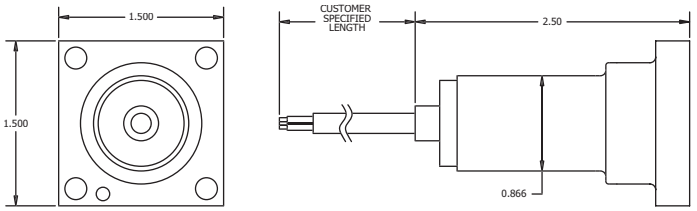


WIRES:
1: GROUND (BLACK)
2: OUTPUT (WHITE)
3: +SUPPLY (RED)
SHIELD (BARE WIRE)

THREAD SIZE	LENGTH "A"	LENGTH "B"	LENGTH "C"
1/4-18 NPT	2.61	.875	.600
1/8-27 NPT	2.50	.760	.485
7/16-20 UNF	2.36	.625	.350
1/4" Faceseal	2.63	.900	.625

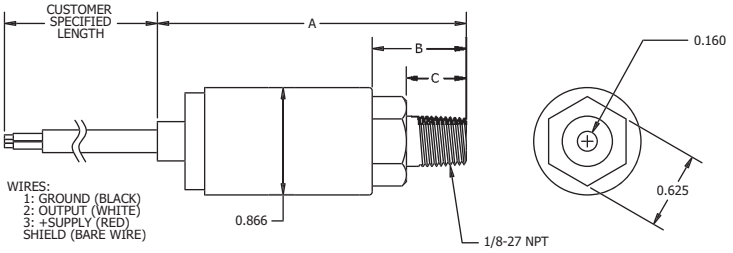


TERMINALS:
1: GROUND
2: VOLTAGE OUTPUT
3: POWER



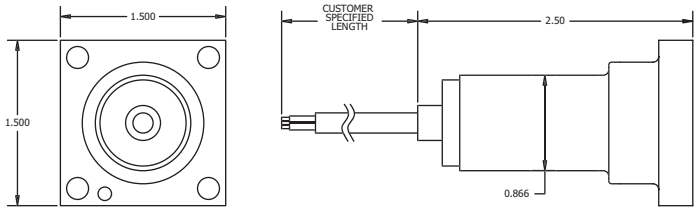
WIRES:
1: GROUND (BLACK)
2: OUTPUT (WHITE)
3: +SUPPLY (RED)
SHIELD (BARE WIRE)

T2 Series Dimensional Drawings



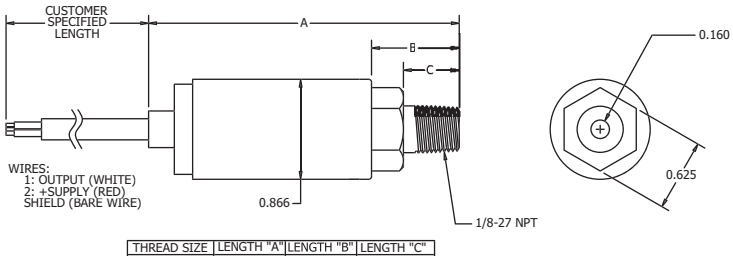
WIRES:
1: GROUND (BLACK)
2: OUTPUT (WHITE)
3: +SUPPLY (RED)
SHIELD (BARE WIRE)

THREAD SIZE	LENGTH "A"	LENGTH "B"	LENGTH "C"
1/4-18 NPT	2.61	.875	.600
1/8-27 NPT	2.50	.760	.485
7/16-20 UNF	2.36	.625	.350
1/4" Faceseal	2.63	.900	.625



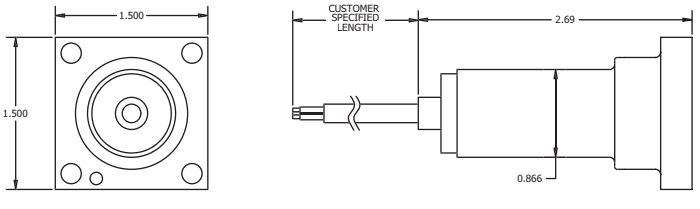
WIRES:
1: GROUND (BLACK)
2: OUTPUT (WHITE)
3: +SUPPLY (RED)
SHIELD (BARE WIRE)

T3 Series Dimensional Drawings



WIRES:
1: OUTPUT (WHITE)
2: +SUPPLY (RED)
SHIELD (BARE WIRE)

THREAD SIZE	LENGTH "A"	LENGTH "B"	LENGTH "C"
1/4-18 NPT	2.81	.875	.600
1/8-27 NPT	2.70	.760	.485
7/16-20 UNF	2.56	.625	.350
1/4" Faceseal	2.83	.900	.625



WIRES:
1: OUTPUT (WHITE)
2: +SUPPLY (RED)
SHIELD (BARE WIRE)

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How to Order: Transducers

This chart illustrates the part number matrix of Wasco pressure transducers

(Choose one of the following selections in each category)

T1- 0100 A P3 G -123 (Optional)

Product Series

T1 (.5 - 4.5 output)
T2 (1 - 5 output)
T3 (4 - 20 mA output)

Pressure Range

V000 (0" Hg (atmosphere) - 30" Hg)
V100 (30" Hg (vacuum)- 100 PSIA)
0015 (0 - 15 PSI)
0050 (0 - 50 PSI)
0075 (0 - 75 PSI)
0100 (0 - 100 PSI)
0200 (0 - 200 PSI)
0300 (0 - 300 PSI)
0500 (0 - 500 PSI)
0750 (0 - 750 PSI)
1000 (0 - 1000 PSI)
2000 (0 - 2000 PSI)
3000 (0 - 3000 PSI)
Other ranges available, consult with Sales Department

Fitting

A : 1/4" Male faceseal
B : 1 1/2" Downmount
C : 1 1/8" Downmount
D : 1/4" tube (weld stub)
E : 3/8 - 24 Straight thread
F : 7/16 - 20 Straight thread
G : 9/16 - 18 Straight thread
H : M12 x 1.5 Straight thread
J : 1/8" NPT Male
K : 1/4" NPT Male

Electrical Connection

P3 : Packard, 3 pin
W12 : Shielded wire, 12 inches
W24 : Shielded wire, 24 inches
W36 : Shielded wire, 36 inches
W48 : Shielded wire, 48 inches
W60 : Shielded wire, 60 inches
W72 : Shielded wire, 72 inches

Pressure Measurement

A : Absolute (PSIA)
G : Gauge (PSIG)

Three Digit # for Custom Options

If necessary, Wasco will assign a three digit number that will corrolate your specific options that are not called out in our standard part numbering.

Example: T1-0100AP3G

.5 - 4.5 VDC output transducer, 0-100 PSI range, 1/4" Male faceseal, Packard 3 pin electrical connection, Gauge pressure reference.

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We buy equipment

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