

PVS

Sensors Inc.

Transducers

Temperature

Differential

Level

High Pressure

Low Pressure

Vacuum

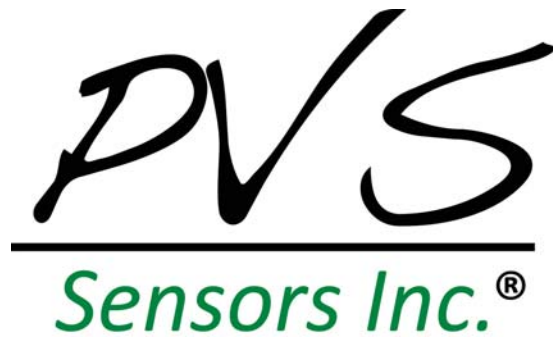
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COMPANY PROFILE

PVS offers a range of USA manufactured pressure, vacuum, temperature and differential switches designed for applications in the Industrial and Mobile Hydraulic field as well as Pneumatic, Water Process, Refrigerant, Air Conditioning, Beverage and other associated industries.

The USA designed and manufactured products are complimented by a competitive range of Temperature and Pressure Transducers.

PVS Sensors Inc. offers a complete custom design and manufacturing service providing custom switch products to meet specific customer needs.

From a simple modification to designing a custom sensor, PVS Sensors engineering and sales staff has an answer for your pressure switch needs.

USA Design, Manufacturing & Sales

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www.pvssensors.com**

TABLE OF CONTENTS

PRODUCT SERIES	DESCRIPTION	PAGE NUMBER	
VACUUM SWITCHES			
AVA / AVF	5 to 25 inHg	3	
PVA / PVF	3 to 25 inHg	4	
PRESSURE SWITCHES			
DPA / DVA / DDA Multi- Function	0.22 - 36 PSI / 0.5 - 25 in HG	5	
LPF	5 - 650 PSI	6	
SPF	5 - 2000 PSI	7	
HPA / HPF	3 - 150 PSI	8	
PMA / PMF	2 - 150 PSI	9	
APA / APF	3 - 150 PSI	10	
BPA / BPF	5 - 6000 PSI	11	
BMA / BMF	10 - 7500 PSI	12	
FDA / FDF	5 - 75 PSI	13	
EPA / EPF	1.5 - 6000 PSI	14	
TEMPERATURE SWITCHES			
TAS/TFS	Fluid Expansion (40°F - 300°F)	15	
TBM	Bi-Metal (75°F - 290°F)	16	
TCM	Bi-Metal (75°F - 290°F)	17	
TAF	Bi-Metal (75°F - 290°F)	18	
MTB	Bi-Metal (40°F - 300°F)	19	
TSS	Temperature Sender	20	
SML	Level Switch	21	
VLS	Level switch	22	
TFL	Temperature/Level Switch	23	
TEMPERATURE TRANSDUCERS			
TTR	-40°F - 400°F (-40°C - 205°C)	24	
PRESSURE TRANSDUCERS			
PTL	0 - 285 psi Range	25	
VTC	0-2000 psi Range	26	
XTC	0-3500 psi Range	27	
STC	-14.5 - 8700 psi Range	28	
JTC	0-10,000 psi Range	29	
TDD	Digital Display (0-3500 psi Range)	30	
DPT	Differential (0 - 365 psi Range)	31	
GTC	0 - 8700 psi Range	32	
SPS	-14.5 - 8700 psi Range	33	
STS	-58 - 500°F Temperature Range	34	
SLS	3 in HG - 300 in HG Range	35	
APPENDIX			
Electrical Pin Out	36	Degrees of Protection	40
Electrical Configuration	37	Torque Specifications	41
Switch Application Form	38	Material Compatability	42
Transducer Application Form	39	Terms and Conditions	43

DEFINITIONS AND TERMINOLOGY

ACCURACY, (REPEATABILITY) - Accuracy is the maximum allowable set point deviation of a single pressure or temperature switch under one given set of environmental and operational conditions.

ACTUATION AND DEACTUATION POINT - The actuation point (sometimes called set point) is the exact point at which the electrical circuit controlled by the switching element is opened (or closed) on increasing pressure or temperature. The deactuation point is the opposite at which the electrical circuit is closed (or opened) on decreasing pressure or temperature.

DEAD BAND - The dead band sometimes referred to as "differential" or "hysteresis" is the change in pressure between actuation and deactuation set points.

PRESSURE SWITCH - An instrument that upon the increase or decrease of a pressure or vacuum, opens or closes one or more electrical switching elements at a predetermined actuation point (setting).

PRESSURE SENSING ELEMENT - That portion of the pressure switch that is in contact with and moves as a result of a change in pressure of the medium. The most common type of pressure sensing elements are diaphragms, accordion bellows, bourdon tubes, and pistons.

SINGLE POLE DOUBLE THROW (SPDT) SWITCHING ELEMENT -

A SPDT switching element has one normally open, one normally closed and one common terminal. Three terminals mean that the switch can be wired with the circuit either normally open (N/O) or normally closed (N/C).

NORMALLY CLOSED SWITCHING ELEMENT (NC) - Is one in which the terminals are wired so that current can flow through the switching element until pressure is applied to open the electrical circuit.

NORMALLY OPEN SWITCHING ELEMENT (NO) - Is one in which the terminals are wired so that no current can flow through the switching element until the pressure is applied to close the electrical circuit.

PRESSURE, PROOF - Proof Pressure is the maximum pressure which can be applied to any switch without causing permanent degradation.

Electrical Specifications

Please refer to individual data pages for electrical specifications.

Circuit Definitions

Form A - SPST - NO

Single Pole - Single Throw
Normally Open

Form B - SPST - NC

Single Pole - Single Throw
Normally Closed

Form C - SPDT

Single Pole - Double Throw

Standard Electrical Circuit

Wire Color	DIN 43650 Number	C Circuit
Black	1	Common
Green	2	N. Closed
Red	3	N. Open

TECHNICAL DATA

PVS Pressure, Vacuum and Temperature Switches are sealed, vibration resistant and ruggedly built to provide a reliable protection for automatic control of equipment and processes. They are designed for direct or remote mounting and offer a quality product at a competitive price.

Microswitch - Each PVS pressure, vacuum and temperature switch except for the PVA, PMA, DPA, EPA and bi-metal temperature models contain a precision, snap-action microswitch which meets or exceeds industrial standards for reliability; electrical capacity and long life.

The snap action micro switch meets underwriters and CSA specifications for 5 amp or 3 amp rating dependent upon specification type - consult factory for additional data.

Setting - The set point of each switch is preset at the factory as follows:

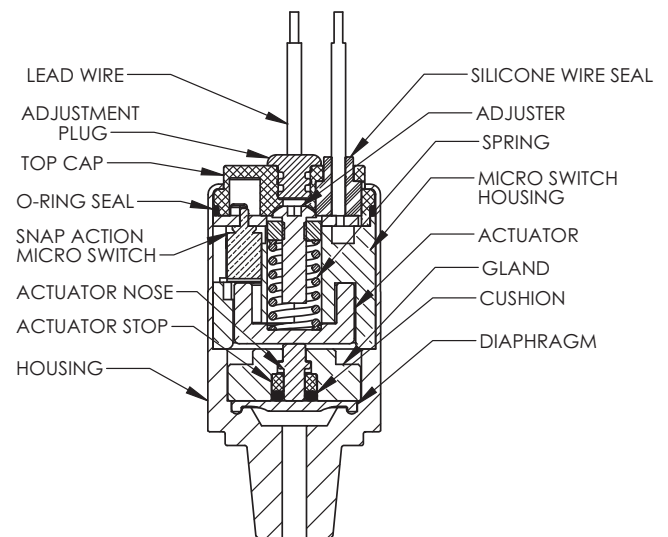
- Field adjustable series - bottom of range
- Factory set series - at the desired set point

The switches can be ordered for operation with either rising or falling temperature, vacuum or pressure. Reset of the microswitch is automatic and depends upon the dead band or differential of the particular model.

Switch Protection - Standard PVS switches offer excellent protection and long life in most applications. They are also sealed for weatherproof protection. The corrosion-resistant materials in the wetted areas and the standard nitrile diaphragm are suitable for most media. Where required the switches are available with VITON®, KAPTON®, EPDM or Low Temperature Nitrile diaphragms and, in some cases, optional steel, brass or stainless steel housings and wetted areas.

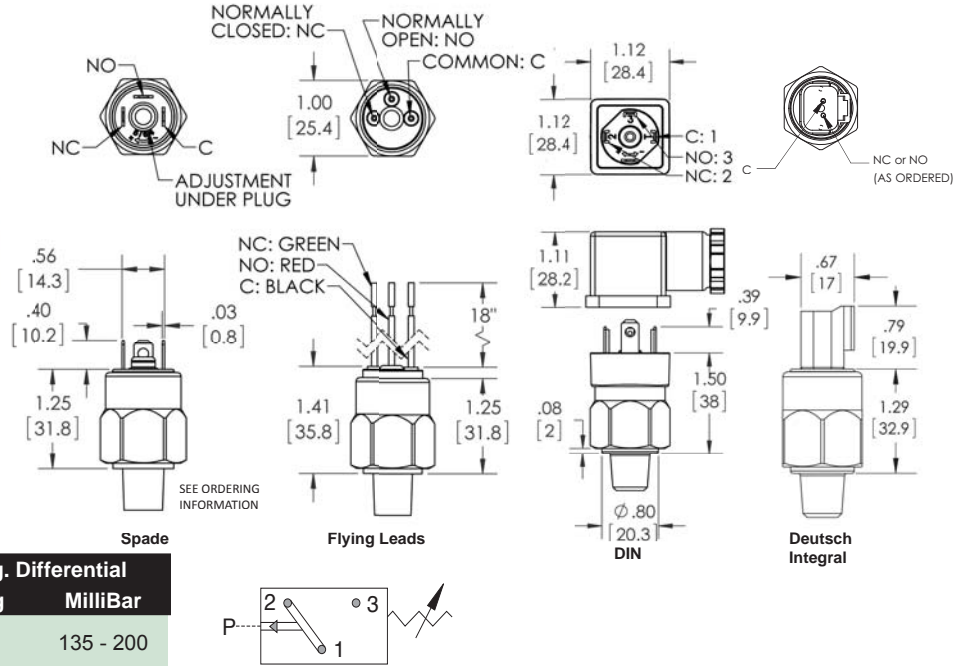
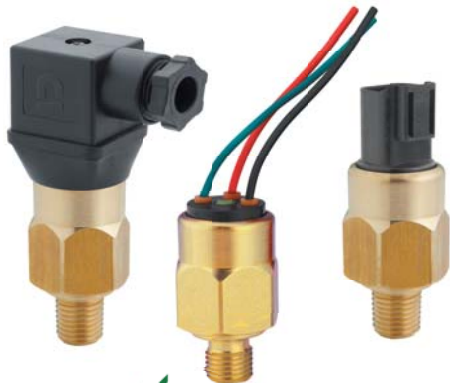
Mechanism - Where the pressure switch is subject to higher pressure, either dynamic or static, of over 700 psi, the diaphragm operating mechanism includes an O-ring cushion which absorbs the slight operation motion required while preventing extrusion of the diaphragm material into the piston-to-cylinder clearance.

Gold Contacts - May be required for applications where less than 12VDC and 20 Milliamps



Model BPA Shown

AVA/AVF Vacuum Switch



Model	Adjustment Range		Avg. Differential	
	in Hg	MilliBar	in Hg	MilliBar
1	5 - 25	170 - 850	4 - 6	135 - 200

ELECTRICAL:

Standard: 5A, 125V/250VAC - U.L. Recognized*
 5A, 12/24VDC - U.L. Recognized*
 Option -7: 0.02A, 60VDC - U.L. Recognized*
 Gold contacts may be required for less than 12 VDC and 20 milliamps

MANUFACTURER'S OTHER RATING:
 5A @ 40VDC

WETTED MATERIAL:

Diaphragm: Buna-N (standard)
 (optional EPDM, KAPTON®, VITON®)
 Housing: Brass
 (optional 316 Stainless Steel)

PROTECTION:

Exposed Terminals – IP00
 DIN HC – IP65
 Flying Leads, M12, Deutsch Integral - IP69

REPEATABILITY:

± 2% of full set point range at 70°F (21°C)
 Ambient Temperature

SWITCH TYPE:

Snap Action

MECHANICAL LIFE:

1,000,000 cycles

TEMPERATURE RANGE:

Buna – N: -15° to +230°F (-26° to 110°C)
 EPDM: -10° to +250°F (-23° to 121°C)
 KAPTON®: -40° to +230°F (-40° to 110°C)
 VITON®: 0° to +302°F (-18° to 150°C)
 (® Registered Trademark of DuPont)

MAXIMUM OVERPRESSURE:

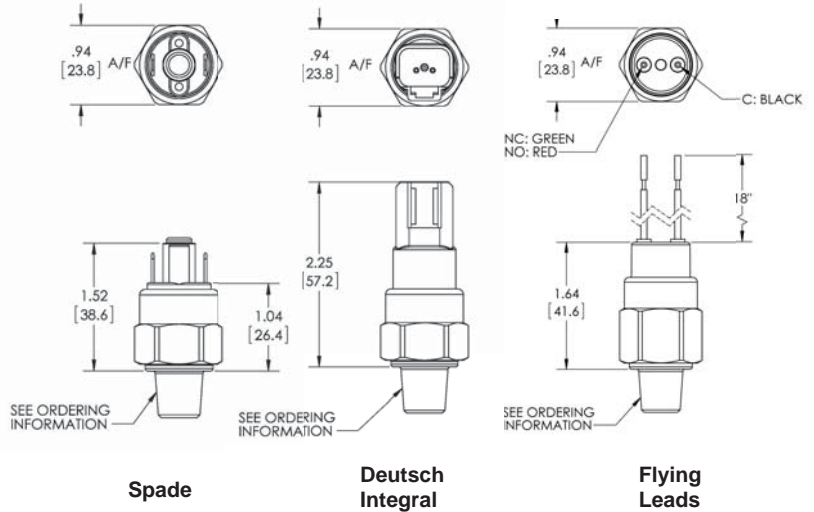
350 PSI (24 Bar)

WEIGHT:

0.08 lbs (0.04 kg)

ORDERING INFORMATION

AVA	- * 1	- * R	- 4M	- A	- FL	- * 1
Model	Set Point	Direction	Port Size	Circuit	Terminal	Options
AVA - Field Adjustable	See Above Adjustment Ranges	R - Rising F - Falling MBR - Millibar Rising MBF - Millibar Falling	2M - 1/8 NPT 4M - 1/4 NPT 4MF - 1/4 NPTF (Male Dryseal thread)	A - SPST / NO B - SPST / NC C - SPDT	SP - 1/4" x 1/32" Spade TS - 6-32 Terminal Screws FL - 18" Flying Leads FLL - Advise additional length of leads if required FLWTF - Weatherpack Tower Female FLWTM - Weatherpack Tower Male FLWSF - Weatherpack Shroud Female FLWSM - Weatherpack Shroud Male H - DIN 43650A Male Half Only HC - DIN 43650A Cable Clamp HN - DIN 43650A 1/2 Conduit (female) HCC - XXX (Specify Length in Inches) HC11A - DIN Light NO/NC 110V HC11B - DIN Light NO/NC 12VDC HC11C - DIN Light NO/NC 24VDC HC11D - Indicating Light Green/Red (can only be used with SPDT Circuit) DI - Deutsch Integral M12 - M12 X 1 PP - Packard Plug	* - Omit If Standard 1 - VITON® Diaphragm 2 - EPDM Diaphragm 2W - EPDM Diaphragm (WRAS) 3 - KAPTON® Diaphragm 4 - 316 SS Housing 5 - Spiral Restrictor 6 - Oxygen Cleaned 7 - Gold Contacts UL - UL Recognized** **For Selected Models Only - Consult Factory 12 - WRAS Approved **** Call Factory for Shrink Wrap Options & Pricing
AVF - Factory Set	*Model AVF Specify Set Point Required	*Omit For Model AVA	2G - 1/8 BSPP 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS - 1/4 BSPP (no undercut) 4S - 7/16X20 SAE MALE 4SW - 7/16X20 SAE Swivel 6S - 9/16X18 SAE MALE M10 - M10X1 M12 - M12X1.5 Consult Factory for Non-Standard			



Model	Adjustment Range		Avg. Differential
	in Hg	MilliBar	
1	3 - 25	100 - 850	Less than 10% of Actuation Point

ELECTRICAL:

100 VA Max Voltage 42 VDC
Gold contacts may be required for less than 12 VDC and 20 milliamp

WETTED MATERIAL:

Diaphragm: Buna-N
(optional KAPTON®, EPDM, VITON®)
Housing: Brass
(optional Steel - Nickel Plated, 316 Stainless Steel)

PROTECTION:

IP69 except exposed terminals – IP00

REPEATABILITY:

± 3% of full set point range at 70°F (21°C)
Ambient Temperature

SWITCH TYPE:

Creep Action

MECHANICAL LIFE:

1,000,000 cycles

TEMPERATURE RANGE:

Buna – N: -15° to +230°F (-26° to 110°C)
EPDM: -10° to +250°F (-23° to 121°C)
KAPTON®: -40° to +230°F (-40° to 110°C)
VITON®: 0° to +302°F (-18° to 150°C)
(® Registered Trademark of DuPont)

MAXIMUM OVERPRESSURE:

350 PSI (24 Bar)

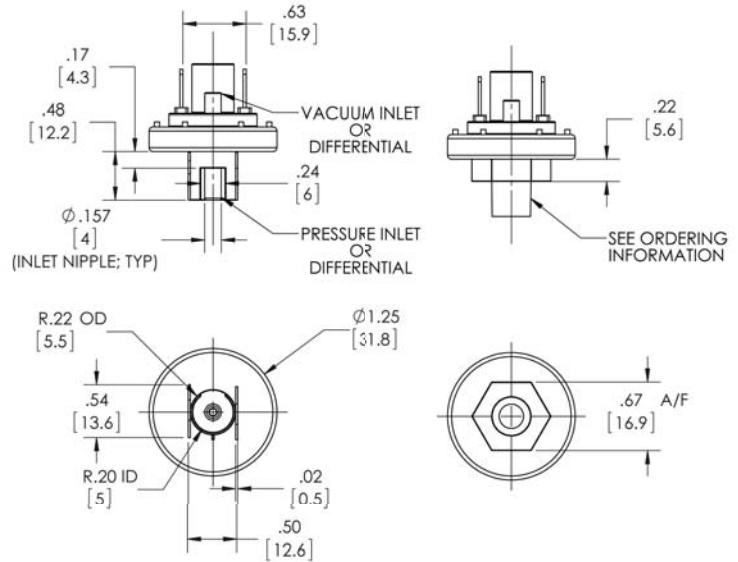
WEIGHT:

0.15 lbs (0.07 kg)

ORDERING INFORMATION

PVA	- * 1	- * R	- 4M	- A	- SP	- * 1
Model	Set Point	Direction	Port Size	Circuit	Terminal	Options
PVA - Field Adjustable	See Above Adjustment Range	R - PSI Rising F - PSI Falling	2M - 1/8 NPT 4M - 1/4 NPT 4MF - 1/4 NPTF (Male Dryseal thread)	A - SPST / NO B - SPST / NC	SP - 1/4" x 1/32" Spade TS - 6-32 Terminal Screws FL - 18" Flying Leads FLL - Advise additional length of leads if required	* - Omit If Standard 1 - VITON® Diaphragm 2 - EPDM Diaphragm 3 - KAPTON® Diaphragm 4 - 316 SS Housing 4A - Steel - Nickel Plated 5 - Spiral Restrictor 6 - Oxygen Cleaned 7 - Gold Contacts
PVF - Factory Set	* Model PVF Specify Set Point Required	*Omit For Model PVA	2G - 1/8 BSPP 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS - 1/4 BSPP (no undercut) 4S - 7/16X20 SAE MALE 6S - 9/16X18 SAE MALE M10 - M10X1 M12 - M12X1.5		FLWTF - Weatherpack Tower Female FLWTM - Weatherpack Tower Male FLWSF - Weatherpack Shroud Female FLWSM - Weatherpack Shroud Male DI - Deutsch Integral	**** Call Factory for Shrink Wrap Options & Pricing
			Consult Factory for Non-Standard			

DPA / DVA / DDA Multi Function Pressure / Vacuum / Differential Switch



Model **DPA** series is a multi function **PRESSURE**, **VACUUM** and **DIFFERENTIAL** switch designed specifically for low pressure applications. The switch design affords a stable set point with a very low differential and is rated at both DC and AC applications. The switch can function as a Pressure, Vacuum, or Differential switch when used with non hazardous gases but only as a Pressure Switch when used with Oil or Water. The **DPA** compact switch extends the product range now available from PVS Sensors, Inc.

ELECTRICAL:

2.5(0.5)A - 250V 4A - 24 VDC
8A - 12 VDC 15A - 6 VDC
Gold Contacts are available for low DC voltage/low amperage applications

ADJUSTABLE PRESSURE RANGE:

DPA/DPF Pressure: 0.22 to 36 psi (15 to 2500 mBar)
(See ordering information for Set Point Ranges)
DVA/DVF Vacuum : 0.5 to 25 in HG (17 to 825 mBar)
DDA/DDF Differential: Adjustable within the above specified ranges

MEDIA:

Non-Hazardous Gas, Water or Oil
(Pressure Switch ONLY for Water and Oil applications)

WETTED MATERIAL:

Housing: Glass Filled Nylon
Diaphragm: Molded Silicone

SWITCH TYPE:

Creep Action

MECHANICAL LIFE:

100,000 cycles

PROTECTION:

IP00

TEMPERATURE RANGE:

-22° to +180°F (-30° to +82°C)
Ambient

MAX OPERATING PRESSURE:

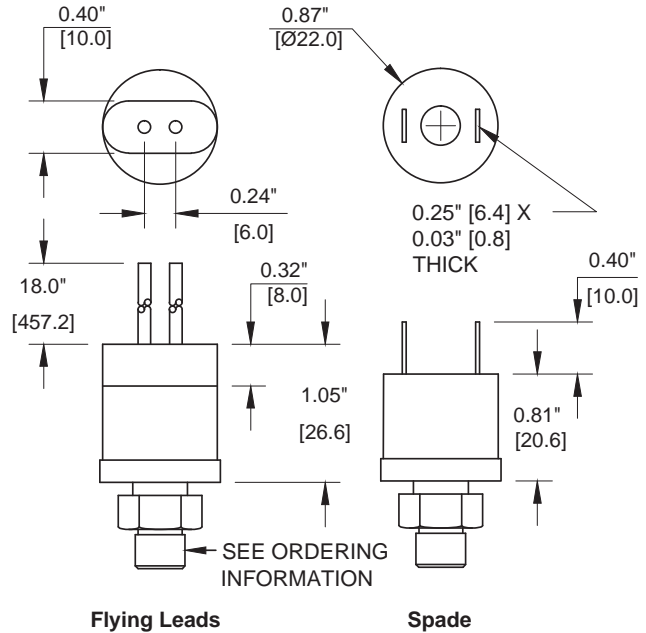
45 PSI (3000 mBar)

WEIGHT:

.05 lbs (0.023 kg)

ORDERING INFORMATION

DPA	- 1 *	- R *	- 3	- A	- A	- *
Model	Set Point	Direction	Port Size	Circuit	Termination	Options
DPA DVA DDA Field Adjustable	Pressure: 1 - 0.22 to 1.2 psi (15 - 80 mbar) 2 - 1.2 to 3 psi (80 - 200mbar) 3 - 2 to 7 psi (150 - 500mbar) 4 - 6 to 12 psi (400 - 800mbar) 5 - 10 to 17 psi (700- 1200mbar) 6 - 14.5 to 36 psi(1000- 2500mbar) Vacuum : 0.5 to 25 in HG (17 to 825 mBar) (Call Factory for ranges) Differential: Adjustable within the above specified ranges *Specify Set point for DPF, DVF & DDF	R - Rising F - Falling * Omit for Models DPA, DVA & DDA	1 - G1/8 Male (P) 2 - M10 X 1 Male (P) 3 - 4mm OD tube(P/V) 4 - 1/8" NPT Male(P)	A - Normally Open B - Normally Closed	A - 4.8mm Spade Terminals B - 6.3mm Spade Terminals	* Omit if Standard 7 - Gold Contacts
DPF DVF DDF Factory Set						



ELECTRICAL:

24V/125VA, 120V/375VA,
240V/375VA, 6A/36VDC
Max Amps @ 12 VDC - 13.5

TEMPERATURE RANGE:

-22° to +180°F (-30° to +82°C)
Ambient and Medium

WETTED MATERIAL:

Diaphragm: Stainless Steel
Port: Brass

HOUSING:

Plastic

PROTECTION:

IP68 except exposed terminals – IP00

REPEATABILITY:

± 3 PSI of set point

SWITCH TYPE:

Snap Action

MECHANICAL LIFE:

150,000 cycles

WEIGHT:

0.10 lbs (0.05 kg)

PRESSURE RANGE:

LPF: 5 - 650 PSI (0.35 - 45 Bar)

MAXIMUM OVERPRESSURE:

375 PSI (26 Bar) for actuation up to 150 PSI (10 Bar)
750 PSI (52 Bar) for actuation from 150-650 PSI (10-45 Bar)

PROOF PRESSURE:

500 PSI (35 Bar)
800 PSI (55 Bar)

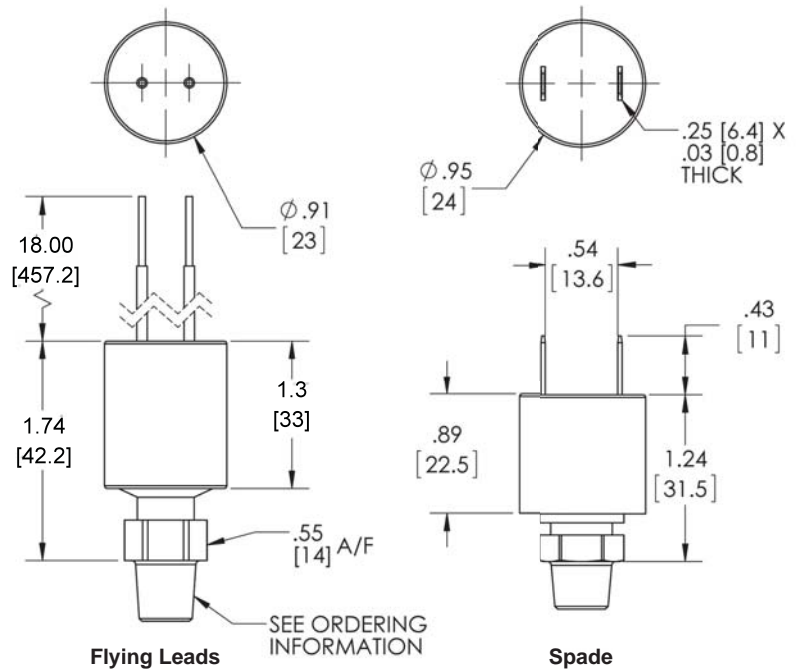
ORDERING INFORMATION

Minimum Order Required - Consult Factory

LPF	- 35R / 25F		- 4M	- A	- FL
Model	Rising Set Point	Falling Set Point	Port Size	Circuit	Terminal
LPF Factory Set	Specify Set Point 5 - 650 PSI (.35 - 45 Bar) R - PSI Rising BR - Bar Rising	Specify Set Point 5 - 650 PSI (.35 - 45 Bar) F - PSI Falling BF - Bar Falling	2M - 1/8 NPT* 4M - 1/4 NPT 2G - 1/8 BSPP 4G - 1/4 BSPP 4S - 7/16 X 20 SAE MALE 4SF - 7/16 X 20 SAE FEMALE W/Depressor Pin *Standard	A - SPST / NO B - SPST / NC	SP - 1/4" x 1/32" Spade FL - 18" Flying Leads FLL - Advise additional length of leads if required FLWTF - Weatherpack Tower Female FLWTM - Weatherpack Tower Male FLWSF - Weatherpack Shroud Female FLWSM - Weatherpack Shroud Male **** Call Factory for Shrink Wrap Options & Pricing

SPF Pressure Switch

ALL STAINLESS STEEL CONSTRUCTION



ELECTRICAL:

24V/125 VA, 120/240V/375 VA, 6A/36 VDC
Maximum Amperage @ 12 VDC - 13.5 Amp

WETTED MATERIAL:

Diaphragm: Stainless Steel
Port: Stainless Steel
Housing: Stainless Steel

PROTECTION:

IP68 except exposed terminals – IP00

REPEATABILITY:

± 3 PSI of set point

SWITCH TYPE:

Snap Action

MECHANICAL LIFE:

150,000 cycles

TEMPERATURE RANGE:

-22° to +180°F (-30° to +82°C)

PRESSURE RANGES:

For Set Points From:
5 - 700 psi (.35 - 48 Bar)
700 - 2000 psi (48 - 138 Bar)

MAXIMUM OVERPRESSURE:

1000 PSI (69 Bar) for set point pressures to 700 PSI (48 Bar)
2500 PSI (172 Bar) for set point pressures from 700 psi (48 Bar) to 2000 PSI (138 Bar)

WEIGHT:

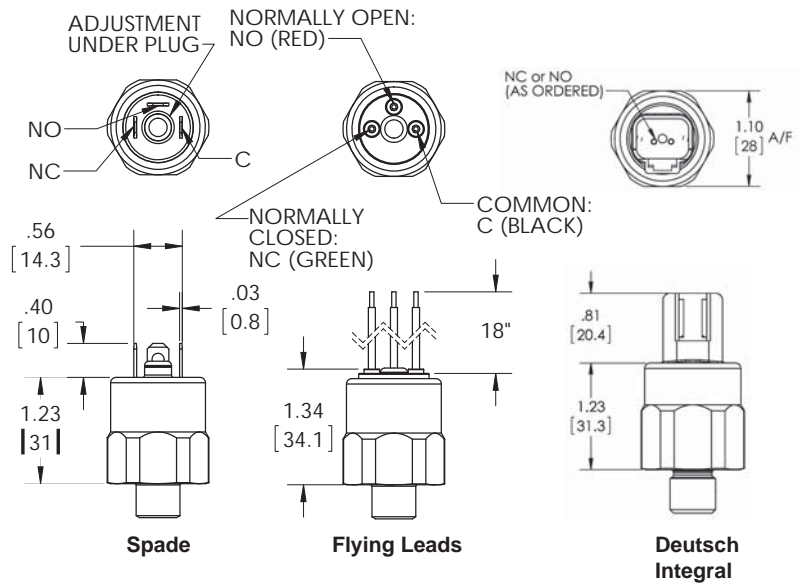
0.10 lbs (0.05 kg)

ORDERING INFORMATION

Minimum Order Required - Consult Factory

SPF	- 320R / 285F		- 4M	- A	- FL
Model	Rising Set Point	Falling Set Point	Port Size	Circuit	Terminal
SPF Factory Set	Specify Set Point 5 - 2000 PSI (.35 - 138 Bar) R - PSI Rising BR - Bar Rising	Specify Set Point 5 - 2000 PSI (.35 - 138 Bar) F - PSI Falling BF - Bar Falling	2M - 1/8 NPT* 4M - 1/4 NPT 2G - 1/8 BSPP 4G - 1/4 BSPP 4S - 7/16 X 20 SAE MALE *Standard All Others Special Order Only	A - SPST / NO B - SPST / NC	SP - 1/4" x 1/32" Spade FL - 18" Flying Leads FLL - Advise additional length of leads if required FLWTF - Weatherpack Tower Female FLWTM - Weatherpack Tower Male FLWSF - Weatherpack Shroud Female FLWSM - Weatherpack Shroud Male **** Call Factory for Shrink Wrap Options & Pricing

New Generation
High Impact Plastic Switch



Model	Adjustment Range		Avg. Differential	
	PSI	Bar	PSI	Bar
1	3 - 20	0.2 - 1.4	2 - 5	0.13 - 0.4
2	15 - 80	1.03 - 6	4 - 7	0.27 - 0.5
3	50 - 150	3.5 - 10	7 - 15	0.5 - 1.0

ELECTRICAL:

Standard: 5A, 125V/250VAC - U.L. Recognized*
5A, 12/24VDC - U.L. Recognized*
Option -7: 0.02A, 60VDC - U.L. Recognized*
Gold contacts may be required for less than 12 VDC and 20 milliamp

MANUFACTURER'S OTHER RATING:

5A @ 40VDC

WETTED MATERIAL:

Diaphragm: Buna-N Standard
(optional EPDM, KAPTON®, VITON®)
Housing: Glass Filled Nylon

PROTECTION:

Exposed Terminals – IP00
Flying Leads, M12, Deutsch Integral - IP69

REPEATABILITY:

± 2% of full set point range at 70°F (21°C)
Ambient Temperature

SWITCH TYPE:

Snap Action

MECHANICAL LIFE:

1,000,000 cycles

TEMPERATURE RANGE:

Buna – N: -15° to +230°F (-26° to 110°C)
EPDM: -10° to +250°F (-23° to 121°C)
KAPTON®: -40° to +230°F (-40° to 110°C)
VITON®: 0° to +302°F (-18° to 150°C)
(® Registered Trademark of DuPont)

MAXIMUM OVERPRESSURE:

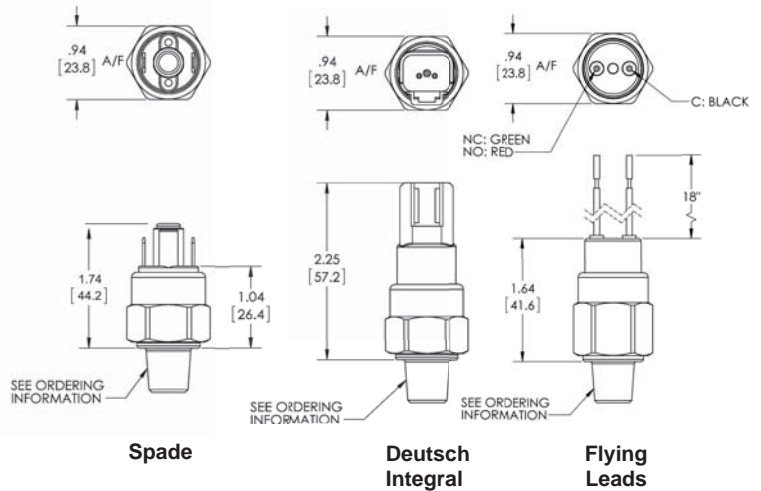
250 PSI (17 Bar)

WEIGHT:

0.08 lbs (0.04 kg)

ORDERING INFORMATION

HPA	- * 2	- * R	- 4M	- A	- FL	- * 1
Model	Set Point	Direction	Port Size	Circuit	Terminal	Options
HPA - Field Adjustable	See Above Adjustment Ranges	R - PSI Rising F - PSI Falling BR - Bar Rising BF - Bar Falling	2M - 1/8 NPT 4M - 1/4 NPT 2G - 1/8 BSPP 4G - 1/4 BSPP	A - SPST / NO B - SPST / NC C - SPDT	SP - 1/4" x 1/32" Spade TS - 6-32 Terminal Screws FL - 18" Flying Leads FLL - Advise additional length of leads if required FLWTF - Weatherpack Tower Female FLWTM - Weatherpack Tower Male FLWSF - Weatherpack Shroud Female FLWSM - Weatherpack Shroud Male DI - Deutsch Integral M12 - M12 X 1	* - Omit If Standard 1 - VITON® Diaphragm 2 - EPDM Diaphragm 3 - KAPTON® Diaphragm 6 - Oxygen Cleaned 7 - Gold Contacts UL - UL Recognized** **For Selected Models Only - Consult Factory 12 - WRAS Approved **** Call Factory for Shrink Wrap Options & Pricing
HPF - Factory Set	* Specify Set Point Required for model HPF	*Omit For Model HPA				



Model	Adjustment Range		Avg. Differential
	PSI	Bar	
1	2 - 20	0.14 - 1.4	Less than 10% of Actuation Point
2	15 - 100	1.03 - 6.9	
3	50 - 150	3.5 - 10	

ELECTRICAL:

100 VA Max Voltage 42 VDC
Gold contacts may be required for less than 12 VDC and 20 milliamp

WETTED MATERIAL:

Diaphragm: KAPTON®
(optional EPDM, VITON®, Buna-N)
Housing: Brass
(Optional Steel - Nickel Plated, 316 Stainless Steel)

PROTECTION:

Exposed Terminals - IP00
Flying Leads & Deutsch Integral - IP69

REPEATABILITY:

± 3% of full set point range at 70°F (21°C)
Ambient Temperature

SWITCH TYPE:

Creep Action

MECHANICAL LIFE:

1,000,000 cycles

TEMPERATURE RANGE:

Buna - N: -15° to +230°F (-26° to 110°C)
EPDM: -10° to +250°F (-23° to 121°C)
KAPTON®: -40° to +230°F (-40° to 110°C)
VITON®: 0° to +302°F (-18° to 150°C)
(® Registered Trademark of DuPont)

MAXIMUM OVERPRESSURE:

350 PSI (24 Bar)

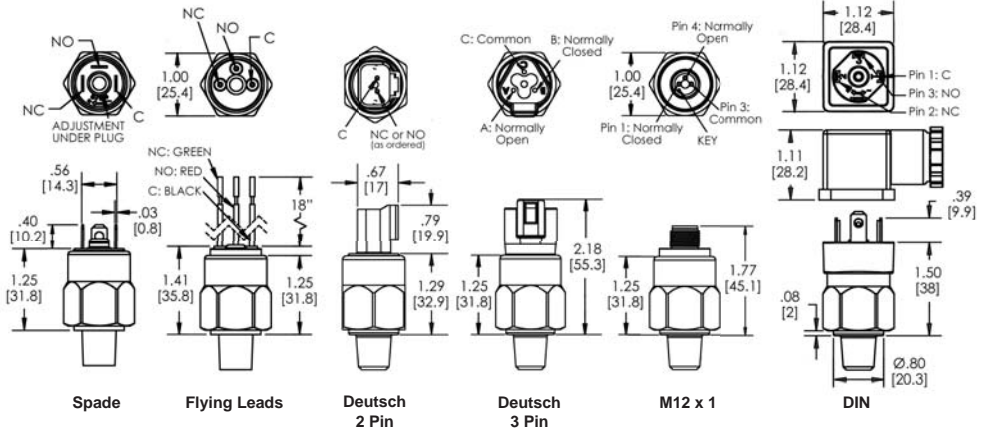
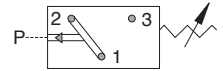
WEIGHT:

0.15 lbs (0.07 kg)

ORDERING INFORMATION

PMA	- * 2	- * R	- 4M	- A	- SP	- * 1
Model	Set Point	Direction	Port Size	Circuit	Terminal	Options
PMA - Field Adjustable PMF - Factory Set	See Above Adjustment Ranges * Model PMF Specify Set Point Required	R - PSI Rising F - PSI Falling BR - Bar Rising BF - Bar Falling *Omit For Model PMA	2M - 1/8 NPT 4M - 1/4 NPT 4MF - 1/4 NPTF (Male Dryseal thread) 2G - 1/8 BSPP 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS - 1/4 BSPP (no undercut) 4S - 7/16X20 SAE MALE 6S - 9/16X18 SAE MALE M10 - M10X1 * M12 - M12X1.5 * *Consult Factory for Specials	A - SPST / NO B - SPST / NC	SP - 1/4" x 1/32" Spade TS - 6-32 Terminal Screws FL - 18" Flying Leads FLL - Advise additional length of leads if required FLWTF - Weatherpack Tower Female FLWTM - Weatherpack Tower Male FLWSF - Weatherpack Shroud Female FLWSM - Weatherpack Shroud Male DI - Deutsch Integral	* - Omit If Standard 1 - VITON® Diaphragm 2 - EPDM Diaphragm 14 - Buna-N Diaphragm 4 - 316 SS Housing 4A - Steel - Nickel Plated 5 - Spiral Restrictor 6 - Oxygen Cleaned 7 - Gold Contacts **** Call Factory for Shrink Wrap Options & Pricing

APA/APF Adjustable Low Pressure Switches



Model	Adjustment Range		Avg. Differential		Model	Adjustment Range		Avg. Differential	
	PSI	Bar	PSI	Bar		PSI	Bar	PSI	Bar
1	3 - 15	0.2 - 1.04	2 - 5	0.13 - 0.4	2	15 - 75	1.03 - 5.2	4 - 7	0.27 - 0.5
1A	5 - 30	0.3 - 2.1	3 - 7	0.21 - 0.5	3	50 - 150	3.5 - 10	7 - 15	0.5 - 1.0

ELECTRICAL:

Standard: 5A, 125V/250VAC - U.L. Recognized*
 5A, 12/24VDC - U.L. Recognized*
 Option -7: 0.02A, 60VDC - U.L. Recognized*
 Gold contacts may be required for less than 12 VDC and 20 milliamps

MANUFACTURER'S OTHER RATING:

5A @ 40VDC

WETTED MATERIAL:

Diaphragm: Buna-N (standard)
 (optional EPDM, KAPTON®, VITON®)
 Housing: Brass (standard)
 (optional: 316 Stainless Steel or Nickel Plated Steel)

PROTECTION:

Exposed Terminals – IP00
 DIN HC - IP65
 Flying Leads, M12, Deutsch Integral - IP69

REPEATABILITY:

± 2% of full set point range at 70°F (21°C)
 Ambient Temperature

SWITCH TYPE:

Snap Action

MECHANICAL LIFE:

1,000,000 cycles

TEMPERATURE RANGE:

Buna – N: -15° to +230°F (-26° to 110°C)
 EPDM: -10° to +250°F (-23° to 121°C)
 KAPTON®: -40° to +230°F (-40° to 110°C)
 VITON®: 0° to +302°F (-18° to 150°C)
 (® Registered Trademark of DuPont)

MAXIMUM OVERPRESSURE:

350 PSI (24 Bar)

WEIGHT:

0.15 LBS (0.07 kg)

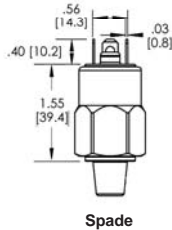
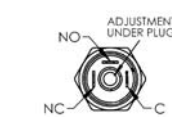
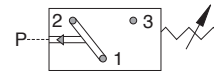
ORDERING INFORMATION

APA	- * 2	- * R	- 4M	- A	- FL	- * 1
Model	Set Point	Direction	Port Size	Circuit	Terminal	Options
APA - Field Adjustable	See Above Adjustment Ranges	R - PSI Rising F - PSI Falling BR - Bar Rising BF - Bar Falling	2M - 1/8 NPT 4M - 1/4 NPT 4MF - 1/4 NPTF (Male Dryseal thread) 2G - 1/8 BSPP 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS - 1/4 BSPP (no undercut) 4S - 7/16X20 SAE MALE 4SW - 7/16X20 SAE Swivel 6S - 9/16X18 SAE MALE M10 - M10X1* M12 - M12X1.5 *	A - SPST / NO B - SPST / NC C - SPDT	SP - 1/4" x 1/32" Spade TS - 6-32 Terminal Screws FL - 18" Flying Leads FLL - Advise additional length of leads if required FLWTF - Weatherpack Tower Female FLWTM - Weatherpack Tower Male FLWSF - Weatherpack Shroud Female FLWSM - Weatherpack Shroud Male H - DIN 43650A Male Half Only HC - DIN 43650A Cable Clamp HN - DIN 43650A 1/2 Conduit (female) HCC - XXX (Specify Length in Inches) HC11A - DIN Light NO/NC 110V HC11B - DIN Light NO/NC 12VDC HC11C - DIN Light NO/NC 24VDC HC11D - Indicating Light Green/Red (can only be used with SPDT Circuit) DI - Deutsch Integral M12 - M12 X 1 PP - Packard Connector	* - Omit If Standard 1 - VITON® Diaphragm 2 - EPDM Diaphragm 3 - KAPTON® Diaphragm 4 - 316 SS Housing 4A - Steel - Nickel Plated 5 - Spiral Restrictor 6 - Oxygen Cleaned 7 - Gold Contacts UL - UL Recognized** **For Selected Models Only - Consult Factory 12 - WRAS Approved **** Call Factory for Shrink Wrap Options & Pricing
APF - Factory Set	* Model APF Specify Set Point Required	*Omit For Model APA	*Consult Factory for Specials			

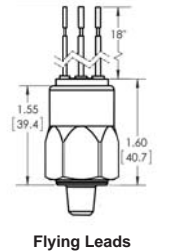
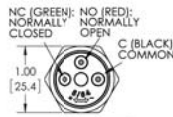


Sensors Inc.®

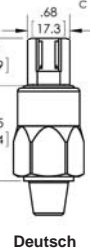
BPA/BPF Adjustable High Pressure Switches



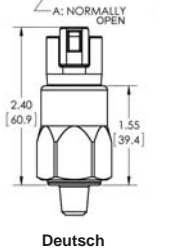
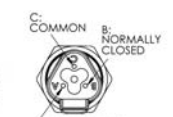
Spade



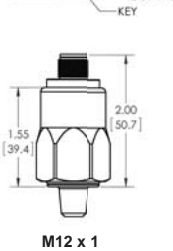
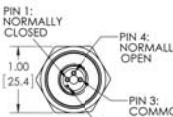
Flying Leads



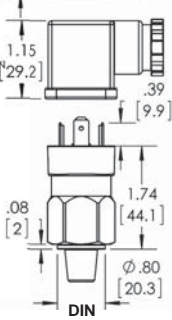
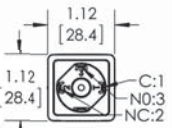
Deutsch 2 Pin



Deutsch 3 Pin



M12 x 1



DIN

Model	Adjustment Range		Avg. Differential		Model	Adjustment Range		Avg. Differential	
	PSI	Bar	PSI	Bar		PSI	Bar	PSI	Bar
1	10 - 85	.35 - 5.8	1.0 - 10	0.07 - 0.7	3	500 - 2500	35 - 172	70 - 300	5 - 21
1A	65 - 300	4.5 - 21	8 - 30	0.55 - 2.1	4	1000 - 6000	69 - 414	150 - 600	10 - 41
2	125 - 600	8.6 - 41	20 - 80	1.4 - 5.5	5	500 - 3500	35 - 241	75 - 300	5 - 21

ELECTRICAL:
Standard: 5A, 125V/250VAC - U.L. Recognized*
5A, 12/24VDC - U.L. Recognized*
Option -7: 0.02A, 60VDC - U.L. Recognized*
Gold contacts may be required for less than 12 VDC and 20 milliamps

MANUFACTURER'S OTHER RATING:
5A @ 40VDC

WETTED MATERIAL:
Diaphragm: Buna-N (Standard)
(optional EPDM, KAPTON®, VITON®, Low Temp Nitrile)
Housing: Zinc-Nickel Plated Steel
(optional: 316 Stainless Steel or Nickel Plated Steel)

PROTECTION:
Exposed Terminals – IP00
DIN HC - IP65
Flying Leads, M12, Deutsch Integral - IP69

REPEATABILITY:
± 2% of full set point range at 70°F (21°C)
Ambient Temperature

SWITCH TYPE:
Snap Action

MECHANICAL LIFE:
1,000,000 cycles

TEMPERATURE RANGE:
Buna - N: -15° to +230°F (-26° to 110°C)
EPDM: -10° to +250°F (-23° to 121°C)
KAPTON®: -40° to +230°F (-40° to 110°C)
VITON®: 0° to +302°F (-18° to 150°C)
(® Registered Trademark of DuPont)
Low Temp Nitrile: -40° to 230°F (-40° to 110°C)

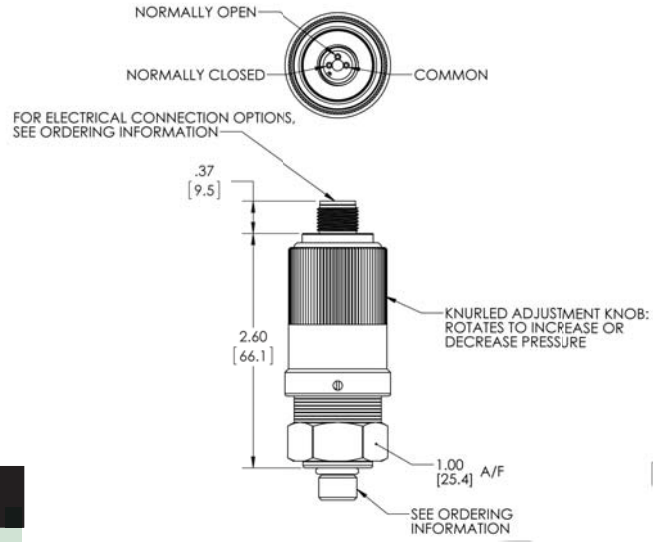
MAXIMUM OVERPRESSURE:
9000 PSI (620 Bar) - Static
7500 PSI (517 Bar) - Dynamic

WEIGHT:
Approx. 0.2 lbs (0.09 kg)

ORDERING INFORMATION

BPA	- * 2	- * R	- 4M	- C	- H	- * 1
Model	Set Point	Direction	Port Size	Circuit	Terminal	Options
BPA Field Adjustable	See Above Adjustment Ranges	R - PSI Rising F - PSI Falling BR - Bar Rising BF - Bar Falling	2M - 1/8 NPT 4M - 1/4 NPT 4MF - 1/4 NPTF (Male Dryseal thread)	A - SPST / NO B - SPST / NC C - SPDT	SP - 1/4" x 1/32" Spade TS - 6-32 Terminal Screws FL - 18" Flying Leads FLL - Advise additional length of leads if required FLWTF - Weatherpack Tower Female FLWTM - Weatherpack Tower Male FLWSF - Weatherpack Shroud Female FLWSM - Weatherpack Shroud Male H - DIN 43650A Male Half Only HC - DIN 43650A Cable Clamp HN - DIN 43650A 1/2 Conduit (female) HCC - XXX (Specify Length in Inches) HC11A - DIN Light NO/NC 110V HC11B - DIN Light NO/NC 12VDC HC11C - DIN Light NO/NC 24VDC HC11D - Indicating Light Green/Red (can only be used with SPDT Circuit) DI - Deutsch Integral M12 - M12 X 1 PP - Packard Connector	* - Omit If Standard 1 - VITON® Diaphragm 2 - EPDM Diaphragm 3 - KAPTON® Diaphragm * * For Model Ranges 1,1A & 2 Only 15 - Low Temp Nitrile Diaphragm 4 - 316 SS Housing 4A - Steel -Nickel Plated 5 - Spiral Restrictor 6 - Oxygen Cleaned 7 - Gold Contacts UL - UL Recognized** **For Selected Models Only - Consult Factory **** Call Factory for Shrink Wrap Options & Pricing
BPF Factory Set	*Model BPF Specify Set Point Required ** For Set points below 10 psi Consult Factory	*Omit For Model BPA	2G - 1/8 BSPP 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS - 1/4 BSPP (no undercut) 4S - 7/16X20 SAE MALE 4SW - 7/16X20 SAE Swivel 6S - 9/16X18 SAE MALE M10 - M10X1* M12 - M12X1.5* *Consult Factory for Specials.			

BMA/BMF Pressure Switch Hand Adjustable



Model	Adjustment Range		Avg. Differential		
	PSI	Bar	PSI	Bar	
1	10 - 435	0.7 - 30			Diaphragm
2	500 - 5500	35 - 379	Less than 10% of Actuation Point		Piston
3	5000 - 7500	345 - 517		Piston	
4	1500 - 7500	103 - 517		Piston	

ELECTRICAL:

Standard: 10A, 125/250VAC - U.L. Recognized
10A, 12/24VDC - U.L. Recognized
Option -7: 0.1A, 125/250VAC, 30 VDC - U.L. Recognized
-8: 16 amp, 125/250 AC U.L. Recognized
Gold contacts may be required for less than 12 VDC and 20 milliamps

WETTED MATERIAL:

Diaphragm/Seal: Buna-N (Standard)
(optional: EPDM, VITON®, Low Temp Nitrile)
Piston: Steel (For High Pressure Ranges)
Housing: Brass (standard)
(optional: 316 Stainless Steel)

PROTECTION:

Exposed Terminals – IP00
DIN HC - IP65
Flying Leads, M12, & Deutsch Integral - IP69

REPEATABILITY:

± 2% of full set point range at 70°F (21°C)
Ambient Temperature

SWITCH TYPE:

Snap Action

MECHANICAL LIFE:

1,000,000 cycles

TEMPERATURE RANGE:

Buna - N: -15° to +230°F (-26° to 110°C)
EPDM: -10° to +250°F (-23° to 121°C)
VITON®: 0° to +302°F (-18° to 150°C)
(® Registered Trademark of DuPont)
Low Temp Nitrile: -40° to 230°F
(-40° to 110°C)

MAXIMUM OVERPRESSURE:

25,000 PSI (1725 Bar)

WEIGHT:

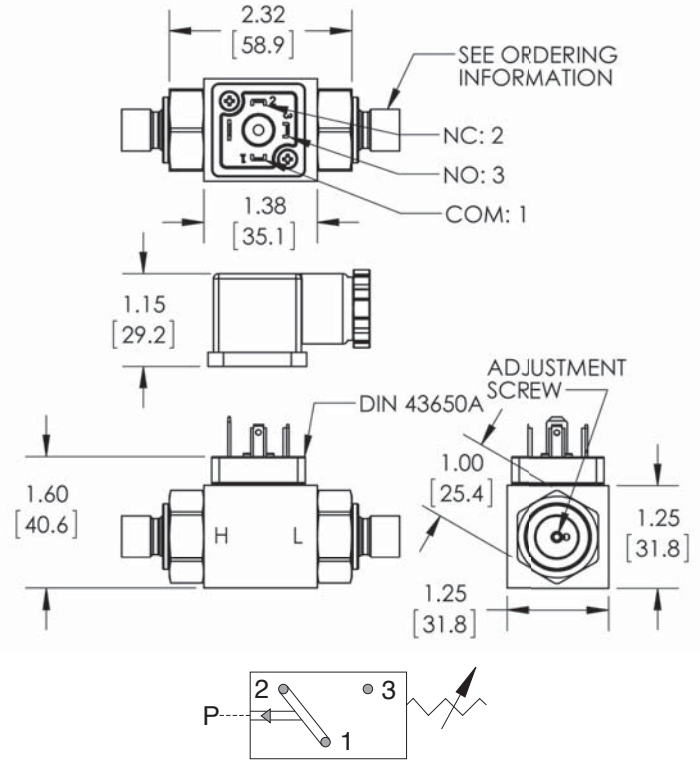
0.4 lbs (0.16 kg)

Please note: Factory Set Switches (Model BMF) are permanently set and are non-adjustable.

ORDERING INFORMATION

BMA	- * 2	- * R	- 4M	- C	- H	- * 1
Model	Set Point	Direction	Port Size	Circuit	Terminal	Options
BMA - Field Adjustable	See Above Adjustment Ranges	R - Rising F - Falling BR - Bar Rising BF - Bar Falling	2M - 1/8 NPT 4M - 1/4 NPT 4MF - 1/4 NPTF (Male Dryseal thread) 2G - 1/8 BSPP 4F - 1/4" NPT Female 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS - 1/4 BSPP (no undercut) 4S - 7/16X20 SAE MALE 4SW - 7/16X20 SAE Swivel 6S - 9/16X18 SAE MALE M10 - M10X1 * M12 - M12X1.5 *	A - SPST / NO B - SPST / NC C - SPDT	SP - 1/4" x 1/32" Spade TS - 6-32 Terminal Screws FL - 18" Flying Leads FLL - Advise additional length of leads if required FLWTF - Weatherpack Tower Female FLWTM - Weatherpack Tower Male FLWSF - Weatherpack Shroud Female FLWSM - Weatherpack Shroud Male H - DIN 43650A Male Half Only HC - DIN 43650A Cable Clamp HN - DIN 43650A 1/2 Conduit (female) HCC - XXX (Specify Length in Inches) HC11A - DIN Light NO/NC 110V HC11B - DIN Light NO/NC 12VDC HC11C - DIN Light NO/NC 24VDC HC11D - Indicating Light Green/Red (can only be used with SPDT Circuit) DI - Deutsch Integral (2 pin only) M12 - M12 X 1 * (up to 5 amp rating)	* - Omit If Standard 1 - VITON® Diaphragm/ Seal 2 - EPDM Diaphragm/ Seal 15 - Low Temp Nitrile Diaphragm/ Seal 4 - 316 SS Housing 5 - Spiral Restrictor 6 - Oxygen Cleaned 7 - Gold Contacts 8 - 16 Amp **** Call Factory for Shrink Wrap Options & Pricing
BMF - Factory Set	Model BMF Specify Set Point Required	*Omit For Model BMA	* Consult Factory for Specials.			

FDA/FDF Differential Switch



Model	Adjustment Range		Avg. Differential	
	PSI	Bar	PSI	Bar
1	5 - 25	0.34 - 1.7	3 - 8	0.2 - 0.55
2	20 - 45	1.4 - 3	5 - 15	0.35 - 1
3	35 - 75	2.4 - 5.2	10 - 20	0.7 - 1.4

ELECTRICAL:

10 AMP - 12/24 VDC - 125/250 VAC
Gold contacts may be required for less than 12 VDC and 20 milliamp
SPDT - Standard Circuit

WETTED MATERIAL:

Diaphragm: Buna-N (standard)
(optional EPDM and VITON®)
Ports: Brass (standard)

HOUSING:

Aluminum AL2024 Anodized

PROTECTION:

IP65 except exposed terminals – IP00

REPEATABILITY:

± 2% of full set point range at 70°F (21°C)
Ambient Temperature

SWITCH TYPE:

Snap Action

MECHANICAL LIFE:

1,000,000 cycles

TEMPERATURE RANGE:

Buna -N: -15° to +230°F (-26° to 110°C)
EPDM: -10° to +250°F (-23° to 121°C)
VITON®: 0° to +302°F (-18° to 150°C)
(® Registered Trademark of DuPont)

MAXIMUM OVERPRESSURE:

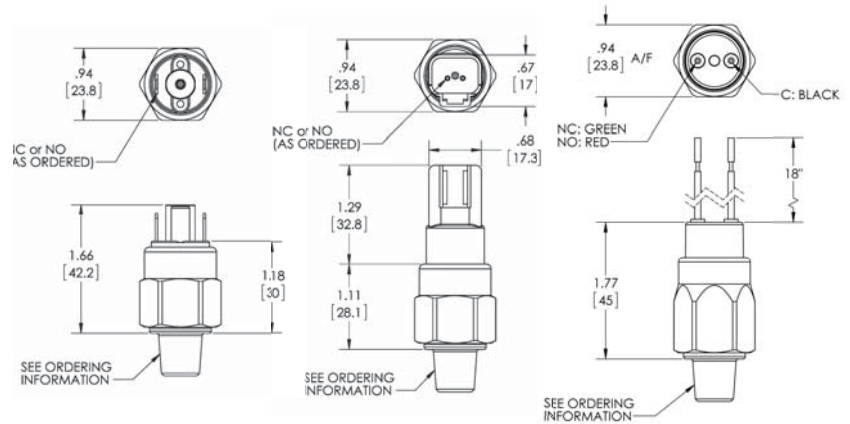
500 PSI (35 Bar)

WEIGHT:

0.40 LBS (0.18 kg)

ORDERING INFORMATION

FDA	- *1	- 4M / 4M		- C	- HC	- *1
Model	Set Point	Port Size		Circuit	Terminal	Options
FDA - Field Adjustable	See Above Adjustment Ranges	Hi Port	Low Port	C - Circuit	H - DIN 43650A Male Half Only HC - DIN 43650A Cable Clamp HN - DIN 43650A 1/2 Conduit (female) HCC - XXX (Specify Length in Inches) HC11A - DIN Light NO/NC 110V HC11B - DIN Light NO/NC 12VDC HC11C - DIN Light NO/NC 24VDC HC11D - Indicating Light Green/Red	* - Omit If Standard 1 - VITON® Diaphragm 2 - EPDM Diaphragm 5 - Spiral Restrictor 6 - Oxygen Cleaned 7 - Gold Contacts
FDF - Factory Set	*Model FDF Specify Set Point Required	4M - 1/4 NPT MALE 4G - 1/4 BSPP MALE 4S - 7/16X20 SAE MALE	4M - 1/4 NPT MALE 4G - 1/4 BSPP MALE			



Spade

Deutsch Integral

Flying Leads



Model	Adjustment Range		Avg. Differential
	PSI	Bar	
1	1.5 - 30	0.10 - 2.0	Less than 10% of Actuation Point
1A	14.5 - 200	1.0 - 14	
2	125 - 600	8.6 - 41	
3	300 - 2500	21 - 172	
4	3000 - 6000	207 - 414	
5	500 - 3500	35 - 241	

ELECTRICAL:

100 VA Max Voltage 42 VDC
Gold contacts may be required for less than 12 VDC and 20 milliamp

WETTED MATERIAL:

Diaphragm: Buna-N (Standard)
(optional EPDM, KAPTON®, VITON®
Low Temperature Nitrile)
Housing: Zinc-Nickel Plated Steel
(optional: 316 Stainless Steel or
Nickel Plated Steel)

PROTECTION:

Exposed Terminals - IP00
Flying Leads & Deutsch Integral - IP69

REPEATABILITY:

± 3% of full set point range at 70°F (21°C)
Ambient Temperature

SWITCH TYPE:

Creep Action

MECHANICAL LIFE:

1,000,000 cycles

TEMPERATURE RANGE:

Buna - N: -15° to +230°F (-26° to 110°C)
EPDM: -10° to +250°F (-23° to 121°C)
KAPTON®: -40° to +230°F (-40° to 110°C)
VITON®: 0° to +302°F (-18° to 150°C)
(® Registered Trademark of DuPont)
Low Temp Nitrile: -40° to +230°F (-40° to 110°C)

MAXIMUM OVERPRESSURE:

9000 PSI (620 Bar)

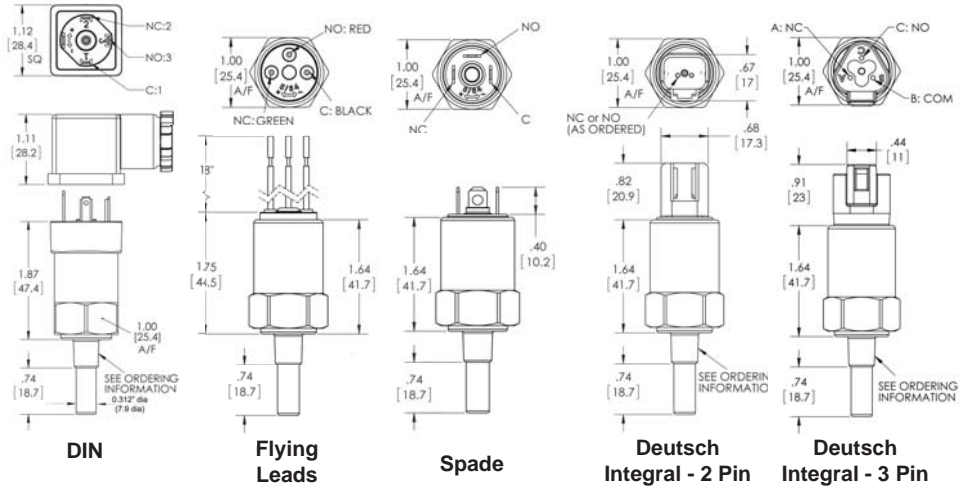
WEIGHT:

0.15 lbs (0.07 kg)

ORDERING INFORMATION

EPA	- * 2	- * R	- 4M	- A	- FL	- * 1
Model	Set Point	Direction	Port Size	Circuit	Terminal	Options
EPA - Field Adjustable EPF - Factory Set	See Above Adjustment Ranges *Model EPF Specify Set Point Required	R - PSI Rising F - PSI Falling BR - Bar Rising BF - Bar Falling *Omit for Model EPA	2M - 1/8 NPT 4M - 1/4 NPT 2G - 1/8 BSPP 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS - 1/4 BSPP (no undercut) 4S - 7/16X20 SAE MALE 6S - 9/16X18 SAE MALE M10 - M10X1 * M12 - M12X1.5 * *Consult Factory for Specials.	A - SPST / NO B - SPST / NC	SP - 1/4 x 1/32 Spade TS - 6 -32 Terminal Screws FL - 18" Flying Leads FLL - Advise additional length of leads if required FLWTF - Weatherpack Tower Female FLWTM - Weatherpack Tower Male FLWSF - Weatherpack Shroud Female FLWSM - Weatherpack Shroud Male DI - Deutsch Integral	* - Omit If Standard 1 - VITON® Diaphragm 2 - EPDM Diaphragm 3 - KAPTON® Diaphragm * * Ranges 1A & 2 Only 15 - Low Temp Nitrile Dia 4 - 316 SS Housing 4A - Steel - Nickel Plated 5 - Spiral Restrictor 6 - Oxygen Cleaned 7 - Gold Contacts **** Call Factory for Shrink Wrap Options & Pricing

TAS/TFS Temperature Switch Fluid Expansion



(Probe length varies per port, .74" is standard for 1/8" npt)

The **TAS/TFS** is a temperature switch for protection of all types of engines, pumps, compressors, gear boxes, hydraulic reservoirs, marine and industrial power plants. It provides fast accurate temperature response through a brass probe that protrudes into the application.

ELECTRICAL:

Standard: 5A, 125/250 VAC - UL Recognized
5A, 12/24 VDC - UL Recognized
Option -7: 0.02A, 60 VDC - UL Recognized
Gold contacts may be required for less than 12 VDC and 20 milliamp
Electrical Ratings - Other
3 AMP - Up to 30 VDC

CIRCUIT:

SPST - Normally Open
SPST - Normally Closed
SPDT

PROTECTION:

Exposed Terminals – IP00
DIN HC - IP65
Flying Leads & Deutsch Integral - IP69

MAX WORKING PRESSURE:

750 PSI (52 BAR)

HOUSING MATERIAL:

Brass

TOLERANCE:

± 6°F (3°C)

TEMPERATURE SET POINT RANGE:

40°F - 300°F (5°C - 150°C)

DIFFERENTIAL:

8°F - 16°F

MAXIMUM OPERATING TEMPERATURE:

325°F (163°C)

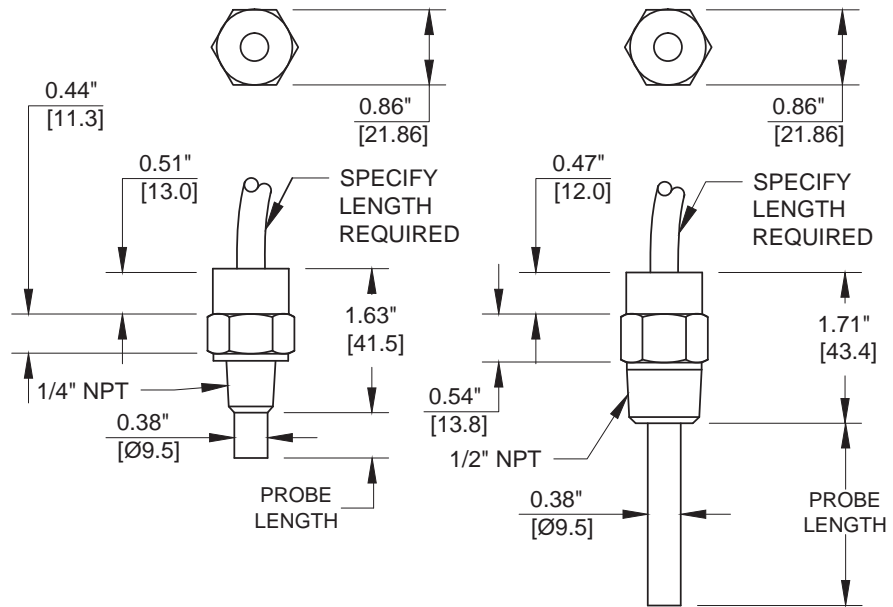
MAX OVERLOAD:

50°F (28°C) Above set point

ORDERING INFORMATION

TFS	- 120F *	- R*	- 4M	- A	- SP	- 7 *
Model	Temperature Set Point	Direction	Port Size	Circuit	Terminal	Options
TAS Field Adjustable	* Omit for TAS Adjustable Model	* Omit for TAS Adjustable Model	2M - 1/8 NPT 4M - 1/4 NPT 6M - 3/8 NPT 8M - 1/2 NPT	A - SPST / NO B - SPST / NC C - SPDT	SP - 1/4" x 1/32" Spade TS - 6-32 Terminal Screws FL - Flying Leads 18" FLL - Advise additional length of leads if required	* Omit for Standard
TFS Factory Set	Specify Set Point Required F or C 40°F - 300°F (5° - 150°C)	R - Temperature Rising F - Temperature Falling	6S - 9/16X18 SAE MALE 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS - 1/4 BSPP (no undercut) 8S - 3/4-16 SAE MALE		FLWTM - Weatherpack Tower Male FLWSF - Weatherpack Shroud Female FLWSM - Weatherpack Shroud Male H - DIN43650A Male Half Only HC - DIN43650A Cable Clamp HN - DIN43650A 1/2" Conduit (female) HCC - 36" Cable HC11A - DIN Light NO/NC 110V HC11B - DIN Light NO/NC 12VDC HC11C - DIN Light NO/NC 24VDC HC11D - Indicating Light Green/Red (can only be used with SPDT Circuit) DI - Deutsch Integral (2 pin and 3 pin) M12 - M12 X 1	7 - Gold Contacts ****Call Factory for Shrink Wrap Options & Pricing

TBM Temperature Switch Bi-Metal



The **TBM** series is a Bi-Metal temperature alarm switch with a factory set point. The switch is used for protection of all types of internal combustion engines, pumps, compressors, gear boxes, hydraulic reservoirs, marine and industrial power plants.

ELECTRICAL:

8A - 250 VAC (Resistive)
6A - 24 VDC (Resistive)

CIRCUIT:

SPST - NO
SPST - NC

HOUSING MATERIAL:

Brass

PROTECTION:

IP67

SETTING TOLERANCE:

± 7°F (± 4.5°C)

MAX PROBE PRESSURE:

1500 PSI (103 Bar)

PROBE LENGTH:

See Ordering Information

TEMPERATURE RANGE:

75° - 290°F (24° - 143°C)

MAX WORKING TEMP:

400°F (204°C)

TEMP DIFFERENTIAL:

27°F (15°C) AVERAGE

WEIGHT:

0.70 lbs (0.32 kg)

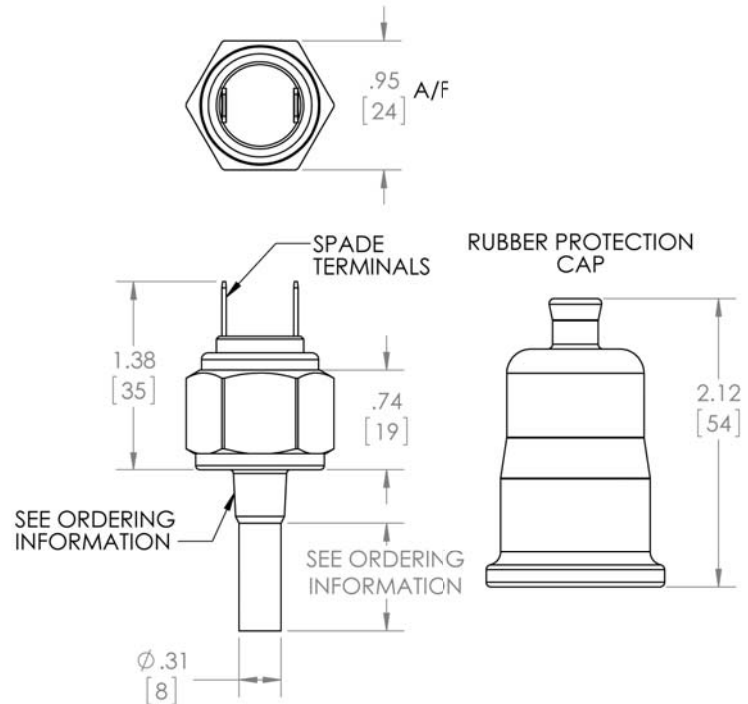
ORDERING INFORMATION

Minimum Order Required - Consult Factory

TBM	- 100F	- R	- 8M	- B	- 108	- A
Model	Temperature Set Point	Direction	Port Size	Circuit	Terminal	Probe Length
TBM	Specify Set Point Required F or C 75° to 290°F (24° to 143°C)	R - Temperature Rising F - Temperature Falling	2M - 1/8 NPT 4M - 1/4 NPT 6M - 3/8 NPT 8M - 1/2 NPT 8S - 3/4-16 SAE	A - SPST / NO B - SPST / NC	Cable Specify Length Required in Inches Minimum 36"	A - 1/2" B - 1" C - 2"

TCM Temperature Switch

Bi-Metal



The **TCM** series is a Bi-Metal temperature switch with a factory set point. The switch is used for protection of all types of internal combustion engines, pumps, compressors, gear boxes, hydraulic reservoirs, marine and industrial power plants.

ELECTRICAL:

8A - 250 VAC (Resistive)
6A - 24 VDC (Resistive)

CIRCUIT:

SPST - NO
SPST - NC

HOUSING MATERIAL:

Brass

PROTECTION:

IP00 - Without Rubber Cap
IP54 - With Rubber Cap

SETTING TOLERANCE:

$\pm 6.5^\circ\text{F}$ ($\pm 3.5^\circ\text{C}$)

MAX PROBE PRESSURE:

1500 PSI (103 Bar)

PROBE LENGTH:

See Ordering Information

TEMPERATURE RANGE:

$75^\circ - 290^\circ\text{F}$ ($24^\circ - 143^\circ\text{C}$)

MAX WORKING TEMP:

400°F (204°C)

TEMP DIFFERENTIAL:

27°F (15°C) AVERAGE

WEIGHT:

0.65 lbs (0.29 kg)

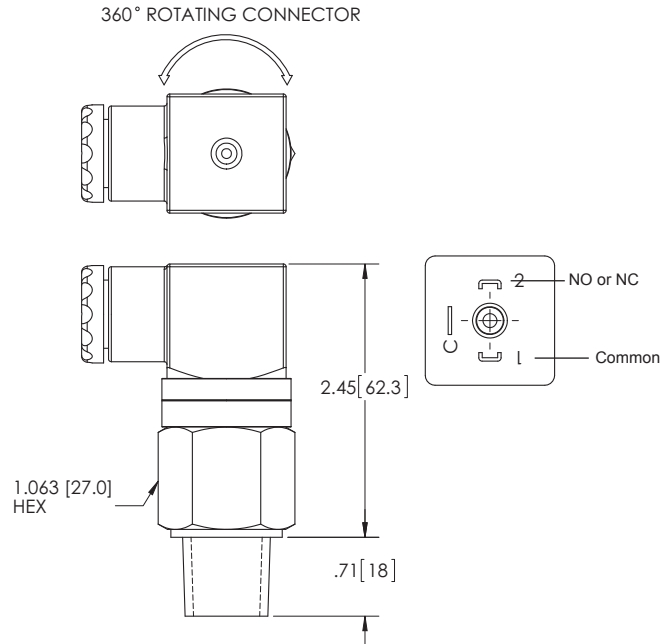
ORDERING INFORMATION

Minimum Order Required - Consult Factory

TCM	- 100F	- R	- 2M	- A	- SP	- A
Model	Temperature Set Point	Direction	Port Size	Circuit	Terminal	Probe Length
TCM	Specify Set Point Required F or C 75° to 290°F (24° to 143°C)	R - Temperature Rising F - Temperature Falling	2M - 1/8 NPT 4M - 1/4 NPT 6M - 3/8 NPT 8M - 1/2 NPT	A - SPST / NO B - SPST / NC	SP - Spade (Includes Rubber Protection Cap) FL - 18" Flying Leads DI - Integral Deustch	A - 1/2" B - 1" C - 2"

TAF Temperature Switch

Bi-Metal



The **TAF** is a factory set temperature alarm switch for protection of all types of internal combustion engines, pumps, compressors, gear boxes, and hydraulic reservoirs.

ELECTRICAL:

10A - 250 VAC
5 A - 24 VDC, 10A -12 VDC

CIRCUIT:

SPST - Normally Open
SPST - Normally Closed

HOUSING MATERIAL:

Brass

PROTECTION:

DIN 43650A - IP65

TEMP DIFFERENTIAL:

25°F (14°/16°C) AVERAGE

MAX WORKING PRESSURE:

350 PSI (25 Bar)

TEMPERATURE RANGE:

75° - 290°F (24° - 143°C)

TEMP. EXPOSURE LIMIT

300°F (149°C)

WEIGHT:

0.3 lb (0.14 kg)

ORDERING INFORMATION

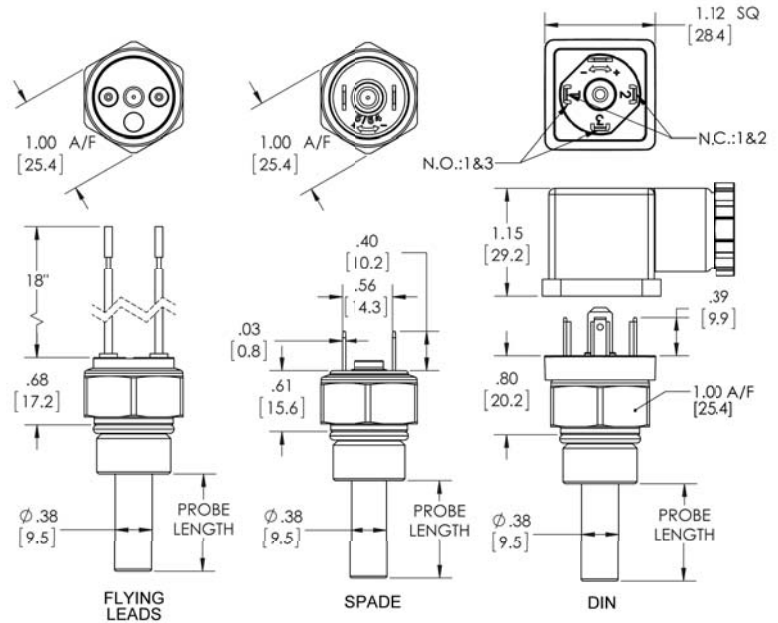
Minimum Order Required - Consult Factory

TAF	- 100F	- R	- 4M	- A	- H
Model	Temperature Set Point	Direction	Port Size	Circuit	Terminal
TAF Factory Set	Specify Set Point Required F or C 75° to 290°F (24° to 143°C)	R - Temp Rising F - Temp Falling	4M - 1/4 NPT 6M - 3/8 NPT 8M - 1/2 NPT	A - SPST / NO B - SPST / NC	H - DIN43650A Male Half Only HC - DIN43650A Cable Clamp HN - DIN43650A 1/2" Conduit (female) HCC - 36" Cable HC11A - DIN Light NO/NC 110V HC11B - DIN Light NO/NC 12VDC HC11C - DIN Light NO/NC 24VDC HC11D - Indicating Light Green/Red

MTB Temperature Switch

Bi-Metal

Direct Action - Gold Diffused Fine Silver Contacts



The **MTB** series is a Bi-Metal temperature switch with a factory set point. The switch is used for protection of all types of internal combustion engines, pumps, compressors, gear boxes, hydraulic reservoirs, marine and industrial power plants and fire suppression systems

ELECTRICAL:

6 Amp @ 120 VAC (Resistive)
5 Amp @ 120 VAC (Inductive)

MANUFACTURER'S OTHER RATING:

6A @ 24 VDC (Resistive)
5A @ 24 VDC (Inductive)

CIRCUIT:

SPST - NO
SPST - NC

HOUSING MATERIAL:

Brass
Optional Stainless Steel

PROTECTION:

IP00 - Spade termination
IP69 - Flying Lead

SETTING TOLERANCE:

± 5°F (±2.8°C)

MAX PROBE PRESSURE:

5000 PSI (345 Bar)

PROBE LENGTH:

See Ordering Information

TEMPERATURE RANGE:

40° - 300°F (4° - 150°C)

MAX WORKING TEMP:

325°F (163°C)

TEMP DIFFERENTIAL:

6.5°F (3°C) (Approximate)

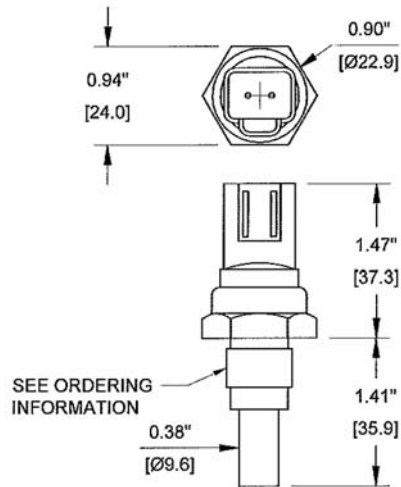
WEIGHT:

0.10 lbs (0.05kg)

ORDERING INFORMATION

MTB	- 100F	- R	- 4M	- A	- SP	- A	- 4 *
Model	Temperature Set Point	Direction	Port Size	Circuit	Terminal	Probe Length	Options
MTB	Specify Set Point Required F or C 40° to 300°F (5° to 150°C)	R - Temperature Rising F - Temperature Falling	4M - 1/4 NPT 6M - 3/8 NPT 8M - 1/2 NPT 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS - 1/4 BSPP (no undercut) 8S - 3/4-16 SAE MALE M12 - M12 X 1.5 M16 - M16 X 1.5	A - SPST NO B - SPST NC	SP - 1/4" x 1/32" Spade TS - 6-32 Terminal Screws FL - Flying Leads 18" FLL - Advise additional length of leads if required FLWTF - Weatherpack Tower Female FLWTM - Weatherpack Tower Male FLWSF - Weatherpack Shroud Female FLWSM - Weatherpack Shroud Male FLDR - Flying Leads 18" with 2 pin deutsch receptacle C - Cable (advise length required) H - DIN43650A Male Half Only HC - DIN43650A Cable Clamp HN - DIN43650A 1/2" Conduit (female) DI - Deutsch Integral (2 Pin Only)	A - 1/2" B - 1" C - 2" D - 1-1/2" ***** Call Factory for Custom Probe Lengths	* Omit for Standard 4 - Stainless Steel IG - Internal Ground ***** Call Factory for Shrink Wrap Options & Pricing

TSS Temperature Sender



Model **TSS** Temperature Sender is ideally suited for use in engines, pumps, compressors, gearboxes and other applications where resistance to the elements is the primary consideration. It is used in conjunction with either a temperature gauge or an ECU (Engine Control Unit) to sense the temperature of your application. The TSS provides fast, accurate temperature response through a thermistor that is located in the tip of the probe protruding from the main body of the unit. A reliable electrical connection, Deutsch DT 2-way connector is rated at IP69.

ELECTRICAL:
5V Nominal

PROTECTION:
IP69 (When connected to mating plug)

ENVIRONMENT TEMPERATURE:
-40°F to +257°F (-40° to +125°C)

INSULATION TYPE:
Isolated Ground

RESISTANCE TOLERANCE:
+/- 10%

WEIGHT:
.08 lbs (0.03 kg)

BODY MATERIAL:
Brass

TYPE	TEMPERATURE °F (°C)	77 (25)	104 (40)	122 (50)	140 (60)	158 (70)	176 (80)	194 (90)	212 (100)	230 (110)
A	RESISTANCE OHMS	500	282.1	197.6	140	101.5	74.6	55.6	41.9	32
B	RESISTANCE OHMS	2000	1070	722.6	497.6	349	248.8	179.9	131.8	98
C	RESISTANCE OHMS	300	-	121	87.4	64.4	48.2	36.7	28.3	-
D	RESISTANCE OHMS	8000	-	2765	1868	1284	898	636.6	457.7	334.1

ORDERING INFORMATION

Minimum Order Required - Consult Factory

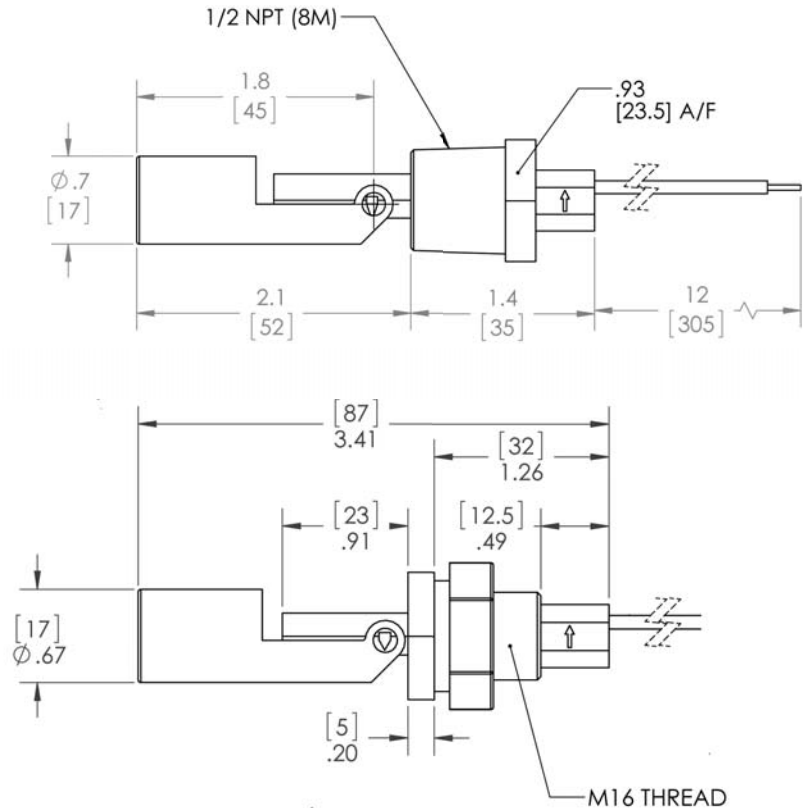
TSS	- D	- 8M
Model	Type	Port Size
TSS	See Chart Above	2M - 1/8" NPT 4M - 1/4" NPT 8M - 1/2" NPT 8S - 3/4-16 SAE M16 - M16 X 1.5



Model: SMLN



Model: SMLC



The **SML** series is a horizontal mount level switch ideal for monitoring Water and Oil levels

ELECTRICAL:

Voltage: AC220V/1A; DC24V/0.5A
 Switch rating: 70VA
 Wires: 12" long, 22 gauge

CIRCUIT:

Normally Open / Normally Closed

HOUSING MATERIAL:

Housing: Polypropylene
 Optional: Stainless Steel
 Float: Polypropylene
 Optional: Stainless Steel

WORKING TEMPERATURE:

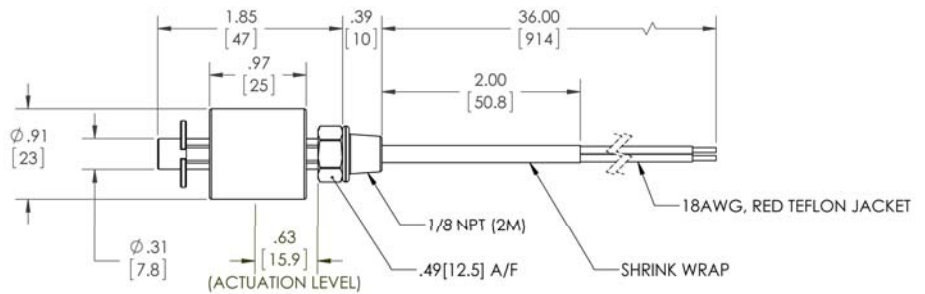
Polypropylene: -4°F to +176°F (-20° to +80°C)
 Stainless Steel: -4°F to +212°F (-20° to +100°C)

Depending on the mounting position, the float on the switches can either rise or lower with the liquid level. By rotating the switch 180°, the switch operation can be Normally Open or Normally Closed

ORDERING INFORMATION

SMLN	- 8M	- FL	- *SS
Model	Connection	Terminal	Options
SMLN - npt external mounting SMLC - internal clamp mounting	8M - 1/2" NPT (SMLN only) M16 - M16 (SMLC only) Consult Factory for Other Connections	FL - 12" standard leads FLL - Advise additional length of leads if other than standard	* - Omit if Standard SS - Stainless Steel **** Call Factory for Shrink Wrap Options & Pricing

VLS Float Level Switch



(Above dimensions are for the Plastic Stem design only)
(Brass & Stainless Steel are supplied with 22 AWG Cord Shield)



Slosh Shield

Reed Switch Ratings - Max. Resistive

VA	Volts	Amps AC	Amps DC
10	0-50	0.2	0.13
	120	.08	N.A.
	100	N.A.	0.3
20	0-30	0.4	0.3
	120	0.17	0.13
	240	0.08	0.06
50	0-50	0.5	0.5
	120	0.4	0.4
	240	0.2	0.2
100	120	0.8	N.A.
	240	0.4	N.A.

The **VLS** series is a Float Level Switch that is ideal for monitoring Water and Oil levels.

ELECTRICAL:

Switch: SPST
Units are supplied as normally open unless otherwise specified.
Circuit can be changed by inverting float on the stem

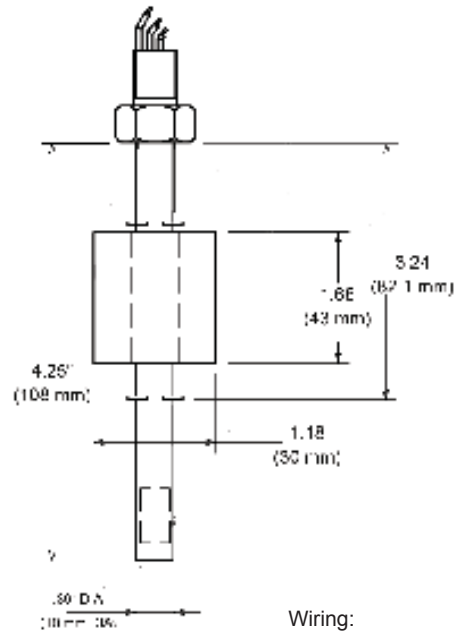
MATERIAL:

Float: Buna
Stem: Nylon(Std)
Optional: Brass,
Stainless Steel

ORDERING INFORMATION

VLS	- 2M	- FL	- A	- * SS
Model	Connection	Terminal	Circuit	Stem Material
VLS	2M - 1/8" NPT 4M - 1/4" NPT	FL36 - Standard 36" leads FLL - Advise additional length of leads if other than standard 36" **** Call Factory for Shrink Wrap Options & Pricing	A - Normally Open (Standard) B - Normally Closed	* Omit if Standard B - Brass SS - Stainless Steel SLS - Slosh Shield

TFL Temperature/ Level Switch



Wiring:
 Red : Temperature
 Yellow: Level
 Balck: Common

The **TFL** series is a combination Level and Temperature Switch that monitors both liquid level and temperature. These switches are used to operate components such as valves, motor start/stop switches, alarms, and warning lights.

ELECTRICAL:

Temperature Switch:
 5.0 Amp, 250VAC / 24VDC

Level:
 50W, 2.5A, 300VAC / 350VDC

Wires: 36" long, 20 AWG, 600v

Float can be inverted to change level switch function N.O.to N.C. or vice versa in the field

SETTING TOLERANCE:

± 10°F (± 5°C)

MAXIMUM PRESURE:

150 psi (10 bar)

OPERATING TEMPERATURE:

Oil: -40° to + 285°F (-40° to +140°C)

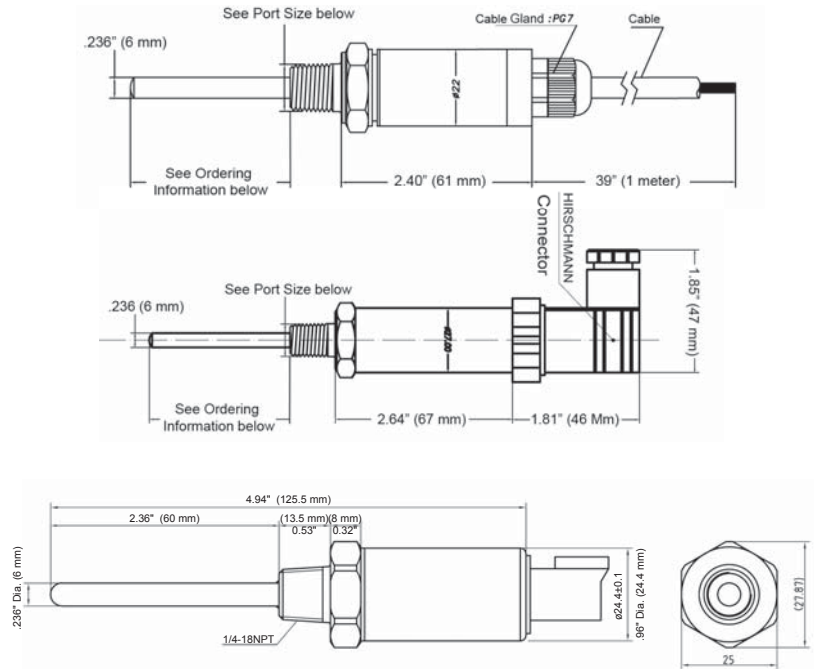
HOUSING MATERIAL:

Stem and Port : Brass
 Float : Buna (compatible with hydraulic oil)
 Retainer: Stainless Steel

ORDERING INFORMATION

TFL	- 70F	- R	- 4M	- A	- FL36	- LNO
Model	Temperature Set Point	Direction	Connection	Switch Circuit	Terminal	Level Circuit
TFL	Set Point Range 40°F - 285°F 5°C - 140°C Indicate temperature set point in degrees F (5°C (11°F) increments)	R - Temp Rising F - Temp Falling	4M - 1/4" NPT 4F - 1/4" NPT Female	A - Normally Open B - Normally Closed	FL36 - 36" standard leads **** Call Factory for Shrink Wrap Options & Pricing	LNO - Normally Open LNC - Normally Closed (Invert Float to change level switch function N.O.to N.C. or vice versa in the field) LNO = Float Resting on Retaining Ring

TTR Temperature Transducer



The **TTR** series is a temperature transducer consisting of a temperature header, module and housing. A signal conditioned output is proportioned to the applied temperature which is amplified, compensated and trimmed by a built in digital ASIC. Heat conductive silicon grease is filled inside the head to ensure the quick conductive of heat and avoid depress for the resistor. Widely used in the following applications: medical equipment, water and oil tanks, refrigerators and constant temperature equipment.

ELECTRICAL:

OUTPUT:

4 - 20 mA (2 wire)
0-5V
0-10V
1-5V
0.5 - 4.5 V

SUPPLY:

10 - 30 VDC(2 wire)
10 - 30 VDC(3 wire)
10 - 30 VDC(3 wire)
10 - 30 VDC(3 wire)
5 VDC(3 wire)

STABILITY:

< 0.25% / Yr (typical)

ACCURACY:

± 0.5% Full Scale

PROTECTION:

IP65 with Standard DIN
IP67 with Cable, Packard Plug,
Deutsch Integral,M12

RESPONSE TIME:

<10 Milliseconds

PROBE DIAMETER:

.236" (6mm)

MATERIAL:

304 Stainless Steel

TEMPERATURE RANGE: (*)(**)

-40° - 400°F (-40° - 205°C)

STORAGE TEMPERATURE:

-58° - 400°F (-50° - 205°C)

TEMPERATURE COEFFICIENT:

≤ ± 0.005%/v

ERROR ON SUPPLY VOLTAGE:

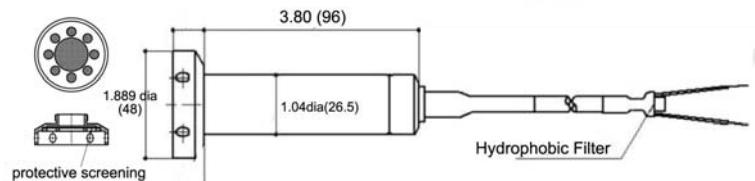
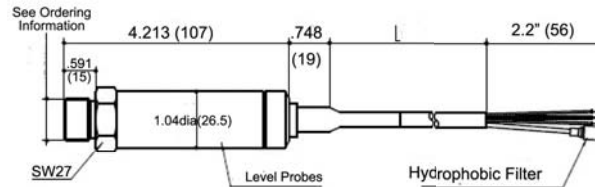
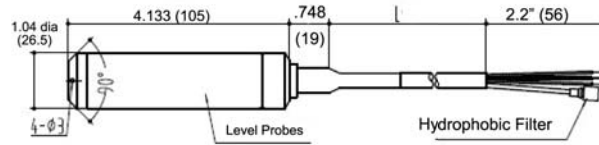
≤ ± 0.005%/v

* Special High Temperature is available - Inquire

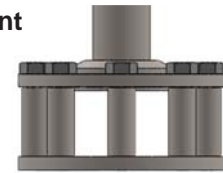
** Special Calibration Available on Request

ORDERING INFORMATION

TTR	- A	- 0/300	- 4M	- HCM	- A	- 80 *
Model	Set Type	Temperature Range	Port Size	Terminal	Probe Length	Pin Out
TTR	A: 4 - 20mA (2 Wire) B: 0 - 5V (3 Wire) C: 0 - 10V (3 Wire) D: 0.5 - 4.5V (3 Wire) E: 1 - 5V (3 Wire)	Specify Temperature Range -40° - 400°F (-40° - 205°C) REQUIRED °F or °C	4M - 1/4 NPT 4S - 7/16 X 20 SAE Male 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS- 1/4 BSPP (no undercut) 8M - 1/2 NPT Consult Factory for other sizes	C - 39" (1 Meter) Cable (Std) M - M12 X 1 PP - Packard Connector H - DIN 43650C Male Half Only HCC - 36" Cable HCM - DIN 43650C Mini DIN DI - Deutsch Integral	A - 4" B - 6" C - 10" D - 1" E - 1-1/2"	* Advise your required Pin Out, Refer to Page 36 other Pin Out Options



Optional Anti-Clog Attachment



Sensing Element: Piezoresistive Silicon Chip

The PTL pressure transducer is a heavy duty constructed design suitable for many applications for wells, resevoirs, lakes, rivers, sewage treatment plants, water tanks, ground water monitoring and surface water monitoring.

ELECTRICAL:

OUTPUT:

4 - 20 mA
0-5V
0-10V
1-5V
0.5 - 4.5 V

SUPPLY:

10 - 36 VDC(2 wire)
10 - 36 VDC(3 wire)
10 - 36 VDC(3 wire)
10 - 36 VDC(3 wire)
5 VDC (3 wire)

ACCURACY:

± 0.5% Full Scale

INSULATION:

200mΩ/250VDC

PROTECTION:

IP68 with Cable

RESPONSE TIME:

≤1 Millisecond (Up to 90%FS)

MATERIAL:

Sensing Element: Piezoresistive
Silicon Chip
Body: 304 Stainless Steel

PRESSURE RANGE:

0 - 285 PSI (0 - 20 BAR)

STORAGE TEMPERATURE:

-40° - 257°F (-40° - 125°C)

OPERATE TEMPERATURE

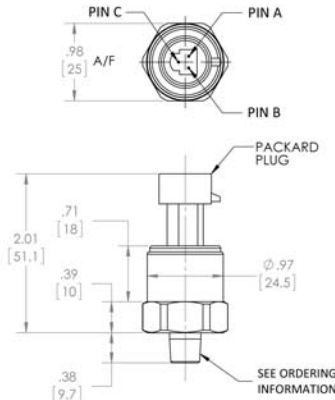
-4° to 185°F (-20° to 85°C)

OVERLOAD PRESSURE:

1.5 times Full Scan

ORDERING INFORMATION

PTL	- A	- 0/5	- 4M	- C	- AC*	- 80 *
Model	Type	Pressure Range	Connection	Terminal	Options	Pin Out
PTL	A: 4 - 20 mA (2 wire) B: 0 - 5V (3 wire) C: 0 - 10V (3 wire) D: 0.5 - 4.5V (3 wire) E: 1-5V (3 wire)	Specify Pressure Range Required <i>Note: Standard Ranges</i> 0/5 PSI, 0/10 PSI, 0/145 PSI, 0/285 PSI Consult Factory for Other Ranges	4M - 1/4" NPT 4S - 7/16 X 20 SAE Male 4G - 1/4" BSPP* T - Submersible * Non-standard	C- Cable (Specify Cable Length, Min:3ft)	AC - Anti-Clog Attachment	* Advise your required Pin Out, Refer to Page 36 other Pin Out Options



Sensing Element: Ceramic Capacitive

(See ordering information for other termination options)

Wiring Data Information												
DIN Connector PIN Function (- 81)					Cable Connector WIRE Function (- 85)				Deutsch 2 Pin Wiring (- 80)			
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	RED	BLACK	YELLOW	Signal Output	Pin 1	Pin 2	
mA	Supply V+	Output	N/A	N/A	mA	Supply V+	Output	N/A	mA	Supply V+	Output	
V	Supply V+	Common	Output	N/A	V	Supply V+	Common	Output	V	N/A	N/A	
M12 PIN Function (- 81)					Packard Plug PIN/WIRE Function (- 81)				Deutsch 3 Pin Wiring (- 80)			
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	PIN A	PIN B	PIN C	Signal Output	Pin A	Pin B	Pin C
mA	Supply V+	Output	N/A	N/A	mA	Supply V+	Output	N/A	mA	N/A	N/A	N/A
V	Supply V+	Common	Output	N/A	V	Supply V+	Common	Output	V	V+	Output	Common

The VTC pressure transducer offers high quality, stainless steel, high stability, compact design for use in air compressors, air conditioning and refrigeration equipment, automotive and hydraulic controls.

ELECTRICAL:

OUTPUT:
4 - 20 mA
0-5V
1-5V
0-10V
0.5 - 4.5 V

SUPPLY:
9 - 30 VDC (2 wire)
9 - 30 VDC (3 wire)
9 - 30 VDC (3 wire)
12 - 30 VDC (3 wire)
5 VDC (3 wire)

ACCURACY:

± 0.5% (Full Scan)

PROTECTION:

IP67 with DIN, Packard Plug, Cable, M12X1, Integral Deutsch

OPERATING TEMPERATURE:

-40° to 275°F (-40° to 135°C)

COMPENSATION TEMPERATURE:

-4° to 158°F (-20° to 70°C)

RESPONSE TIME:

<1 millisecond

PRESSURE RANGE:

0 - 2000 PSI (0 - 138 Bar)
(See ordering information below)

OVERLOAD PRESSURE:

1.5 X Full Scan

BURST PRESSURE:

3.0 X Full Scan

MATERIAL:

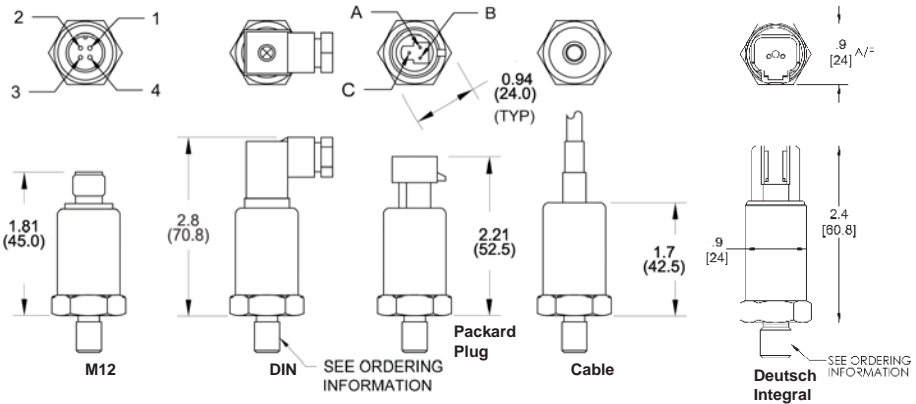
Wetted Area: Ceramic
Body: 304 Stainless Steel

ORDERING INFORMATION

VTC	- D	- 0/150	- 4M	- PP	- 81 *
Model	Type	Pressure Range	Connection	Terminal	Pin Out
VTC	A: 4 - 20 mA (2 wire) B: 0 - 5V (3 wire) C: 0 - 10V (3 wire) D: 0.5 - 4.5V (3 wire) E: 1-5V (3 wire)	Specify Pressure Range Required 0/75 PSI, 0/150 PSI 0/200 PSI, 0/250 PSI 0/300 PSI, 0/500 PSI 0/750 PSI, 0/1000 PSI 0/1500 PSI, 0/2000 PSI Consult Factory for Other Ranges Also available in Bar, Consult Factory	2M - 1/8" NPT 4M - 1/4" NPT 4S - 7/16 X 20 SAE Male 6S - 9/16 X 18 SAE Male 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS- 1/4 BSPP (no undercut) Consult Factory for Other Sizes	PP - Packard Plug M - M12X1 C - 39" (1 Meter) Cable (Std) HCM - DIN 43650C Mini DIN DI - Deutsch Integral	* Standard Pin out as noted above For other Electrical Pin Out options refer to page 36



Sensing Element: Ceramic



Wiring Data Information

DIN Connector PIN Function (- 81)					Cable Connector WIRE Function (- 80)					Deutsch 2 Pin Wiring (- 80)		
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	RED	BLUE	BLACK	YELLOW	Signal Output	Pin 1	Pin 2
mA	Supply V+	Output	N/A	N/A	mA	Supply V+	Output	N/A	N/A	mA	Supply V+	Output
V	Supply V+	Common	Output	N/A	V	Supply V+	Output	Common	N/A	V	N/A	N/A
M12 PIN Function (- 82)					Packard Plug PIN/WIRE Function (- 89)				Deutsch 3 Pin Wiring (- 81)			
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	A/BLACK	B/RED	C/GREEN	Signal Output	Pin A	Pin B	Pin C
mA	Supply V+	N/A	Output	N/A	mA	N/A	Supply V+	Output	mA	N/A	N/A	N/A
V	Supply V+	N/A	Output	Common	V	Common	Supply V+	Output	V	V+	Common	Output

The XTC pressure transducers offer high quality, high stability, stainless steel compact design, ideal for the industrial environment. The transducers are widely used in air compressors, air conditioning and refrigeration equipment, automotive and hydraulic control.

ELECTRICAL:

Output:
 4 - 20mA (2 wire)
 0 - 5V,
 0 - 10V
 1 - 5V
 0.5 - 4.5V (ratiometric)

Supply:
 10 - 30 vdc (2wire)
 8 - 30 vdc (3 wire)
 12 - 30 vdc (3 wire)
 8 - 30 vdc (3 wire)
 5 vdc (3 wire)

ACCURACY:

± 0.5% (Full Scan)

PROTECTION:

IP65 with DIN
 IP67 with Packard Plug, Cable
 M12X1, Integral Deustch

RESPONSE TIME:

<10 milliseconds

OPERATING TEMPERATURE:

-40° to 212°F (-40° to 100°C)

COMPENSATION TEMPERATURE:

14° to 176°F (-10° to 80°C)

STORAGE TEMPERATURE:

-58° to 257°F (-50° to 125°C)

INSULATION:

>100m Ω@50V

PRESSURE RANGE:

0 - 3500 PSI (0 - 241 Bar)

OVERLOAD PRESSURE:

150% Full Scan

MATERIAL:

Wetted Area: Ceramic
 Body: 304 Stainless Steel

MEDIUM COMPATIBILITY:

Corrosive medium compatible with Cr18Ni9Ti,ceramics

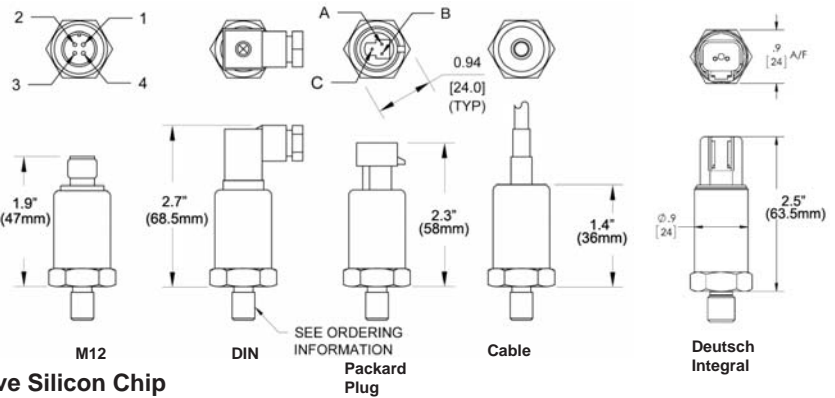
ORDERING INFORMATION

XTC	- A	- 0/3000	- 4M	- HCM	- 80 *
Model	Type	Pressure Range	Port Size	Terminal	Pin Out
XTC	A: 4 - 20mA (2 wire) B: 0 - 5V (3 wire) C: 0 - 10V (3 wire) D: 0.5 - 4.5V (3 wire) E: 1 - 5V (3 wire)	Specify Pressure Range Required <i>Note: Standard Ranges</i> 0/100 PSI, 0/300 PSI, 0/600 PSI, 0/1000 PSI, 0/1500 PSI, 0/3000 PSI, 0/3500 PSI, Consult Factory for Other Ranges	4M - 1/4 NPT 4S - 7/16 X 20 SAE MALE 2G - 1/8 BSPP* 4G - 1/4 BSPP* (undercut for an o-ring seal) 4GS- 1/4 BSPP* (no undercut) *Non Standard	PP - Packard Plug M - M12X1 C - 39" (1 Meter) Cable (Std) HCM - DIN 43650C Mini DIN DI - Deutsch Integral	See Above Wire Data Information * For other Electrical Pin Out options refer to page 36



Sensors Inc.®

STC Pressure Transducer



Sensing Element: Piezoresistive Silicon Chip

Wiring Data Information

DIN Connector PIN Function (- 81)					Cable Connector WIRE Function (- 81)					Deutsch 2 Pin Wiring (- 80)			
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	RED	GREEN	YELLOW		Signal Output	Pin 1	Pin 2	
mA	Supply V+	Output	N/A	N/A	mA	Supply V+	Output	N/A		mA	Supply V+	Output	
V	Supply V+	Common	Output	N/A	V	Supply V+	Common	Output		V	N/A	N/A	
M12 PIN Function (- 81)					Packard Plug PIN/WIRE Function (-81)					Deutsch 3 Pin Wiring (- 81)			
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	PIN A	PIN B	PIN C		Signal Output	Pin A	Pin B	Pin C
mA	Supply V+	Output	N/A	N/A	mA	Supply V+	Output	N/A		mA	N/A	N/A	N/A
V	Supply V+	Common	Output	N/A	V	Supply V+	Common	Output		V	V+	Common	Output

The **STC** pressure transducers offer Piezoresistive silicon chip, MEMS technology, Long Term Stability, Stainless Steel Compact design, ideal for the industrial environment. The transducers are widely used in air compressors, air conditioning and refrigeration equipment, automotive and hydraulic control.

ELECTRICAL:

Output:
 4 - 20mA (2 wire) Supply:
 9 - 36 vdc (2wire)
 0 - 5V, 9 - 36 vdc (3 wire)
 0 - 10V 12 -30 vdc (3 wire)
 1 - 5V 9 - 36 vdc (3 wire)
 0.5 - 4.5V (ratiometric) 5 vdc (3 wire)

ACCURACY:

± 0.5% (Full Scan)

HYSTERESIS & REPEATABILITY:

± 0.1% (Full Scan)

PROTECTION:

IP65 with DIN, M12X1, Packard Plug, Cable, Integral Deutsch

OPERATING TEMPERATURE:

-40° to 257°F (-40° to 125°C)

AMBIENT TEMPERATURE:

-4° to 185°F (-20° to 85°C)

STORAGE TEMPERATURE:

-40° to 257°F (-40° to 125°C)

TEMPERATURE DRIFT:

±1.5% Full Scan max
 -4° to 185°F (-20° to 85°C)

MECHANICAL LIFE:

1 million cycles

PRESSURE RANGE:

-14.5 - 14,500 PSI (-1 - 1000.Bar)

Consult factory for higher pressure.

Caution: Please specify if application has high pressure fluctuation, a pulse snubber should be added against cavitation and liquid hammer

OVERLOAD PRESSURE:

3x Full Scan ≤ 10PSI, 1.5x Full Scan ≤ 6000PSI
 1.2x Full Scan @ 8700 psi

MATERIAL:

Body: 304 Stainless Steel

Sensing Element: Piezoresistive Silicon Chip

RESPONSE TIME:

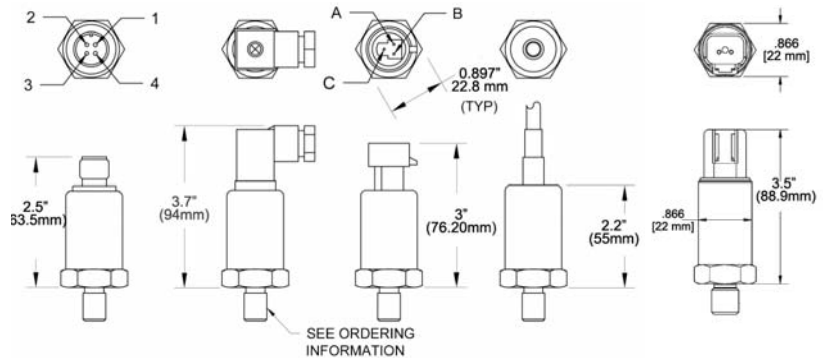
<1 millisecond

ORDERING INFORMATION

STC	- A	- 0/3000	- 4M	- HCM	- 81 *	- 5*
Model	Type	Pressure Range	Port Size	Terminal	Pin Out	Option
STC	A: 4 - 20mA (2 wire) B: 0 - 5V (3 wire) C: 0 - 10V (3 wire) D: 0.5 - 4.5V (3 wire) E: 1 - 5V (3 wire)	Specify Pressure Range Required <i>Note: Ranges Available</i> -14.5/0 PSI (-1/0 BAR), 0/1.5 PSI(0.11 Bar) 0/6 PSI (0/0.4 Bar), 0/14.5 PSI (0/1 Bar) 0/100 PSI (0/7Bar), 0/600 PSI, (0/40 Bar) 0/1000 PSI 0/69 Bar), 0/1500 PSI (0/100 Bar) 0/3000 PSI,(0/200 Bar),0/6000 PSI (0/400 Bar) 0/ 8700 PSI (0/600 Bar), 0/ 14,500 PSI (0/1000 Bar) Consult Factory for Other Ranges	2M- 1/8" NPT 4M - 1/4 NPT 4S - 7/16 x 20 SAE Male 4G - 1/4 BSPP (undercut for o-ring seal) 4GS- 1/4 BSPP (no undercut) 6S - 9/16 X 18 SAE Male M12 - M12 X 1.5 M14 - M14 X 1.5 Consult Factory for other sizes	PP - Packard Plug C - Cable (standard 3 ft long) M - M12X1 HCM - DIN 43650C Mini DIN DI - Deutsch Integral	See Above Wire Data Information * For other Electrical Pin Out options refer to page 36	*Omit if Standard 5 - Spiral Restrictor



Sensing Element: Silicon Strain Gauge



Wiring Data Information													
DIN Connector PIN Function (- 80)					Cable Connector WIRE Function					Deutsch 2 Pin Wiring (- 80)			
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	RED	BLUE	BLACK	WHITE	Signal Output	Pin 1	Pin 2	
mA	Supply V+	Output	N/A	N/A	mA (-82)	Supply V+	N/A	Output	N/A	mA	Supply V+	Output	
V	Supply V+	Output	Common	N/A	V (-85)	Supply V+	N/A	Common	Output	V	N/A	N/A	
M12 PIN Function (- 87)					Packard Plug PIN/WIRE Function (- 89)				Deutsch 3 Pin Wiring (- 81)				
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	A/BLACK	B/RED	C/GREEN	Signal Output	Pin A	Pin B	Pin C	
mA	Supply V+	N/A	N/A	Output	mA	N/A	Supply V+	Output	mA	N/A	N/A	N/A	
V	Supply V+	N/A	Common	Output	V	Common	Supply V+	Output	V	V+	Common	Output	

The JTC pressure transducers offer high quality, high stability, stainless steel compact design, ideal for the industrial environment. JTC series uses MEMS technologies, compensated with digital ASIC and designed with EMI/RFI circuit built in. The transducers are widely used in air compressors, air conditioning and refrigeration equipment, automotive and hydraulic control.

ELECTRICAL:

Output:
 4 - 20mA (2 wire)
 0 - 5V
 0 - 10V
 1 - 5V
 0.5 - 4.5V (ratiometric)

Supply:
 10 -30 vdc (2wire)
 10 -30 vdc (3 wire)
 10 -30 vdc (3 wire)
 10 -30 vdc (3 wire)
 5 vdc (3 wire)

ACCURACY:

± 0.5% (Full Scan)

RESPONSE TIME:

< 10 milliseconds

ZERO OFFSET

≤ +/-1% FS

PROTECTION:

IP65 with DIN, Packard Plug, Cable
 M12X1, Integral Deutsch

OPERATING TEMPERATURE:

-40° to 257°F (-40° to 125°C)

COMPENSATION TEMPERATURE:

32° to 158°F (0° to 70°C)

STORAGE TEMPERATURE:

-58° to 257°F (-50° to 125°C)

SPAN OFFSET:

≤ +/-1% FS

PRESSURE RANGE:

0 to 10,000 PSI (0 to 690 Bar)

OVERLOAD PRESSURE:

2x Full Scan

MATERIAL:

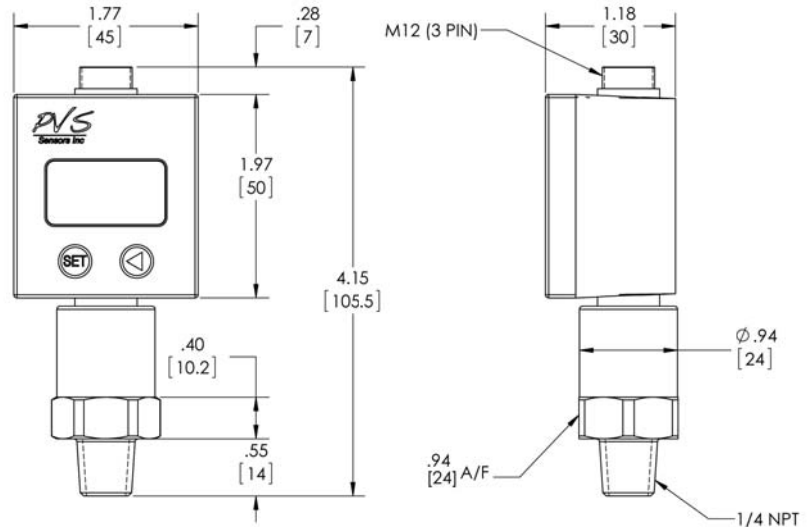
Wetted Area: Silicon Gauge
 Body: 304 Stainless Steel

BURST PRESSURE:

5X of Full Scale (Maximum:21,760 psi)

ORDERING INFORMATION

JTC	- A	- 0/3000	- 4M	- HCM	- 80 *
Model	Type	Pressure Range	Port Size	Terminal	Pin Out
JTC	A: 4 - 20 mA (2 wire) B: 0 - 5V (3 wire) C: 0 - 10V (3 wire) D: 0.5 - 4.5 (3 wire) ratiometric E: 1 - 5V (3 wire)	Specify Pressure Range Required <i>Note: Standard Ranges</i> 0/100 PSI, 0/300 PSI, 0/600 PSI, 0/1000 PSI 0/1500 PSI, 0/3000 PSI, 0/5000 PSI, 0/6000 PSI, 0/9000 PSI Consult Factory for Other Ranges	4M - 1/4 NPT 4S - 7/16 X 20 SAE MALE 2G - 1/8 BSPP* 4G - 1/4 BSPP* (undercut for an o-ring seal) 4GS- 1/4 BSPP* (no undercut) *Non Standard	PP - Packard Plug M - M12X1 C - 39" (1 Meter) Cable (Std) HCM - DIN 43650C Mini DIN HC - DIN43650A Large DIN Cable Clamp HN - DIN43650A Large DIN 1/2" Conduit (female) DI - Deutsch Integral	See Above Wire Data Information * For other Electrical Pin Out options refer to page 36



Wiring Data Information								
M12 3 PIN (- 80)				DIN Electrical Connections PIN Function (- 80)				
Signal	Pin 1	Pin 2	Pin 3	Signal	Pin 1	Pin 2	Pin 3	Pin 4
mA	V+	Output	N/A	mA	Supply V+	Output	N/A	N/A

The **TDD** series transducer with a digital display readout and a 4-20 mA output. It features high accuracy, long term stability, compact and rugged design to measure gas and liquid pressure in a wide range of applications. The high resolution LCD indicator can display the real time pressure value which provides readable information for field engineers. The display buttons on the indicator also provide adjustment to zero and span calibration, unit change.

ELECTRICAL:

Output: 4 - 20mA (2 wire)
Supplied with standard 79" (2m) connector cable
Power Supply: 18 - 30 VDC

ACCURACY:

± 0.5% (Full Scan)

INDICATOR:

4 digits (-9999 to 9999 adjustable)
Unit: KPa, MPa, Bar, PSI, %, atm, m

PROTECTION:

IP65 - M12 Cable, DIN

OPERATING TEMPERATURE:

-40° to 275°F (-40° to 135°C)

WORKING TEMPERATURE:

14° to 140°F (-10° to 60°C)

STORAGE TEMPERATURE:

-4° to 176°F (-20° to 80°C)

PRESSURE RANGE:

0 - 3500 PSI (0 - 241 Bar)

OVERLOAD PRESSURE:

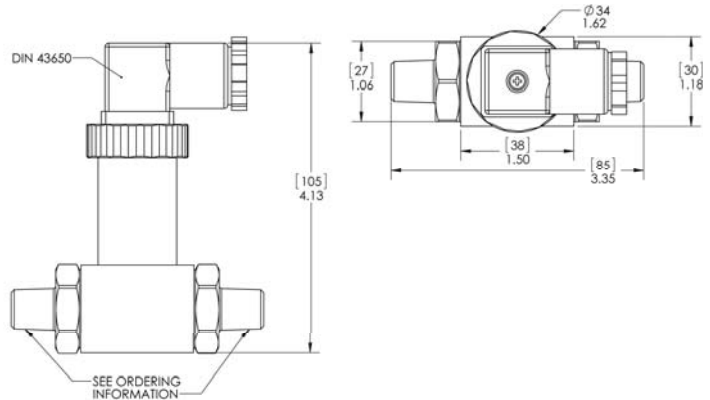
1.5 times of pressure range

MATERIAL:

Wetted Area: Ceramic Sensing
Body: Welded Stainless Steel

ORDERING INFORMATION

TDD	- A	- 0/100	- 4M	- M	- 80
Model	Type	Pressure Range	Port Size	Terminal	Pin Out
TDD	A: 4 - 20 mA (2 wire)	Specify Pressure Range Required <i>Note: Standard Ranges</i> 0/100 PSI, 0/300 PSI, 0/600 PSI, 0/1500 PSI, 0/3000 PSI, 0/3500 PSI, Consult Factory for Other Ranges	4M - 1/4 NPT 4S - 7/16 X 20 SAE MALE 4G - 1/4 BSPP*(undercut for an o-ring seal) 4GS- 1/4 BSPP* (no undercut) 8M - 1/2 NPT *Non Standard	M - M12 (with 79" mating cable) HCM - DIN43650C Mini Din	Standard Pin out as per above wire data Information



Sensing Element: Piezoresistive Silicon Chip

Wiring Data Information

DIN Connector PIN Function (- 81)

Signal Output	Pin 1	Pin 2	Pin 3	Pin 4
mA	Supply V+	Output	N/A	N/A
V	Supply V+	Common	Output	N/A

The **DPT DIFFERENTIAL** pressure transducers offer Piezoresistive silicon chip, MEMS technology, Long Term Stability, Stainless Steel design, ideal for the industrial environment.

ELECTRICAL:

Output: 4 - 20mA (2 wire)
0 - 5V,
1 - 5V
0.5 - 4.5V (ratiometric)

Supply: 12 -35 vdc (2wire)
12 -35 vdc (3 wire)
12 -35 vdc (3 wire)
5 vdc (3 wire)

ACCURACY:

Including Linearity, Hysteresis and Repeatability: ± 0.5% (Full Scan)

PROTECTION:

IP65 with DIN

RESPONSE TIME:

1 millisecond

WEIGHT:

1.04 LBS (0.47KG)

OPERATING TEMPERATURE:

-4° to 185°F (-20° to 85°C)

COMPENSATION TEMP:

32° to 140°F (0° to 60°C)

STORAGE TEMPERATURE:

-40° to 257°F (-40° to 125°C)

ZERO TEMP. COEFFICIENT:

±1.5% Full Scan max
-4° to 185°F (-20° to 85°C)

SPAN TEMP. COEFFICIENT:

±1.5% Full Scan max
-4° to 185°F (-20° to 85°C)

PRESSURE RANGE:

Range:	Positive Overpressure	Negative Overpressure
5 psi (0.4 Bar)	10 psi (0.7 Bar)	5 psi (0.4Bar)
10 psi (0.7 Bar)	22 psi (1.5 Bar)	10 psi (0.7 Bar)
14.5 psi (1 Bar)	29 psi (2 Bar)	14.5 psi (1 Bar)
36 psi (2.5 bar)	73 psi (5 Bar)	36 psi (2.5 Bar)
58 psi (4 Bar)	116 psi (8 Bar)	58 psi (4 Bar)
87 psi (6 Bar)	174 psi (12 Bar)	87 psi (6 Bar)
145 psi (10 Bar)	290 psi (20 Bar)	145 psi (10 Bar)
232 psi (16 Bar)	464 psi (32 Bar)	145 psi (10 Bar)
365 psi (25 Bar)	725 psi (50 Bar)	145 psi (10 Bar)

MATERIAL:

Body: 304 Stainless Steel
Sensing Element: Piezoresistive Silicon Chip

ORDERING INFORMATION

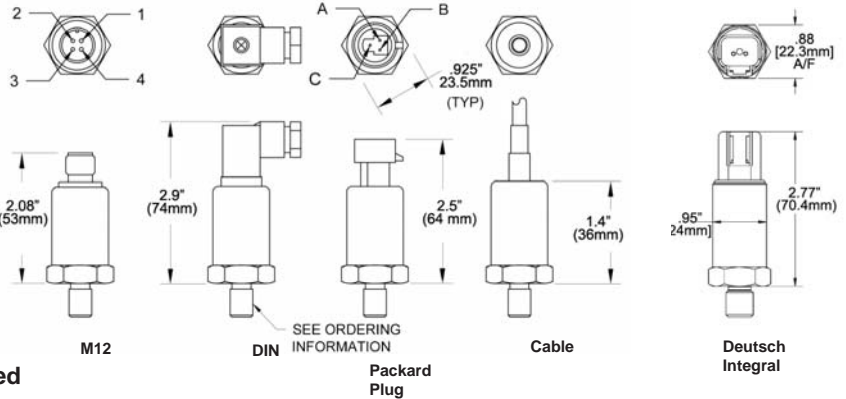
DPT	- A	- 10	- 4M	- HC	- 81
Model	Type	Pressure Range	Port Size	Terminal	Pin Out
DPT	A: 4 - 20 mA (2 wire) B: 0 - 5V (3 wire) D: 0.5 - 4.5 (3 wire) E: 1 - 5V (3 wire)	Specify Pressure Range Required (5 psi, 10 psi, 14.5 psi, 36 psi 58 psi, 87 psi, 145 psi, 232 psi 363 psi)	2M- 1/8" NPT 4M - 1/4 NPT 4S - 7/16 X 20 SAE Male 4G - 1/4 BSPP* (undercut for an o-ring seal) 4GS- 1/4 BSPP* (no undercut) M12 - M12 X 1.5* M14 - M14 X 1.5* *Non Standard Consult Factory for other sizes	HC - DIN 43650A DIN Cable Clamp	Standard Pin out as per above wire data Information



Sensors Inc.®



GTC Pressure Transducer



CE Sensing Element: Glass Micro-Fused

Wiring Data Information													
DIN Connector PIN Function (- 81)					Cable Connector WIRE Function (- 81)					Deutsch 2 Pin Wiring (- 80)			
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	RED	GREEN	YELLOW	BLACK	Signal Output	Pin 1	Pin 2	
mA	Supply V+	Output	N/A	N/A	mA	Supply V+	Output	N/A	N/A	mA	Supply V+	Output	
V	Supply V+	Common	Output	N/A	V	Supply V+	Common	Output	N/A	V	N/A	N/A	
M12 PIN Function (- 80)					Packard Plug PIN/WIRE Function (- 80)				Deutsch 3 Pin Wiring (- 81)				
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	PIN A	PIN B	PIN C	Signal Output	Pin A	Pin B	Pin C	
mA	Supply V+	Output	N/A	N/A	mA	Supply V+	Output	N/A	mA	N/A	N/A	N/A	
V	Supply V+	Output	Common	N/A	V	Supply V+	Output	Common	V	V+	Common	Output	

The **GTC** pressure transducers offer a Glass Micro-Fused sensing element, MEMS technology, Long Term Stability, Stainless Steel Compact design.

ELECTRICAL:

Output: Supply:
 4 - 20mA (2 wire) 12 -35 vdc (2wire)
 0 - 5V 10 -35 vdc (3 wire)
 0 - 10V 10 -35 vdc (3 wire)
 1 - 5V 10 -35 vdc (3 wire)
 0.5 - 4.5V (ratiometric) 5 vdc (3 wire)

ACCURACY:

Including Linearity, Hysteresis and Repeatability: ± 0.5% (Full Scan)

PROTECTION:

IP65 with DIN, M12X1, Packard Plug, Cable, Integral Deustch

OPERATING TEMPERATURE:

-40° to 257°F (-40° to 125°C)

COMPENSATION TEMP:

14° to 158°F (-10° to 70°C)

STORAGE TEMPERATURE:

-40° to 257°F (-40° to 125°C)

ZERO TEMP. COEFFICIENT:

±1.5% Full Scan max
 14° to 158°F (-10° to 70°C)

SPAN TEMP. COEFFICIENT:

±1.5% Full Scan max
 14° to 158°F (-10° to 70°C)

PRESSURE RANGE:

0 - 8700 PSI (0 - 600 Bar)

OVERLOAD PRESSURE:

3x Full Scan ≤ 10PSI, 2x Full Scan ≤ 6000PSI
 1.3x Full Scan above 6000 psi

MATERIAL:

Body: 304 Stainless Steel
 Sensing Element: Glass Micro-Fused

RESPONSE TIME:

<1 millisecond

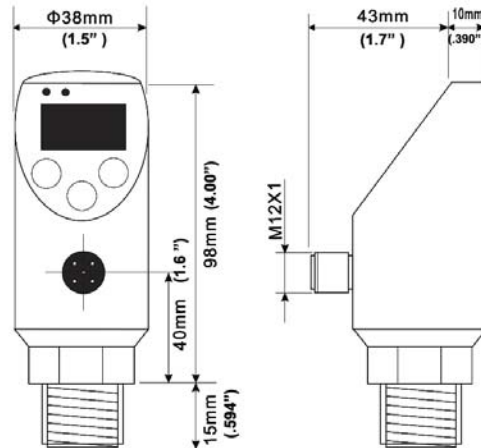
MECHANICAL LIFE:

1 million cycles

ORDERING INFORMATION

(For Applications with EAU of 2000 pieces, minimum release 500 pcs.)

GTC	- A	- 0/3000	- 4M	- HCM	- *5	- 80 *
Model	Type	Pressure Range	Port Size	Terminal	Options	Pin Out
GTC	A: 4 - 20mA (2 wire) B: 0 - 5V (3 wire) C: 0 - 10V (3 wire) D: 0.5 - 4.5V (3 wire) E: 1 - 5V (3 wire)	Specify Pressure Range Required Note: Ranges Available 0/70 PSI(0/5 Bar) 0/85 PSI (0/6 Bar), 0/150 PSI (0/10 Bar), 0/300 PSI (0/21 Bar), 0/600PSI (0/40 Bar), 0/1500 PSI(0/100 Bar), 0/3000PSI (0/200 Bar),0/6000 PSI (0/400 Bar)0/8700 PSI (0/600 Bar) Consult Factory for Other Ranges	2M- 1/8" NPT 4M - 1/4 NPT 4S - 7/16 x 20 SAE Male 4G- 1/4 BSPP (undercut for an o-ring seal) 4GS- 1/4 BSPP (no undercut) M12 - M12 X 1.5 M14 - M14 X 1.5 Consult Factory for other sizes	PP - Packard Plug C - Cable (standard 3 ft long) M - M12X1 HCM - DIN 43650C Mini DIN DI - Deutsch Integral	*Omit for 5- Spiral Restrictor	See Above Wire Data Information * For other Electrical Pin Out options refer to page 36



Wiring Data Information

M12 x 1, 5 PINS

Signal	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
mA	V+	SP1(Switch 1)	GND	SP2(Switch 2)	Output

The **SPS** series is a Electronic Pressure Switch, Transducer and Digital Display in one device. The SPS is designed for general industrial applications such as hydraulic and pneumatic systems, pressure monitoring and control, pumps and compressors.

- PNP Switching, voltage and current outputs
- Switching Set points are adjustable
- Displays peak pressure value and environmental temperature

- Housing with display and electrical connection rotates 330 degrees

ELECTRICAL:

Output: 4 - 20mA
 0 - 20mA
 0 - 5 V
 0 - 10V
 Power Supply: 12 - 30 VDC

ACCURACY:

± 0.5% (Full Scan)

INDICATOR:

3 Display buttons (back lighted)
 Unit: PSI, Bar, mBar, Pa, kPa, MPa

PROTECTION:

IP65 - M12 Cable

MEDIA TEMPERATURE:

-22° to 176°F (-30° to 80°C)

WORKING TEMPERATURE:

-22° to 176°F (-30° to 80°C)

STORAGE TEMPERATURE:

-40° to 176°F (-40° to 80°C)

PRESSURE RANGE:

-14.5 - 8700 PSI (-1.0 - 600 Bar)

OVERLOAD PRESSURE:

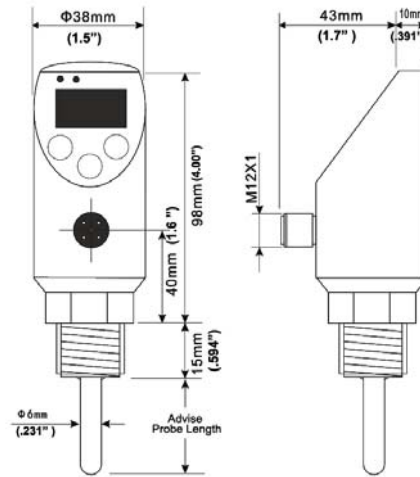
1.5 times of pressure range

MATERIAL:

Wetted Area: Stainless steel
 Body: 316 Stainless Steel

ORDERING INFORMATION

SPS	- A	- 0/100	- 4M	- M5
Model	Type	Pressure Range	Port Size	Terminal
SPS	A: 4 - 20 mA A1: 0 - 20 mA B: 0 - 5 V C: 0 - 10V	Specify Pressure Range Required Consult Factory for Other Ranges	4M - 1/4 NPT 4S - 7/16 x 20 SAE Male 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS- 1/4 BSPP (no undercut) M12 - M12 X 1.5 M14 - M14 X 1.5 Consult Factory for other sizes	M5 - M12 X 1



Wiring Data Information					
M12 x 1, 5 PINS					
Signal	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
mA	V+	SP1(Switch 1)	GND	SP2(Switch 2)	Output

The **STS** series is a Electronic Temperature Switch, Transducer and Digital Display in one device. The STS is designed for temperature monitoring, measurement and control such as used in hydraulic oil, lubricants, heat-carrying agents etc.

- PNP Switching, voltage and current outputs
- Switching Set points are adjustable
- Displays peak pressure value and environmental temperature

- Housing with display and electrical connection rotates 330 degrees

ELECTRICAL:

Output: 4 - 20mA
 0 - 20mA
 0 - 5 V
 0 - 10V
 Power Supply: 12 - 30 VDC

ACCURACY:

± 0.5% (Full Scan)

INDICATOR:

3 Display buttons (back lighted)
 Unit: °F(Fahrenheit), °C (Celsius), K(Kelvin)

PROTECTION:

IP65 - M12 Cable

MEDIA TEMPERATURE:

-22° to 176°F (-30° to 80°C)

WORKING TEMPERATURE:

-22° to 176°F (-30° to 80°C)

STORAGE TEMPERATURE:

-40° to 176°F (-40° to 80°C)

TEMPERATURE RANGE:

-58° to 500°F (-50° to 260°C)

MATERIAL:

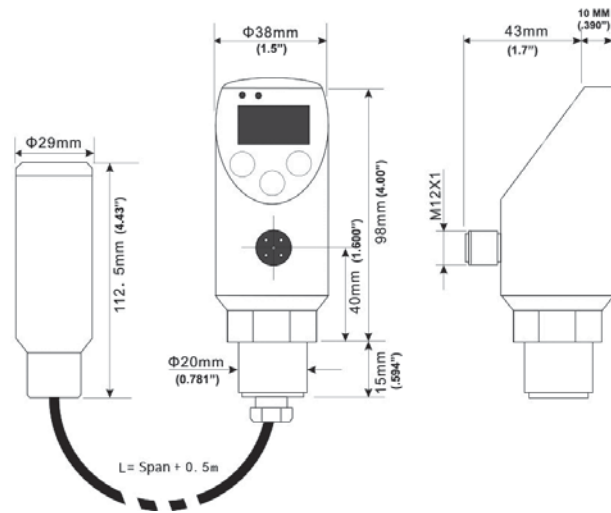
Wetted Area: Stainless Steel
 Body: 316 Welded Stainless Steel

TEMPERATURE RESPONSE TIME:

< 5 seconds

ORDERING INFORMATION

STS	- A	- 0/100F	- 4M	- M5	- A
Model	Type	Temperature Range	Port Size	Terminal	Probe Length
STS	A: 4 - 20 mA A1: 0 - 20 mA B: 0 - 5 V C: 0 - 10V	Specify Temperature Range Required Consult Factory for Other Ranges	4M - 1/4 NPT 4S - 7/16 x 20 SAE Male 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS- 1/4 BSPP (no undercut) M12 - M12 X 1.5 M14 - M14 X 1.5 Consult Factory for other sizes	M5 - M12 X 1	A - 4" B - 6" C - 10"



Wiring Data Information

M12 x 1, 5 PINS

Signal	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
mA	V+	SP1(Switch 1)	GND	SP2(Switch 2)	Output

The **SLS** series is a Electronic Level, Transducer and Digital Display readout in one device. The SLS is designed for level monitoring and measurement of liquid and oil media for use in general industries such as tank, case, liquid cell and deep well.

- PNP Switching, voltage and current outputs
- Switching Set points are adjustable
- Displays peak pressure value and environmental temperature

- Housing with display and electrical connection rotates 330 degrees

ELECTRICAL:

Output: 4 - 20mA
 0 - 20mA
 0 - 5 V
 0 - 10V
 Power Supply: 12 - 30 VDC

ACCURACY:

$\pm 0.5\%$ (Full Scan)

INDICATOR:

3 Display buttons (back lighted)
 Unit: PSI, Bar, mBar, Pa, kPa, MPa

PROTECTION:

IP65 - M12 Cable

MEDIA TEMPERATURE:

-22° to 176°F (-30° to 80°C)

WORKING TEMPERATURE:

-22° to 176°F (-30° to 80°C)

STORAGE TEMPERATURE:

-40° to 176°F (-40° to 80°C)

PRESSURE RANGE:

1.4 - 142 psi (3 in HG - 300 in HG)

OVERLOAD PRESSURE:

1.5 times of pressure range

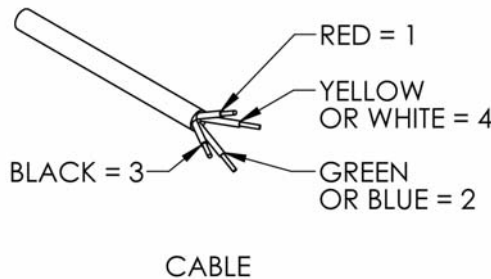
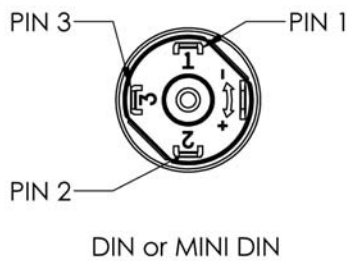
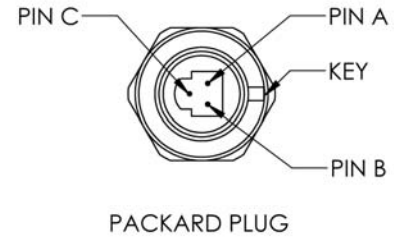
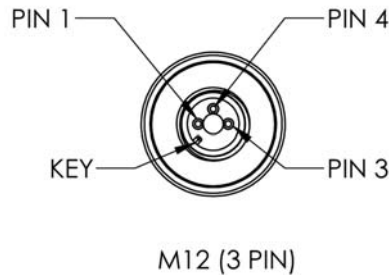
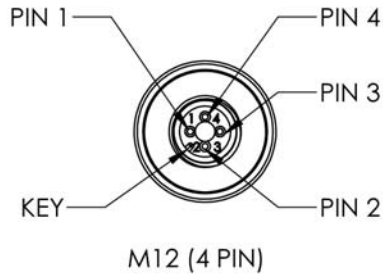
MATERIAL:

Wetted Area: Stainless Steel
 Body: 316 Stainless Steel

ORDERING INFORMATION

SLS	- A	- 0/100	- 4M	- M5
Model	Type	Pressure Range	Port Size	Terminal
SLS	A: 4 - 20 mA A1: 0 - 20 mA B: 0 - 5 V C: 0 - 10V	Specify Pressure Range Required Consult Factory for Other Ranges	4M - 1/4 NPT 4S - 7/16 x 20 SAE Male 4G - 1/4 BSPP (undercut for an o-ring seal) 4GS- 1/4 BSPP (no undercut) M12 - M12 X 1.5 M14 - M14 X 1.5 Consult Factory for other sizes	M5 - M12 X 1

Transducer Electrical Pin Out Information



Wiring Data Information Options									
- 80					- 81				
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	Pin 1	Pin 2	Pin 3	Pin 4
mA	Supply V+	Output	N/A	N/A	mA	Supply V+	Output	N/A	N/A
V	Supply V+	Output	Common	N/A	V	Supply V+	Common	Output	N/A
- 82					- 83				
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	Pin 1	Pin 2	Pin 3	Pin 4
mA	Supply V+	N/A	Output	N/A	mA	N/A	Supply V+	N/A	Output
V	Supply V+	N/A	Output	Common	V	N/A	Supply V+	Common	Output
- 84					- 85				
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	Pin 1	Pin 2	Pin 3	Pin 4
mA	Supply V+	N/A	Output	N/A	mA	Supply V+	N/A	Output	N/A
V	Supply V+	Output	Common	N/A	V	Supply V+	N/A	Common	Output
- 86					- 87				
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	Pin 1	Pin 2	Pin 3	Pin 4
mA	Supply V+	N/A	N/A	Output	mA	Supply V+	N/A	N/A	Output
V	Common	N/A	Supply V+	Output	V	Supply V+	N/A	Common	Output
- 88					- 89				
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	Pin 1	Pin 2	Pin 3	Pin 4
mA	Supply V+	N/A	Output	N/A	mA	N/A	Supply V+	Output	N/A
V	Supply V+	Common	N/A	Output	V	Common	Supply V+	Output	N/A
- 90					- 91				
Signal Output	Pin 1	Pin 2	Pin 3	Pin 4	Signal Output	Pin 1	Pin 2	Pin 3	Pin 4
mA	Output	Supply V+	N/A	N/A	mA	Output	Supply V+	N/A	N/A
V	Supply V+	Output	Common	N/A	V	Output	Supply V+	Common	N/A

			
FL Flying Leads (Call Factory for Shrink Wrap Options & Pricing)	SP "A", "B" or "C" Circuit 1/4" Spades	TS 6-32 Terminal Screws	H DIN 43650A Male Half Only
			
HC DIN 43650A Cable Clamp	HN DIN 43650A 1/2" Conduit	HC11A,B,C DIN 43650A Lighted DIN	HC11D DIN 43650A Indicating Light Green/Red
			
HCC DIN w/36" Cable	HCM DIN 43650C	MDP2 Deutsch DT06-2S 2 Pin Mating Plug	MDP3 Deutsch DT06-3S 3 Pin Mating Plug
			
WTF/WTM Weather Pack Tower 2 Pin Male or Female Pins	WSF/WSM Weather Pack Shroud 2 Pin Male or Female Pins	WTF3/WTM3 Weather Pack Tower 3 Pin Male or Female Pins	WSF3/WSM3 Weather Pack Shroud 3 Pin Male or Female Pins
			
DI Integral Deutsch 2 Pin	DI Integral Deutsch 3 Pin	M12 X 1 2, 3 & 4 Pin	Packard Plug



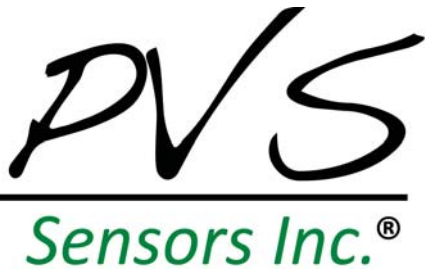
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West Union, SC 29696

To better understand your requirements, please fill out the switch application form below.
Copy and either e-mail to sales@pvssensors.com or fax to 1-864-653-1047

SWITCH APPLICATION

COMPANY NAME:			
CONTACT NAME:		E-MAIL:	
ADDRESS:			
PHONE:		FAX:	
SYSTEM PRESSURE: (NORMAL):		(MAXIMUM):	
PORT CONNECTION:			
SET POINT:	RISING / FALLING	DEADBAND REQUIREMENTS:	
ADJUSTABLE RANGE:			
CIRCUIT FORM:	SPST -NO (A)	SPST - NC (B)	SPDT (C)
ELECTRICAL:	VAC:	VDC:	
AMPERAGE:	RESISTIVE:	INDUCTIVE:	
ELECTRICAL CONNECTION:			
TEMPERATURE:	(F°)	MEDIUM:	AMBIENT:
CYCLE RATE:			
OTHER SPECIAL REQUIREMENTS:			
APPLICATION:			
YOUR CURRENT SUPPLIER:			
SAMPLE PROTOTYPE(S) REQUIRED BY:			
ESTIMATED ANNUAL USAGE:		TARGET NET PRICE:	



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West Union, SC 29696

To better understand your requirements, please fill out the transducer application form below. Copy and either e-mail to sales@pvssensors.com or fax to 1-864-653-1047

TRANSDUCER APPLICATION

COMPANY NAME:

CONTACT NAME:

E-MAIL:

ADDRESS:

PHONE:

FAX:

WHAT IS THE APPLICATION OF THE TRANSDUCER:

APPROXIMATELY, HOW OFTEN WILL THIS APPLICATION CYCLE?

ELECTRICAL SUPPLY:

ELECTRICAL OUTPUT: (mA or V)

PORT CONNECTION:

ACCURACY:

PSI (BAR) RANGE:

ELECTRICAL TERMINATION (ALSO INCLUDE PIN OUT WIRING):

STORAGE TEMPERATURE (F OR C):

MEDIUM:

RESPONSE TIME REQUIRED FOR APPLICATION:

OVERLOAD PRESSURE:

SNUBBER REQUIRED?

DO YOU EXPECT RARE, MODERATE, FREQUENT OR CONSTANT PRESSURE SPIKES?

WILL PULL DOWN RESISTORS BE USED IN THE SYSTEM?

YOUR CURRENT SUPPLIER AND MODEL NUMBER:

TARGET PRICE:

ESTIMATED ANNUAL USAGE:

TIME FRAME FOR REQUIREMENT:

SAMPLE PROTOTYPE(S) REQUIRED BY:

OTHER SPECIAL REQUIREMENTS:

The IP Specification

FIRST NUMBER

Protection against solid objects

IP	TESTS
0	no protection
1	protected against solid objects up to 50mm (e.g. accidental touch by hands)
2	protected against solid objects up to 12mm (e.g. fingers)
3	protected against solid objects over 2.5mm (tools & wires)
4	protected against solid objects over 1mm (tools, wires & small wires)
5	protected against dust-limited ingress (no harmful deposit)
6	totally protected against dust

SECOND NUMBER

Protection against liquids

IP	TESTS
0	no protection
1	protected against vertically falling drops of water (e.g. condensation)
2	protected against direct sprays of water up to 15° from the vertical
3	protected against sprays to 60° from the vertical
4	protected against water sprayed from all directions limited ingress permitted
5	protected against low pressure jets of water from all directions limited ingress permitted
6	protected against strong jets of water (e.g. for use on ship decks limited ingress protection)
7	protected against the affects of immersions between 15cm and 1m
8	protected against long periods of immersion under pressure
9	protected against highly pressurized water and steam jet cleaning

Torque Specifications

PIPE RIGID - Tapered Pipe Threads (NPTF, N/NF) Carbon Steel

Pipe Size	Turns-from-Finger	Max Ft-Lbs	Max N-m
1/8" (-2)	3/4 - 1 3/4	12	16
1/4" (-4)	3/4 - 1 3/4	25	34
3/8" (-6)	3/4 - 1 3/4	40	54
1/2" (-8)	1/2 - 1 1/2	54	73
3/4" (-12)	1/2 - 1 1/2	78	106
1" (-16)	1/2 - 1 1/2	112	152
1 1/4" (-20)	1/2 - 1 1/2	154	209
1 1/2" (-24)	1/2 - 1 1/2	211	286
2" (-32)	1/2 - 1 1/2	300	407

BRITISH STANDARD PARALLEL PIPE (BSPP, ISO 1179)

Pipe Size	Turns-from-Finger	Max Ft-Lbs	Max N-m
1/8" - 28	2 to 3	13	18
1/4" - 19	2 to 3	37	50
3/8" - 19	2 to 3	46	63
1/2" - 14	2 to 3	118	160
3/4" - 14	2 to 3	148	200
1" - 11	2 to 3	250	340
1 1/4" - 11	1 1/2 - 2 1/2	332	450
1 1/2" - 11	1 1/2 - 2 1/2	413	560
2" - 11	1 1/2 - 2 1/2		

STUD END O-RING BOSS (ORB) SAE (U/UF)

Pipe Size	Thread UNF-2A	Max Ft-Lbs	Max N-m
-2	5/16" - 24	6-7	8-9
-3	3/8" - 24	8-9	11-12
-4	7/16" - 20	13-15	18-20
-5	1/2" - 20	17-19	23-26
-6	9/16" - 18	22-24	29-33
-8	3/4" - 16	40-43	49-53
-10	7/8" - 14	43-48	59-64
-12	1 1/16" - 12	68-75	93-102
-14	1 3/16" - 12	90-99	122-134
-16	1 5/16" - 12	112-123	151-166
-20	1 5/8" - 12	146-161	198-218
-24	1 7/8" - 12	154-170	209-231

STUD END O-RING BOSS (ORB) Metric

Pipe Size	ME/MCA (Torque N•m)	MCB Max Ft-Lbs	MB Max N-m
M8x1	8	n/a	n/a
M10x1	15	9	18
M12x1.5	25	20	30
M14x1.5	35	35	45
M16x1.5	40	45	65
M18x1.5	45	55	80
M22x1.5	60	65	140
M27x2	100	90	190
M30x2	130	n/a	n/a
M33x2	160	150	340
M42x2	210	240	500
M48x2	260	290	630
M60x2	315	n/a	n/a

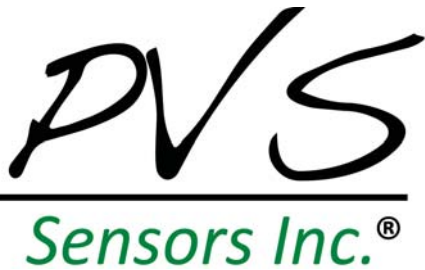


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Material Compatibility

Media	Buna	EPDM	Viton
Acetic Acid		*	
Acetone		*	
Acetylene	*		
Air	*		
Alcohols	*		
Alkalies (Weak)	*		
Alkalies (Strong)		*	
Ammonia (Anhydrous)	*		
Ammonia (Hydroxide)		*	
Asphalt			*
Automotive Oils	*		
Beer	*		
Benzene			*
Boric Acid	*		
Brake Fluid		*	
Bunker Oil	*		
Butane	*		
Butyl Cellosolve		*	
Carbon Dioxide	*		
Carbon Monoxide	*		
Cellube		*	
Chlorobenzene			*
Citric Acid	*		
Coke Oven Gas			*
Coolant	*		
Diesel Fuels	*		
Di-Ester Lube (MIL-L-7808)			*
Dowtherm A&E		*	
Ethanol	*		
Ether		*	
Ethylene	*		
Ethylene Glycol	*		
Freon 11, 12, 112, 114	*		
Freon 22		*	
Fyrquel		*	
Fuel Oil	*		
Gasoline	*		
Glycerin	*		
Helium	*		
Hexane	*		

Media	Buna	EPDM	Viton
Hydraulic Oil (PET Base)	*		
Hydrocarbons	*		
Hydrogen	*		
Hydrogen Sulphide		*	
Isopropanol		*	
JP-3-6	*		
Kerosene	*		
LPG	*		
Lube Oil (PET Base)	*		
Methanol	*		
MEK		*	
Mineral Oil	*		
Motor Oils	*		
Naptha		*	
Natural Gas	*		
Nitric Acid		*	
Nitrogen	*		
Cleum Spirits			*
Oxygen	*		
Ozone		*	
Crude Oil	*		
Phosphoric Acid			*
Propane	*		
Propanol	*		
Pydraul		*	
Shell Iris 902	*		
Silicone Greases	*		
Silicone Oils	*		
Skydrol 500 & 7000		*	
Soap Solutions	*		
Steam Below 320°F		*	
Stoddard Solvent	*		
Sulfuric Acid			*
Tolulene			*
Transmission Fluid A	*		
Trisodium Phosphate	*		
Turpentine	*	*	
Water to 220°F (104°C)	*		
Water to 302°F (150°C)		*	



Terms and Conditions

PAYMENT TERMS

Net 30 days. Automatic C.O.D. after 60 days without prior notification, FOB: West Union, SC

WARRANTY

PVS Sensors, Inc. (the "manufacturer") warrants this product only (the "product") to the original purchaser only (the "purchaser") against defective workmanship and materials under normal use of the product for a period of twelve (12) months from the date of shipment by PVS Sensors, Inc. This warranty is absolutely conditional upon the product having been properly installed, maintained and operated under conditions of normal use in accordance with the manufacturers recommended installation and operation instructions. Products which have become defective for any other reason, according to the manufactures discretion, such as improper installation, failure to follow recommended installation and operational instructions, neglect, willful damage, misuse, accidental damage, alteration or tampering, or repair by anyone other than the manufacturer, are not covered under this warranty.

THIS WARRANTY IS EXCLUSIVE AND EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES. OBLIGATIONS OR LIABILITIES, WHETHER WRITTEN, ORAL, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE. IN NO CASE SHALL THE MANUFACTURER BE LIABLE TO ANYONE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS WARRANTY OR ANY OTHER WARRANTIES WHATSOEVER, AS AFORESAID. THE MANUFACTURER SHALL IN NO EVENT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES OR FOR LOSS, DAMAGE, OR EXPENSE, INCLUDING LOSS OF USE, PROFITS, REVENUE, OR GOODWILL, DIRECTLY OR INDIRECTLY ARISING FROM PURCHASER'S USE OR INABILITY TO USE THE PRODUCT, OR FOR LOSS OR DESTRUCTION OF OTHER PROPERTY OR FROM ANY OTHER CAUSE, EVEN IF MANUFACTURER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. THE MANUFACTURER SHALL HAVE NO LIABILITY FOR ANY DEATH, PERSONAL AND/OR BODILY INJURY AND/OR DAMAGE TO PROPERTY OR OTHER LOSS WHETHER DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR OTHERWISE, BASED ON A CLAIM THAT THE PRODUCT FAILED TO FUNCTION.

However, if the manufacturer is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty, the manufacturer's maximum liability (if any) shall not exceed the purchase price of the product, which shall be fixed as liquidated damages and not as a penalty, and shall be the complete and exclusive remedy against the manufacturer.

When accepting the delivery of the product, the purchaser agrees to the said conditions of sale and warranty and he recognizes having been informed of. Some jurisdictions do not allow the exclusion of limitation of incidental or consequential damages, so these limitations may not apply under certain circumstances. The manufacturers obligations under this warranty are limited solely to repair and/or replace at the manufacture's discretion any product or part thereof that may prove defective. Any repair and/or replacement shall not extend the warranty period. The manufacturer shall not be responsible for dismantling and/or reinstallation costs. To exercise this warranty the product must be returned to the manufacturer freight pre-paid and insured. All freight and insurance costs are the responsibility of the purchaser and are not included in this warranty. This warranty shall not be modified, varied or extended, and the manufacturer does not authorize any person to act on its behalf in the modification, variation or extension of this warranty. This warranty shall apply to the product only. This warranty is exclusive to the original purchaser and is not assignable. This warranty is in addition to and does not affect your legal rights. Any provision in this warranty which is contrary to the law in the state or country where the product is supplied shall not apply.

RETURNED GOODS - PVS Sensors Inc. reserves the right to accept material back at our descretion. All returns must be accompanied by our Return Authorization Form. PVS Sensors Inc., is not responsible for material returned without authorization. Material may be returned for a credit less a 25% restocking fee with an order of equal value or less 50% restocking fee without an order of equal value provided materials are in saleable condition and freight is prepaid. All returns for restock must be accompanied by a copy of the original invoice, otherwise items are assumed to have been purchased at the maximum discount and credit is issued accordingly.

CREDIT ISSUE POLICY - Credit balances can be offered by material purchase only. Cash payments are not allowed. PVS Sensors Inc. reserves the right to assess a restocking fee on all items returned for credit.

PRICING - Subject to change without prior notification.

SPECIAL ORDERS - Special orders are not cancellable.

CONDITIONS - PVS Sensors Inc. must have a copy of your sales tax exemption certificate on file. Any discrepancies in either billing or shipping must be reported within 30 days from receipt of order. The carrier must be contacted if package is damaged when received and goods must be kept with original packaging for inspection by the carrier.

Serving these industries and more.

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Hydraulic Fluid Power Units
Pneumatic
Refrigerant
Water Pumps

Air Conditioning
Waste Compaction
Mining
Agriculture
CNC

