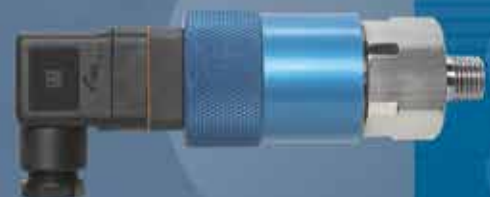


CUSTOM ENGINEERED SWITCHES

Engineered Solutions for
The Most Severe Pressure,
Vacuum and Temperature
Applications



NASON

NEW THINKING



CD High Pressure Switch



NV Vacuum Switch



TD Temperature Switch



NT 40 Transducer

PRESSURE SWITCHES 8

SQ	Low Pressure Switch	9
SM	Low Pressure Switch	10
MM	Low Pressure Switch	11
LM	Low Pressure Switch	12
CJ	Low Pressure Switch	13
XM	High Pressure Switch	14
WX	High Pressure Switch	15
CD	High Pressure Switch	16
CF	High Pressure Switch (Fixed Set Point)	17

VACUUM SWITCHES 18

VM	Vacuum Switch	19
NV	Vacuum Switch	20
VP	Vacuum Switch	21
	Pressure / Vacuum Switch Optional Configurations	22
	Pressure / Vacuum Switch Media Connection Designations	23
	Pressure / Vacuum Switch Application Worksheet	25

TEMPERATURE SWITCHES 26

TT	Temperature Switch	27
TD	Temperature Switch	28
TM	Temperature Switch	29
HT	Temperature Switch	30
	Temperature Switch Media Connection Designations	31
	Temperature Switch Optional Configurations	33
	Temperature Switch Application Worksheet	34

TRANSDUCERS 35

NT100	Transducer	36
NT40	Transducer	38
NT25	Transducer	40

RESOURCES

	Basic Electrical Connection Options	7
	Diaphragm Compatibility	42
	Conversion Tables	43
	Glossary of Terms	44

NEW THINKING
for better solutions



After more than sixty years of producing quality electrical, hydraulic, and pneumatic components for use in military and industrial applications, we've established ourselves as industry leaders in efficiency, flexibility, and customer service. Our line of custom engineered switches, offers proven reliability and unmatched customization.

Parts made by Nason are used around the globe in the harshest of environments, where engineers and users depend on the precision and reliability we promise to each of our clients. Our switches undergo rigid testing to ensure reliable service. We leave nothing to chance, crafting and assembling all parts within our own plant in the United States.

Our offering of options in ratings, connections, and mounting is unmatched in the industry. Besides our extensive stock of legacy switches, we keep an incredibly diverse supply of optional media and electrical connections to match our clients' varied design specifications. Whatever your challenge, our technical support is available to you before and after the sale.

Our 50,000 square foot manufacturing facility, staffed with experienced design engineers and customer service representatives, exists solely to meet your engineering needs, big or small. We offer free switch samples to let you make sure that our customized design fits your particular application, so you can specify Nason with confidence. And we require no minimum orders, so even the smallest design challenge is no problem. Once you've looked over our products' 3D CAD models and have made your design decisions, our extensive component inventory will ensure rapid assembly, often shipping products within days.

Contact Nason to see how our custom engineered switches can fit your exact application.



NASON SWITCH DESIGNS ENSURE HIGH RELIABILITY

All of Nason's pressure switches use a snap-action electrical device activated by an elastomer diaphragm or piston, offering a precise and repeatable design. The snap-action design will maintain its state with contacts either open or closed, until a precise set point is reached when it will snap over center to a new state. It will remain in that state until a distinct change towards its original setting is sensed, at which time it will snap back to its original state. The design's snap-action feature prevents contact intermittency near its switch point, which is common in creeper designs. As system pressures fluctuate, our switches inherent differential prevents searching. Nason uses only the highest quality snap-action switches. These switches and Nason's are UL, CSA, and military approved.

Accuracy

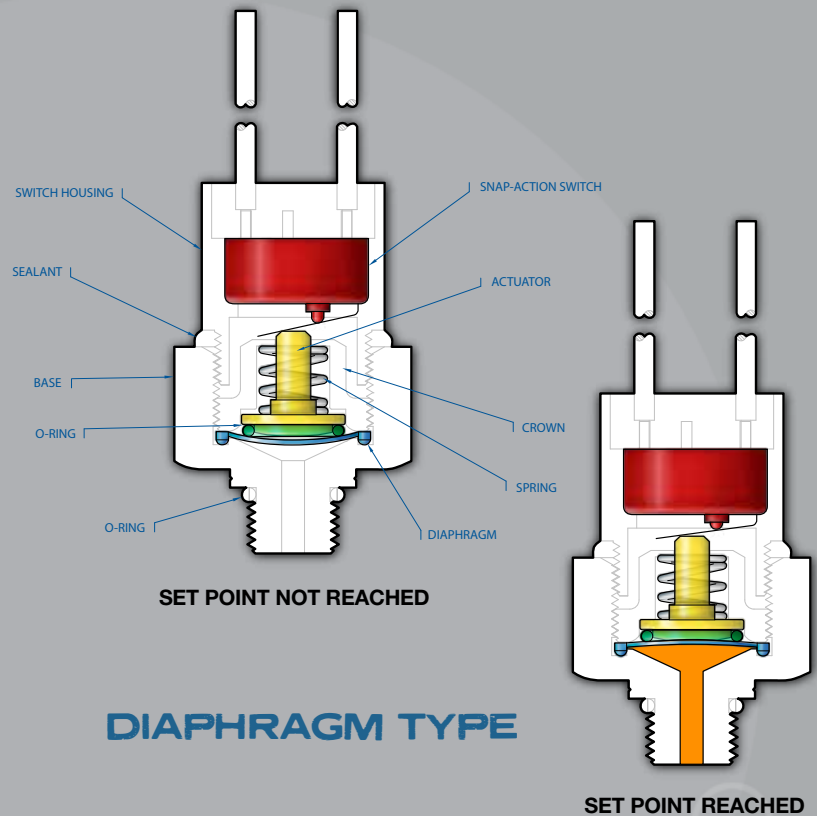
Our elastomer diaphragm or piston, which moves a precise .040 of an inch, ensures accurate, instantaneous contact under all operating conditions. While nitrile is preferred for general use, we can also provide ethylene propylene, fluorocarbon, fluorosilicone, and neoprene, depending on your need. Nason tests 100% of its switches for accuracy.

Reliability

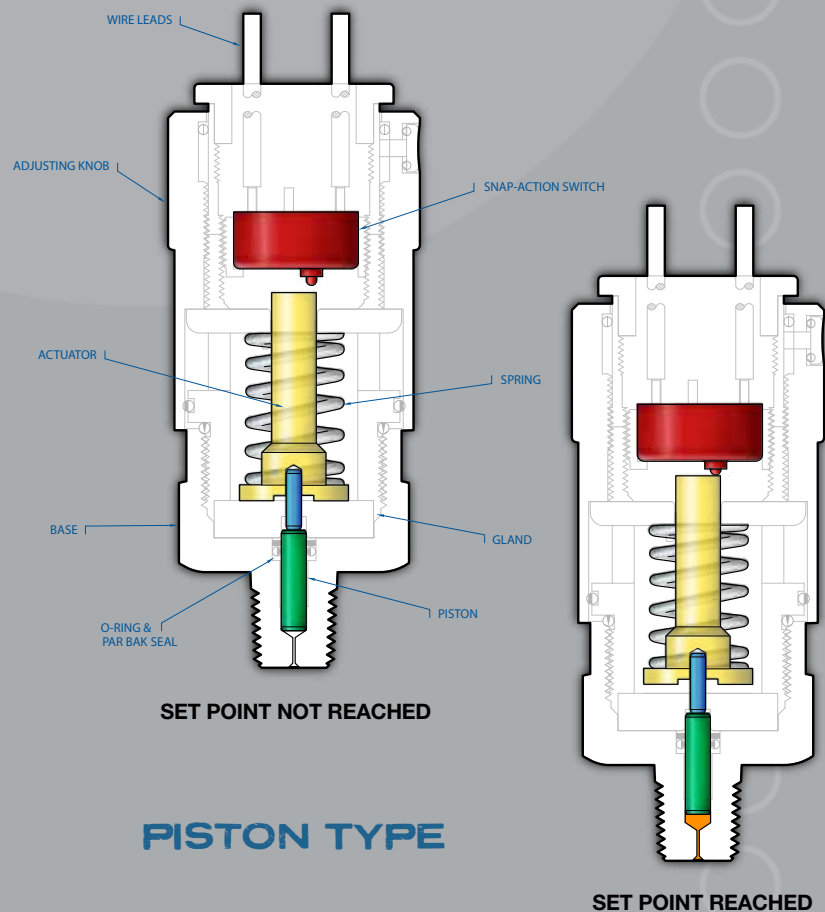
Under most operating conditions, Nason switches have an operational life of over one million cycles. Smart design, quality components, and careful assembly make a switch that easily outlasts the competition.

Flexibility

We offer media connections in NPT, BSP, SAE, JIS, DIN, MS, and many more (refer to page 23) as well as all the electrical connections depicted on the facing page.



DIAPHRAGM TYPE



PISTON TYPE

MORE ELECTRICAL CONNECTIONS THAN THE COMPETITION

Nason knows that your designs are used in all types of applications imaginable, so we want to make sure you have a choice of how you configure electrical connections. We offer you a wide and growing selection of connections, and if you want something else, just ask our design engineers for it.



Screw Terminals
#8 — 32



HF
DIN43650A
1/2" Conduit
(Plug & Receptacle)



HH
DIN43650A
(Plug Only)



HR
DIN43650A
Strain Relief
(Plug & Receptacle)



HP
9.4mm DIN
(Plug Only)



HM
9.4mm DIN
(Plug & Receptacle)



MP
Metri-Pack
Female 280
Series Sealed



NP
Metri-Pack
Male 280
Series Sealed



CP
Metri-Pack
Female 150
Series Sealed



DP
Metri-Pack
Male 150
Series Sealed



PP
Boot
(Military
Connector)



QC
1/4" Male
Spade Quick
Connect



WL
Wire Leads



WP
Weather Pack
(Female)



TP
Weather Pack
(Male)



EL
1/2" NPT
Male
Conduit



EF
1/2" NPT
Female
Conduit



WD
Deutsch
Receptacle



PD
Deutsch
Plug



ES
M12 - 4PIN



CL
Sheathed
18 AWG
Primaries



SL
SJO
Cable



VL
Convolute
Covering

Color Code:

Black – Common

Red – Normally Open

Blue – Normally Closed

Pin Assignments:

A – Normally Open

B – Common

C – Normally Closed

DIN Connector Pin Assignments: #1 – Common

#2 – Normally Closed

#3 – Normally Open

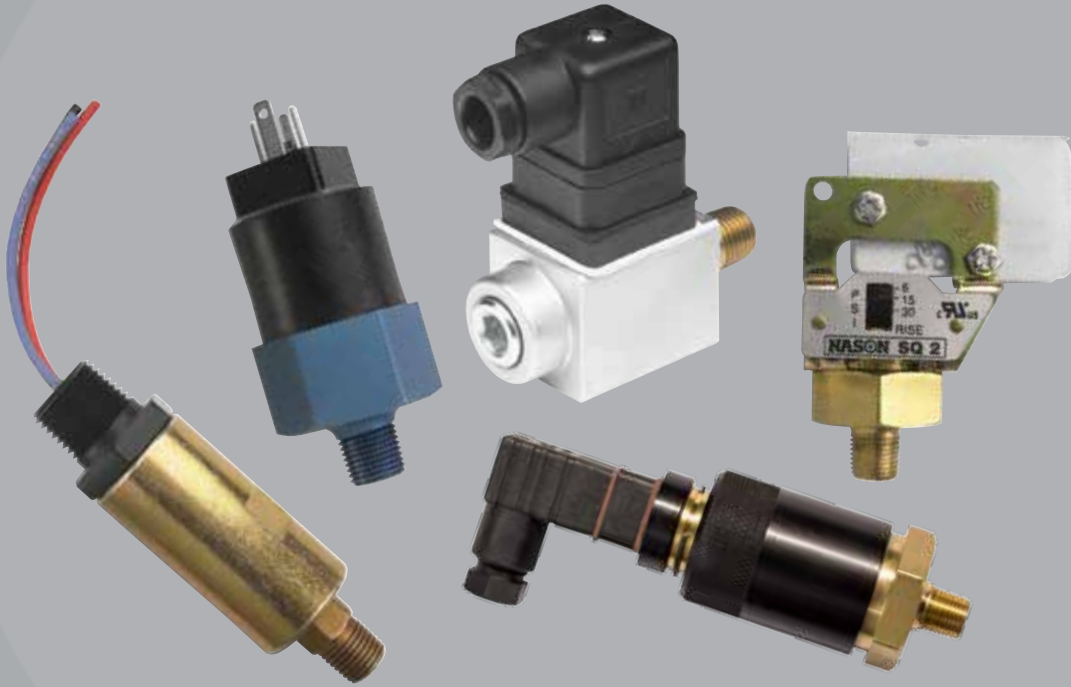
#4 – Not Used

M12 Connector Pin Assignments: #1 – Common

#2 – Not Used

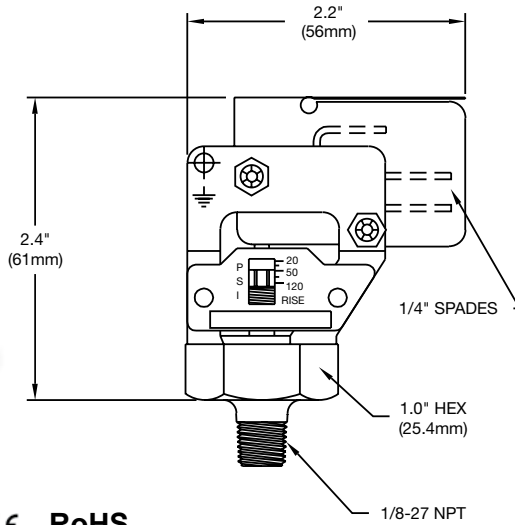
#3 – Normally Open

#4 – Normally Closed



PRESSURE SWITCHES

- Low to high pressure switch models with 2 psi to 7500 psi set points
- High-quality snap-action design
- Long-life elastomer diaphragms
- Proven sealed piston sensor on high-pressure models
- Over one million operating cycles
- 100% tested for accuracy
- Models for both pneumatic and hydraulic applications
- Adjustable and factory preset models
- Customizable
- NEMA 4 and 13 available



Features

- Long-life elastomer diaphragm
- High-quality snap-action switch
- Fingertip adjustment
- Visual calibration
- Economical
- Quick delivery

UL US CE RoHS

Operating Specifications

Set Point Range	2 – 120 PSI	(.14 – 8.3 Bar)
Set Point Tolerance	±1 PSI or 5%	(.07 Bar)
Maximum Operating Pressure	250 PSI	(17 Bar)
Proof Pressure	750 PSI	(51 Bar)
Differential	10 – 20%	
Current Rating	10 A @ 125/250 VAC	5 A @ 30 VDC
Media Connection	1/8" NPT Male Brass	
Circuit Form	SPDT	
Electrical Connection	1/4" Blades	
Diaphragm Material	Buna N	
Cycle Life	1 Million	

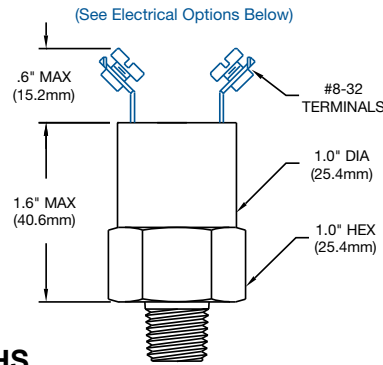
In-Stock Low Pressure Switches



Model	SQ-1	SQ-2	SQ-3
Adjustment Range	2 – 10 PSI	6 – 30 PSI	20 – 120 PSI



Shown with HP electrical option



UL **CE** **RoHS**

Features

- Long-life elastomer diaphragm
- High-quality snap-action switch
- Factory preset
- Available in a wide range of configurations
- Economical
- Pneumatic and hydraulic applications
- NEMA 4, 13

Operating Specifications

Set Point Range	2 – 120 PSI	(.14 – 8.3 Bar)
Set Point Tolerance	±1 PSI or 5%	(.07 Bar)
Maximum Operating Pressure	250 PSI	(17 Bar)
Proof Pressure	750 PSI	(51 Bar)
Differential	8 – 16%	
Current Rating	5 A @ 250 VAC	5 A @ 30 VDC (Resistive)
Media Connection	Standard: Brass (<i>Optional: Aluminum, Nickel Plating, Delrin, Zinc Plated Steel, 303 SS, 316 SS</i>)	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Diaphragm Material	Buna N	
Cycle Life	1 Million	

How to Order (Example: Part Number: **SM - 2A - 95R / ***)

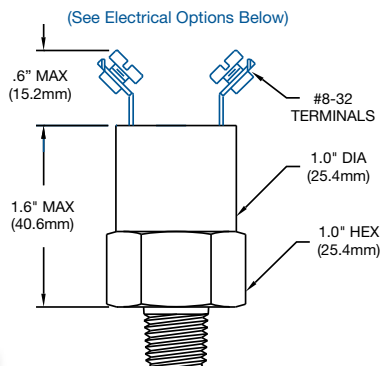
SM	-	2	A	-	9	5	R	/	*
Media Connection		Circuit Form		Fixed Set Point		Set Point Direction		Electrical Options	
1 1/4" NPT Male		A SPST-NO		2 – 120 PSI		R Rising		WL Wire Leads 18"	
2 1/8" NPT Male		B SPST-NC				F Falling		QC 1/4" Spade Connection	
6 7/16" SAE O-Ring (-4)		C SPDT						WP Weather Pack	
14 1/2" NPT Male 1/8" NPT Female								HR DIN43650A Connector	
17 1/4" BSPP Male (G1/4)								MP Metri-Pack	
28 1/8" BSPP Male (G1/8)								AT 10 A @ 125/250 VAC 5 A @ 30 VDC	
41 7/16" – 20 Internal 45° Flare – SAE J 513								GG Internal Ground	
77 M16 x 1.5 SAE J2244-3								AU Gold Plate/Alloy for low currents	

* Defaults to Screw Terminals

For more **media connections**, see pages 23-24.

For all available **optional configurations**, see page 22.

For more **electrical connections**, see page 7.



UL **CE** **RoHS**

Shown with WP electrical option

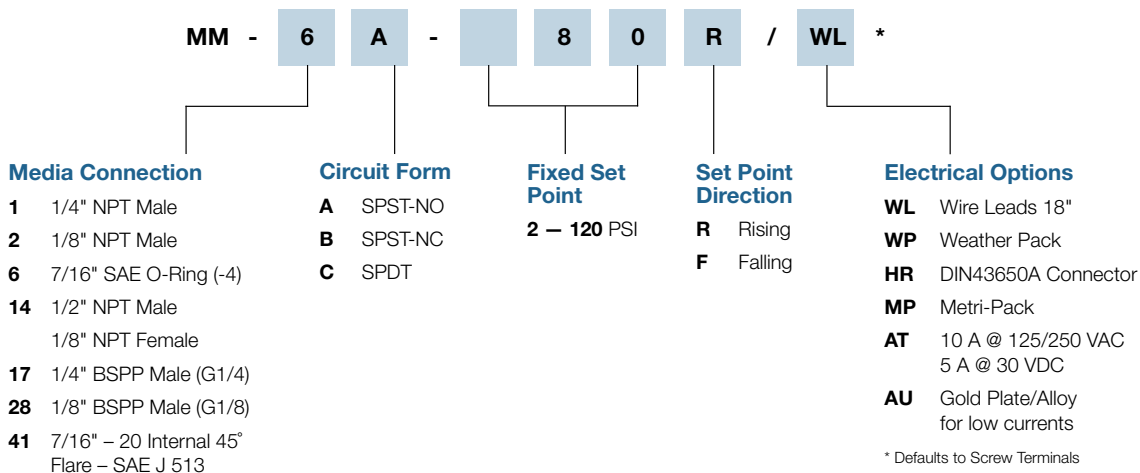
Features

- Long-life elastomer diaphragm
- High-quality snap-action switch
- Factory preset
- Available in a wide range of configurations
- Economical
- Pneumatic and hydraulic applications
- NEMA 4, 13

Operating Specifications

Set Point Range	2 — 120 PSI	(.14 — 8.3 Bar)
Set Point Tolerance	±1 PSI or 5%	(.07 Bar)
Maximum Operating Pressure	600 PSI	(41 Bar)
Proof Pressure	1800 PSI	(124 Bar)
Differential	8 — 16%	
Current Rating	5 A @ 250 VAC	5 A @ 30 VDC (Resistive)
Media Connection	Standard: Brass (Optional: Aluminum, Nickel Plating, Delrin, Zinc Plated Steel, 303 SS, 316 SS)	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Diaphragm Material	Buna N	
Cycle Life	1 Million	

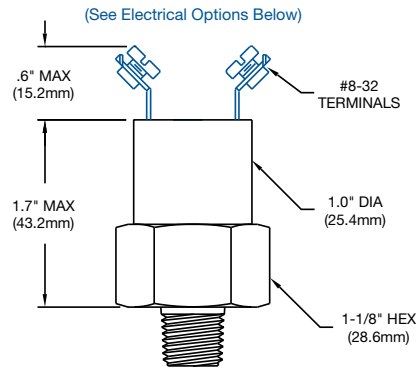
How to Order (Example: Part Number: **MM - 6A - 80R / WL**)



For more [media connections](#), see pages 23-24.

For all available [optional configurations](#), see page 22.

For more [electrical connections](#), see page 7.



Shown with unibody housing and EF electrical option

UL **CE** **RoHS**

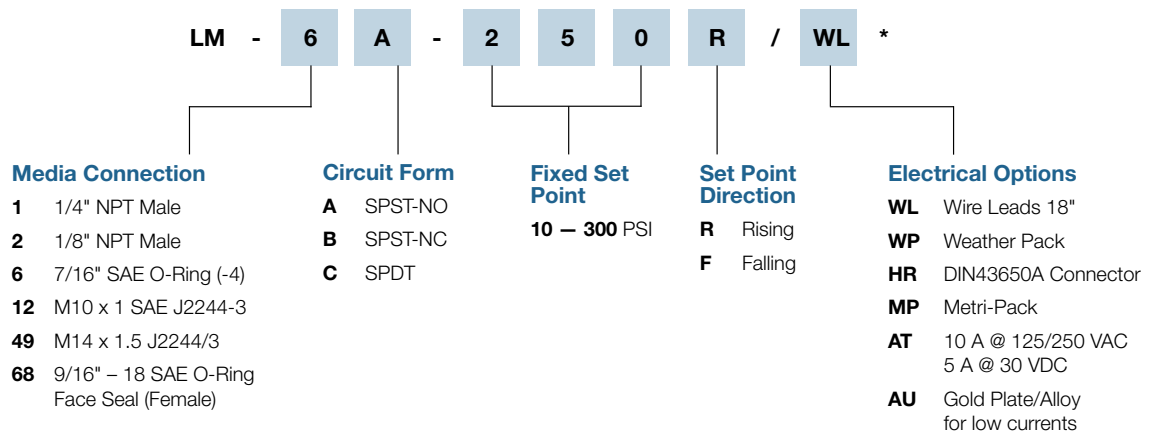
Features

- Long-life elastomer diaphragm
- High-quality snap-action switch
- Factory preset
- Available in a wide range of configurations
- Economical
- Pneumatic and hydraulic applications
- NEMA 4, 13

Operating Specifications

Set Point Range	10 – 300 PSI	(.69 – 20 Bar)
Set Point Tolerance	±1 PSI or 5%	(.07 Bar)
Maximum Operating Pressure	2000 PSI	(137 Bar)
Proof Pressure	6000 PSI	(413 Bar)
Differential	12 – 24%	
Current Rating	5 A @ 250 VAC	5 A @ 30 VDC (Resistive)
Media Connection	Standard: Brass (Optional: Nickel Plating, Delrin, Zinc Plated Steel, 303 SS, 316 SS)	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Diaphragm Material	Buna N	
Cycle Life	1 Million	

How to Order (Example: Part Number: **LM - 6A - 250R / WL**)

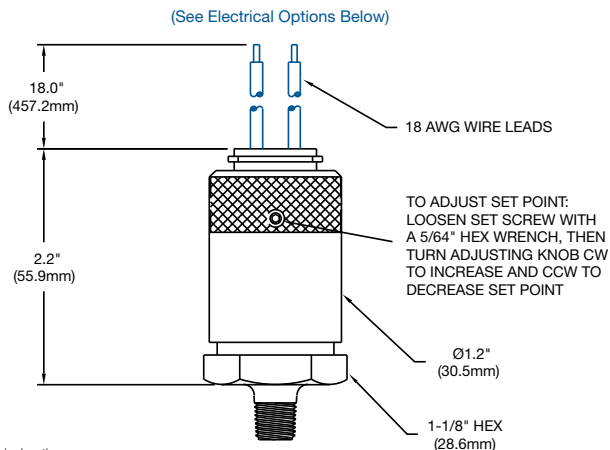


* Defaults to Screw Terminals

For more **media connections**, see pages 23-24.

For all available **optional configurations**, see page 22.

For more **electrical connections**, see page 7.



Shown with HM electrical option

UL **CE** **RoHS**

Features

- Long-life elastomer diaphragm
- High-quality snap-action switch
- Field adjustable
- Compact design
- Easily customized
- Quick delivery
- NEMA 4, 13

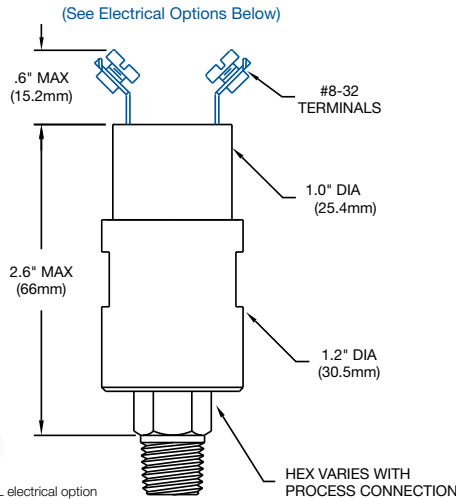
Operating Specifications

Set Point Range	3 — 120 PSI	(.21 — 8.3 Bar)
Set Point Tolerance	±1 PSI or 5%	(.07 Bar)
Maximum Operating Pressure	250 PSI	(17 Bar)
Proof Pressure	750 PSI	(51 Bar)
Differential	10 — 20%	
Current Rating	3 A @ 125 VAC	2 A @ 30 VDC (Resistive)
Media Connection	Standard: Brass (Optional: Aluminum, Nickel Plating, Delrin, 303 SS, 316 SS)	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Diaphragm Material	Buna N	
Cycle Life	1 Million	

How to Order (Example: Part Number: **CJ - 1B3 - 60J / WL**)

CJ	-	1	B	3	-	6	0	J	/	WL
Media Connection	Circuit Form	Range	Desired Set Point	Set Point Direction	Electrical Options					
1 1/4" NPT Male	A SPST-NO	1 3 — 10 PSI	3 — 120 PSI	J Rising Adjustable	WL Wire Leads 18"					
2 1/8" NPT Male	B SPST-NC	2 6 — 30 PSI	*121 — 1500 PSI	G Falling Adjustable	WP Weather Pack					
6 7/16" SAE O-Ring (-4)	C SPDT	3 20 — 120 PSI			HM 9.4mm DIN					
12 M10 x 1 SAE J2244-3		4* 100 — 400 PSI			MP Metri-Pack					
17 1/4" BSPP Male		5* 500 — 1500 PSI			AU Gold Plate/Alloy for low currents					
28 1/8" BSPP Male										

* Not yet UL recognized



Shown with unibody housing and EL electrical option

UL US **CE** **RoHS**

Features

- Long-life elastomer diaphragm
- High-quality snap-action switch
- Factory preset
- Compact design
- Available in a wide range of configurations
- Proven in the most demanding mobile hydraulic applications
- NEMA 4, 13

Operating Specifications

Set Point Range	40 — 4000 PSI	(1.3 — 275 Bar)
Set Point Tolerance	±5 PSI or 5%	(.34 Bar)
Maximum Operating Pressure	5000 PSI	(344 Bar)
Proof Pressure	15000 PSI	(1034 Bar)
Differential	8 — 16%	
Current Rating	5 A @ 250 VAC	5 A @ 30 VDC (Resistive)
Media Connection	Standard: Zinc Plated Steel (<i>Optional: Brass, Nickel Plating, 303 SS, 316 SS</i>)	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Diaphragm Material	Buna N	
Cycle Life	1 Million	

How to Order (Example: Part Number: **XM - 1A - 1500R / WL** *)

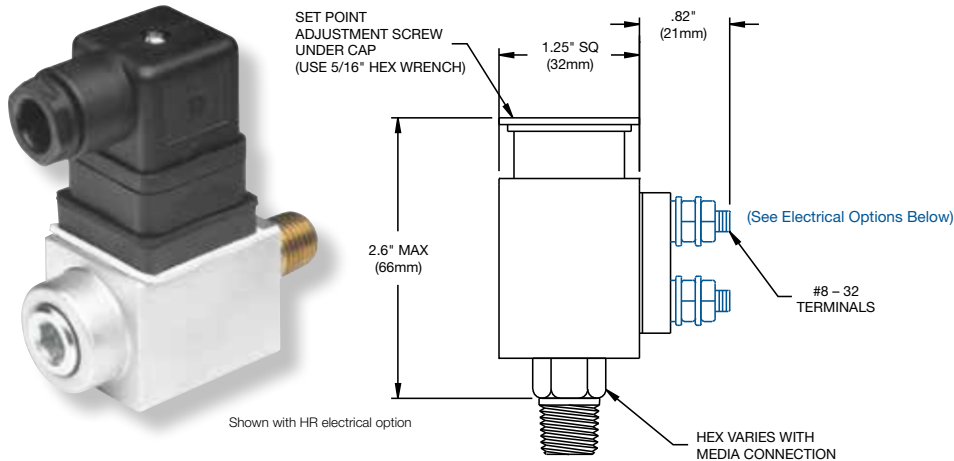
XM -	1	A	-	1	5	0	0	R	/	WL	*
Media Connection		Circuit Form		Fixed Set Point		Set Point Direction		Electrical Options			
1 1/4" NPT Male		A SPST-NO		40 — 4000 PSI		R Rising		WL Wire Leads 18"			
2 1/8" NPT Male		B SPST-NC				F Falling		WP Weather Pack			
4 7/16" SAE 37° Flare (-4)		C SPDT						HR DIN43650A Connector			
6 7/16" SAE O-Ring (-4)								MP Metri-Pack			
11 9/16" SAE O-Ring (-6)								AT 10 A @ 125/250 VAC 5 A @ 30 VDC			
17 1/4" BSPP Male (G1/4)								AU Gold Plate/Alloy for low currents			
47 1/4" - 19BSPP Female (G1/4)											

* Defaults to Screw Terminals

For more [media connections](#), see pages 23-24.

For all available [optional configurations](#), see page 22.

For more [electrical connections](#), see page 7.



UL **CE** **RoHS**

Features

- Long-life elastomer diaphragm
- High-quality snap-action switch
- Field adjustable
- Compact design
- Available in a wide range of configurations
- Proven in the most demanding mobile hydraulic applications
- NEMA 4, 13

Operating Specifications

Set Point Range	50 — 5000 PSI	(1.38 — 344 Bar)
Set Point Tolerance	±5 PSI or 5%	(.34 Bar)
Maximum Operating Pressure	5000 PSI	(344 Bar)
Proof Pressure	15000 PSI	(1034 Bar)
Differential	3 — 10%	
Current Rating	5 A @ 250 VAC	5 A @ 30 VDC (Resistive)
Media Connection	Standard: Zinc Plated Steel (<i>Optional: Brass, Nickel Plating, 303 SS, 316 SS</i>)	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Diaphragm Material	Buna N	
Cycle Life	1 Million	

How to Order (Example: Part Number: **WX - 2A - 100J / HR**)

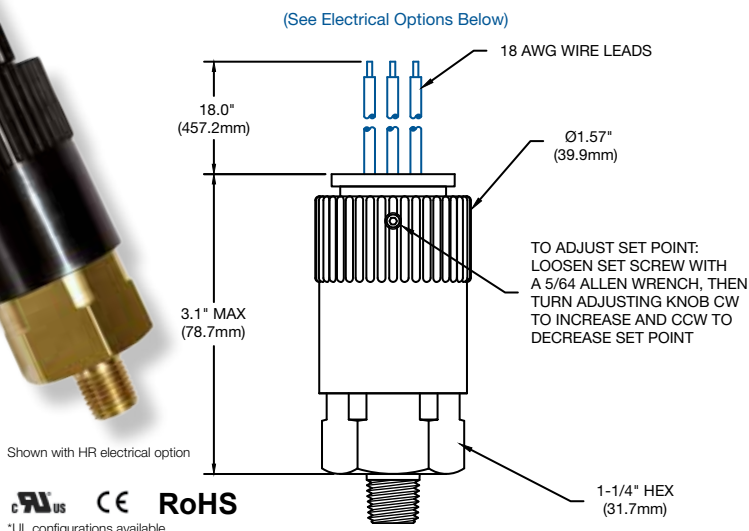
WX -	2	A -	1	0	0	J /	HR *
Media Connection		Circuit Form	Adjustment Range	Set Point Direction		Electrical Options	
1 1/4" NPT Male		A SPST-NO	50 — 150 PSI	J Rising Adjustable		WL Wire Leads 18"	
2 1/8" NPT Male		B SPST-NC	140 — 400 PSI	G Falling Adjustable		QC 1/4" Spade Connection	
4 7/16" SAE 37° Flare (-4)		C SPDT	300 — 800 PSI			WP Weather Pack	
6 7/16" SAE O-Ring (-4)			700 — 2500 PSI			HR DIN43650A Connector	
11 9/16" SAE O-Ring (-6)			2000 — 5000 PSI			MP Metri-Pack	
17 1/4" BSPP Male (G1/4)						AT 10 A @ 125/250 VAC 5 A @ 30 VDC	
39 1/4" - 18 NPTF SAE J516 (-4)						GG Internal Ground	
67 9/16" - 18 SAE O-Ring Face Seal						AU Gold Plate/Alloy for low currents	

* Defaults to Screw Terminals

For more [media connections](#), see pages 23-24.

For all available [optional configurations](#), see page 22.

For more [electrical connections](#), see page 7.



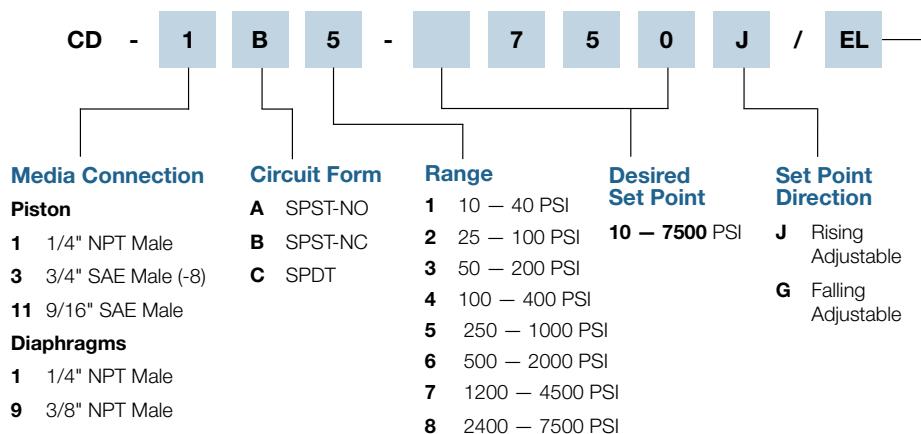
Features

- Long-life elastomer diaphragm (Ranges 1 – 3)
- Proven sealed piston sensor (Ranges 4 – 8)
- High-quality snap-action switch
- Field adjustable
- Easily customized
- Quick delivery
- NEMA 4, 13

Operating Specifications

Set Point Range	10 – 7500 PSI	(.69 – 310 Bar)
Set Point Tolerance	±5 PSI or 5%	(.34 Bar)
Maximum Operating Pressure	2000 PSI (Ranges 1 – 3)	(137 Bar)
	5000 PSI (Ranges 4 – 7)	(344 Bar)
	7500 PSI (Range 8)	(517 Bar)
Proof Pressure	6000 PSI (Ranges 1 – 3)	(413 Bar)
	15000 PSI (Ranges 4 – 7)	(1034 Bar)
	22500 PSI (Range 8)	(1551 Bar)
Differential	10 – 20%	
Current Rating	5 A @ 250 VAC	5 A @ 30 VDC (Resistive)
Media Connection	Standard: Brass (<i>Optional: Nickel Plating, 303 SS, 316 SS</i>)	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Diaphragm Material	Buna (Ranges 1 – 3)	
	Hardened Steel Piston (Ranges 4 – 8)	
Cycle Life	1 Million	

How to Order (Example: Part Number: **CD - 1B5 - 750J / EL**)



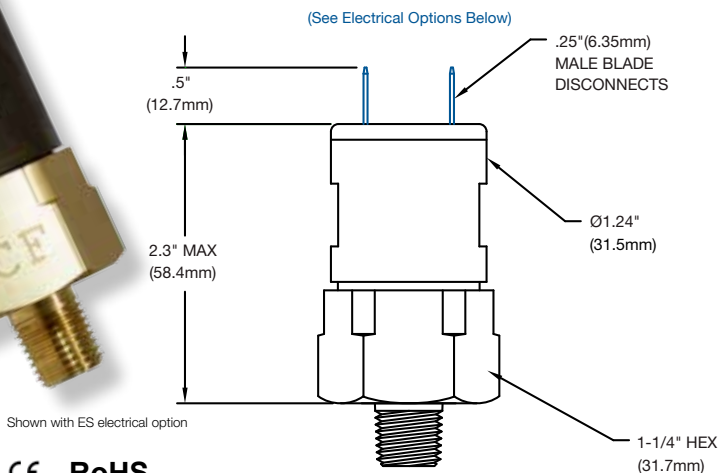
Electrical Options

- WL** Wire Leads 18"
- EL** Male Conduit 1/2" – 14
- EF** Female Conduit 1/2" – 14
- HR** DIN43650A Connector
- HH** DIN43650A Plug Only
- WP** Weather Pack
- MP** Metri-Pack
- WD** Deutsch
- AT** 10 A @ 125/250 VAC
5 A @ 30 VDC
- AU** Gold Plate/Alloy for low currents

For more [media connections](#), see pages 23-24.

For all available [optional configurations](#), see page 22.

For more [electrical connections](#), see page 7.



CE RoHS

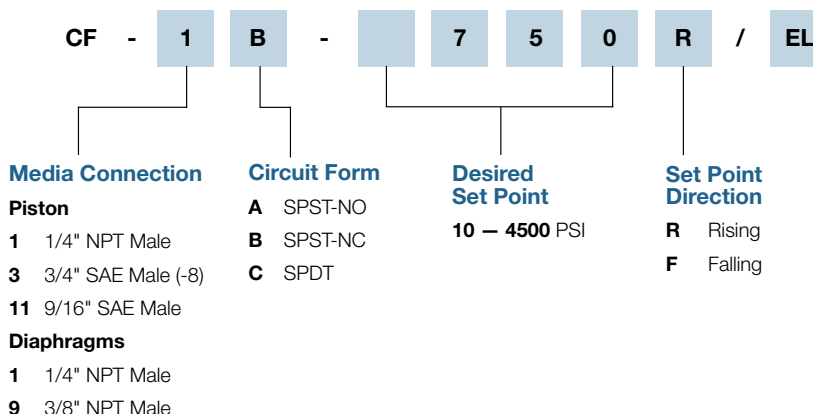
Features

- Long-life elastomer diaphragm (Set Points: 10 – 300 PSI)
- Proven sealed piston sensor (Set Points: 100 – 4500 PSI)
- High-quality snap-action switch
- Easily customized
- Quick delivery
- NEMA 4, 13

Operating Specifications

Set Point Range	10 – 4500 PSI	(.69 – 310 Bar)
Set Point Tolerance	±5 PSI or 5%	(.34 Bar)
Maximum Operating Pressure	2000 PSI (Diaphragm Model)	(137 Bar)
	5000 PSI (Piston Model)	(344 Bar)
Proof Pressure	6000 PSI (Diaphragm Model)	(413 Bar)
	15000 PSI (Piston Model)	(1034 Bar)
Differential	10 – 20%	
Current Rating	5 A @ 250 VAC	5 A @ 30 VDC (Resistive)
Media Connection	Standard: Brass (Optional: Nickel Plating, 303 SS, 316 SS)	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Diaphragm Material	Buna (Diaphragm Design)	
	Hardened Steel Piston (Piston Design)	
Cycle Life	1 Million	

How to Order (Example: Part Number: **CF - 1B - 750R / EL**)



Electrical Options

- WL** Wire Leads 18"
- EL** Male Conduit 1/2" – 14
- EF** Female Conduit 1/2" – 14
- HR** DIN43650A Connector
- HH** DIN43650A Plug Only
- WP** Weather Pack
- MP** Metri-Pack
- WD** Deutsch
- AT** 10 A @ 125/250 VAC
5 A @ 30 VDC
- AU** Gold Plate/Alloy for low currents

For more [media connections](#), see pages 23-24.

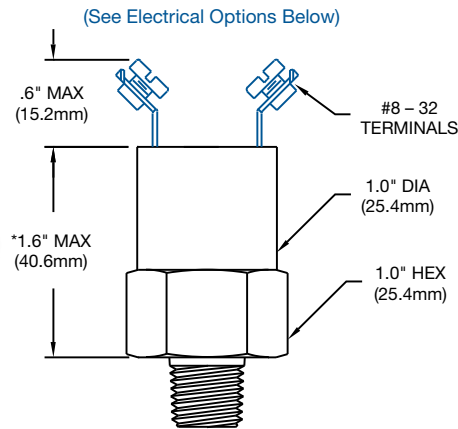
For all available [optional configurations](#), see page 22.

For more [electrical connections](#), see page 7.



VACUUM SWITCHES

- 1" to 29" vacuum models available
- Long-life elastomer diaphragms
- High-quality snap-action design
- Factory preset or field adjustable
- Over one million operating cycles
- 100% tested for accuracy
- NEMA 4 and 13 available



Features

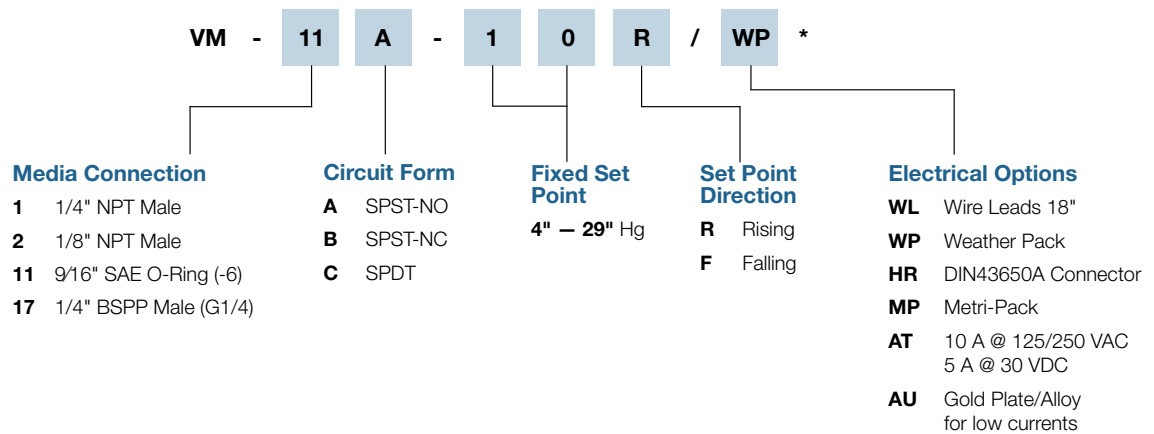
- Long-life elastomer diaphragm
- High-quality snap-action switch
- Factory preset
- Available in a wide range of configurations
- Economical
- NEMA 4, 13

UL **CE** **RoHS**

Operating Specifications

Set Point Range	4" — 29" Hg	(102mm — 736mm Hg)
Set Point Tolerance	±2" Hg	(50mm Hg)
Maximum Operating Pressure	250 PSI	(17 Bar)
Differential	20 — 40%	
Current Rating	5 A @ 250 VAC	5 A @ 30 VDC (Resistive)
Media Connection	Standard: Brass (Optional: Aluminum, Nickel Plating, Delrin, 303 SS, 316 SS)	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Diaphragm Material	Buna N	
Cycle Life	1 Million	

How to Order (Example: Part Number: **VM - 11A - 10R / WP** *)



* Defaults to Screw Terminals

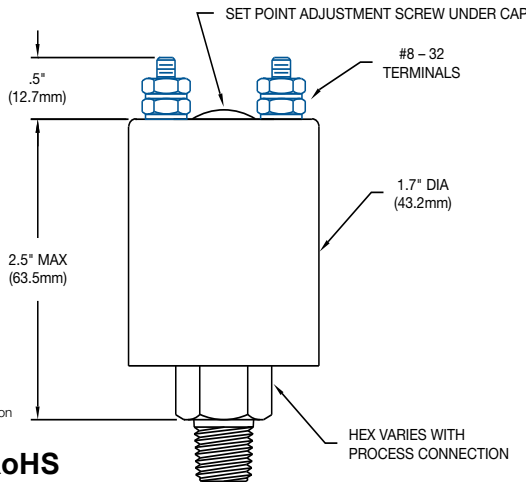
For more [media connections](#), see pages 23-24.

For all available [optional configurations](#), see page 22.

For more [electrical connections](#), see page 7.



(See Electrical Options Below)



Shown with HR electrical option

UL **CE** **RoHS**

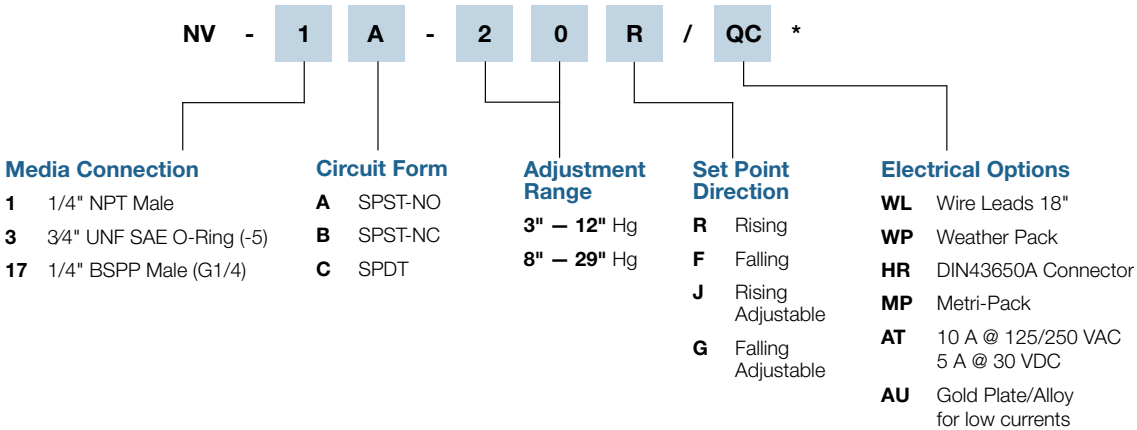
Features

- Long-life elastomer diaphragm
- High-quality snap-action switch
- Factory preset or field adjustable
- Available in a wide range of configurations
- Economical
- NEMA 4, 13

Operating Specifications

Set Point Range	3" — 29" Hg	(76mm — 736mm Hg)
Set Point Tolerance	±2" Hg	(50mm Hg)
Maximum Operating Pressure	250 PSI	(17 Bar)
Differential	20 — 40%	
Current Rating	5 A @ 250 VAC	5 A @ 30 VDC (Resistive)
Media Connection	Standard: Brass (<i>Optional: Aluminum, Nickel Plating, Delrin, 303 SS, 316 SS</i>)	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Diaphragm Material	Buna N	
Cycle Life	1 Million	

How to Order (Example: Part Number: **NV- 1A - 20R / QC** *)

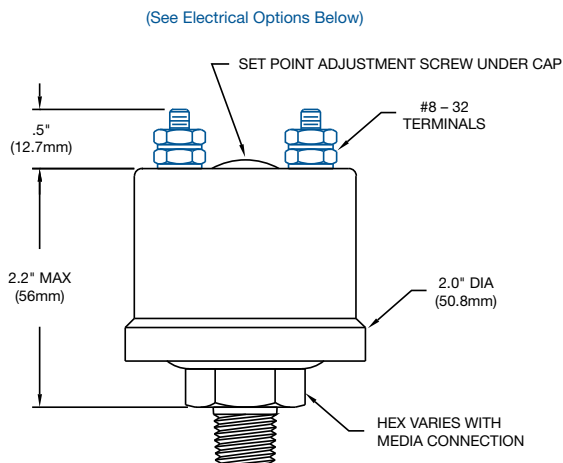


* Defaults to Screw Terminals

For more **media connections**, see pages 23-24.

For all available **optional configurations**, see page 22.

For more **electrical connections**, see page 7.



UL **CE** **RoHS**

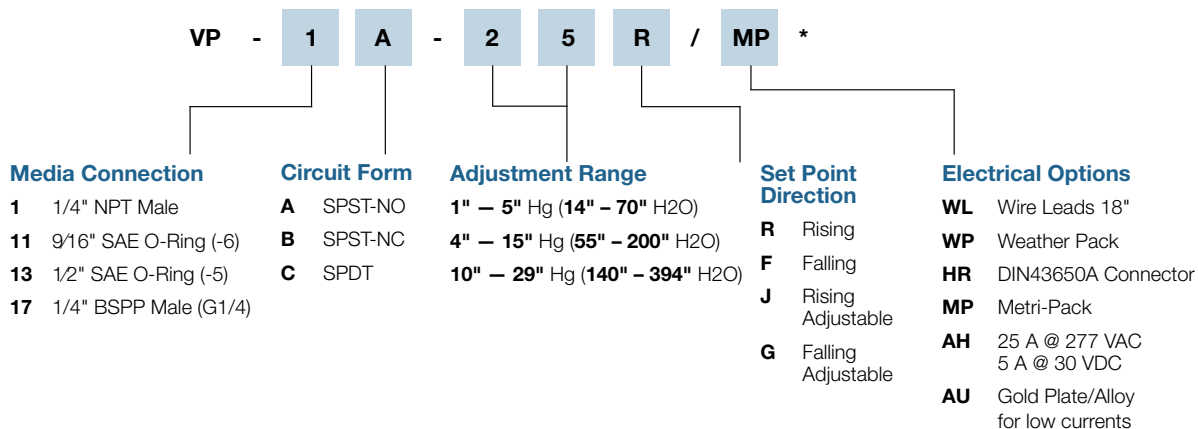
Features

- Long-life elastomer diaphragm
- High-quality snap-action switch
- Factory preset or field adjustable
- Available in a wide range of configurations
- Economical
- NEMA 4, 13

Operating Specifications

Set Point Range	1" – 29" Hg	(25mm – 736mm Hg)	14" – 394" H ₂ O
Set Point Tolerance	±2" Hg	(50mm Hg)	
Maximum Operating Pressure	250 PSI	(17 Bar)	
Differential	20 – 40%		
Current Rating	10 A @ 125/250 VAC	5 A @ 30 VDC	
Media Connection	Zinc Plated Steel		
Circuit Form	SPST-NO, SPST-NC or SPDT		
Electrical Connection	See Order Chart Below for Options		
Diaphragm Material	Buna N		
Cycle Life	1 Million		

How to Order (Example: Part Number: **VP - 1A - 25R / MP**)



* Defaults to Screw Terminals

For more [media connections](#), see pages 23-24.

For all available [optional configurations](#), see page 22.

For more [electrical connections](#), see page 7.

Pressure / Vacuum Switch Part Number Configuration

(Complete open boxes only. Shaded boxes should have been previously completed on individual switch pages.)

The diagram illustrates the part number configuration structure. It consists of several segments: a Model segment (shaded), a Media Connector segment (open box), a Circuit Form segment (shaded), a Set Point segment (shaded), a Setting Direction segment (shaded), a Wire Length segment (open box), an Electrical Connection segment (shaded), and an Additional Options segment (three open boxes). A Variant #* segment is shown at the end, connected to the Additional Options segment.

Wire Length Settings

- 1 3" Wire Length
- 2 6" Wire Length
- 3 12" Wire Length
- 4 18" Wire Length
- 5 24" Wire Length
- 6 36" Wire Length
- 7 48" Wire Length
- 8 60" Wire Length
- 9 Special Wire Length

Media Connection Modifier

- A** Aluminum
- B** Brass
- N** Nickel Plating
- P** Delrin
- S** Zinc Plated Steel
- T** 303 Stainless Steel
- U** 316 Stainless Steel

Electrical Connection

- HF** DIN43650A 1/2" Conduit (Plug & Receptacle)
- HH** DIN43650A (Plug Only)
- HR** DIN43650A Strain Relief (Plug & Receptacle)
- HP** 9.4mm DIN (Plug Only)
- HM** 9.4mm DIN (Plug & Receptacle)
- MP** Metri-Pack Female 280 Series Sealed (Nason Standard)
- NP** Metri-Pack Male 280 Series Sealed
- CP** Metri-Pack Female 150 Series Sealed
- DP** Metri-Pack Male 150 Series Sealed
- PP** Boot (Military Connector)
- QC** 1/4" Male Spade Quick Connect
- WL** Wire Leads
- WP** Weather Pack (Female)
- TP** Weather Pack (Male)
- EL** 1/2" NPT Male Conduit
- EF** 1/2" NPT Female Conduit
- WD** Deutsch Receptacle
- PD** Deutsch Plug
- HL** Lighted DIN (Plug & Receptacle)
- PT** 10 — 32 Post
- ES** M12 - 4PIN
- CL** Sheathed 18 AWG
- SL** SJO Cable

Additional Options

- 1. Diaphragms**
 - BL** Buna 50 Durometer
 - BT** Buna 431T
 - EP** EP 559 PE
 - FS** Fluorosilicone
 - GJ** Viton 514 GJ
 - HJ** HNBR, 574 HJ
 - NE** Neoprene
 - SI** 71418 Silicone 80 DUR
 - VT** Viton 514 AD
 - YP** Viton 514 YP
- 2. Contacts****
 - AT** 10 A @ 125/250 VAC
5 A @ 30 VDC
 - AU** Gold Plate/Alloy for low currents
 - AH** 25 A @ 277 VAC
5 A @ 30 VDC
- 3. Other**
 - VL** Convolute (for wire leads)
 - GG** Internal Ground
 - NF** NSF Approved

* Variant # identifies this configuration as unique to a specific customer or application.

** Ask about our new environmentally sealed snap-action switch.

Pressure / Vacuum Switches

Option	Base Thread Size*	SM	MM	LM	CJ	XM	WX	CD	VM	NV	VP
1	1/4 — 18 NPT Male	•	•	•	•	•	•	•	•	•	•
2	1/8 — 27 NPT Male	•	•	•	•	•	•	•	•	•	
3	3/4 — 16 UNF SAE O-Ring (-5)	•	•		•	•	•	•	•	•	
4	7/16 — 20 37° JIC Flare (-4)			•		•	•				
5	1/4 — 18 NPT Female	•	•			•	•	•			
6	7/16 — 20 SAE O-Ring (-4)	•	•	•	•	•	•	•		•	•
7	1/4 — 18 NPT Female (Obsolete) See Option 5										
8	1/8 NPT Female	•	•			•	•		•	•	•
9	3/8 — 18 NPT	•	•	•	•	•	•	•	•		
10	1/4 Female Stainless Steel (Obsolete) See Option 5										
11	9/16 SAE O-Ring (-6)	•	•	•	•	•	•	•	•		•
12	M10 x 1 SAE J2244-3	•	•	•	•	•	•				
13	1/2 — 20 UNF SAE O-Ring (-5)	•	•			•	•	•	•		•
14	1/2 NPT Male 1/8 NPT Female	•	•							•	
15	7/16 — 20 Female SAE O-Ring (D4)					•	•	•			
16	7/16 — 20 Female SAE J 514 37 DEG			•		•	•				
17	1/4 BSPP (G1/4)	•	•	•	•	•	•	•	•	•	•
18	7/16 — 20 ADJ					•	•				
19	1/8 BSPT JIS (PT) Taper	•	•	•		•	•				
20	Tri-Clover					•	•				
21	1/4 BSPP Extended (G1/4)	•	•			•	•		•		
22	1/2 — 14 NPT Brass Male (IS Only)										
23	1/4 — 18 NPT SS Female (IS Only)										
24	10/32 INT 3/8 — 24 EXT	•	•								
25	1/4 NPT Plastic (Obsolete) See Option 1										
26	9/16 — 18 Female 37 DEG SAE J 514 (-6)			•		•	•	•			
27	1/2 BSPT — Male (R12)	•	•						•		
28	1/8 BSPP (G1/8)	•	•		•						
29	3/8 — 24 SAE O-Ring (-3)	•	•			•	•				
30	1/4 BSPT (JIS) (R1/4)	•	•					•	•		
31	Flange (NS Only)										
32	M12 — 1.5 Metric	•	•								
33	Extended Flange (NS Only)										
34	7/16 — 20 MS33649 Female* 14 NPTE (Male)					•	•				
35	1/2 — 14 NPT (Male)	•	•	•		•	•				
36	9/16 O-Ring Extended Boss (-6)			•		•	•				
37	3/8 — 24 Inverted Flare	•	•	•							
38	9/16 — 12 UNC (SR Only)	•	•					•		•	
39	1/4 — 18 NPTF SAE J516 (-4)					•	•	•			
40	M10X1 SAE J2244-3 (Obsolete) See Option 12										
41	7/16 — 20 Internal 45° Flare — SAE J 513	•	•						•		
42	9/16 — 18 ADJ										
43	M10 x 1 SAE J2244-3 Extended	•	•								
44	1/4 — 18 NPT Female Extended					•	•				

*Call Nason at 800.229.4955 if you don't see the media connection that fits your application. **Note:** Consult factory for materials and stock.

Pressure / Vacuum Switches

Option	Base Thread Size*	SM	MM	LM	CJ	XM	WX	CD	VM	NV	VP
45	9/16 — 18 SAE O-Ring Female (-6)					•	•				
46	1/8 NPT Male Clipped Hex	•	•								
47	1/4 — 19 BSPP Female (G1/4)					•	•				
48	9/16 — 18 SAE Male 1/8 NPT Female										•
49	M14 x 1.5 J2244/3	•	•	•		•	•	•			
50	.302 — 32 Female	•	•								
51	M14 x 1.5 (19mm Hex)			•							
52	3/8 — 24 UNF W/ 1/4 BARB	•	•								
53	M12 x 1.5 SAE J2244	•	•	•		•	•	•			
54	1-1/8 Hex 1/4 NPT					•	•				
55	1/2 BSPP					•	•				
56	M10 x 1 Metric Pipe Thread	•	•			•	•				
57	7/16 — 20 1-1/8 Hex					•	•				
58	9/16 — 18 1-1/8 Hex					•	•				
59	1-11 — 1/2 NPT										
60	1/4 SAE J513 Female Flare Deflator	•	•			•	•		•		
61	9/16 — 18 SAE J514 37 DEG Male					•	•	•			
62	1/4 Deflator										
63	1/2 — 20 Extended	•	•								
64	G3/8 (3/8 — 19 BSPP)	•	•								
65	3/4 — 14NPT			•							
66	1/4 Tube Plastic	•									
67	9/16 — 18 SAE O-Ring Face Seal			•		•	•	•			
68	9/16 — 18 SAE O-Ring Face Seal (Female)			•		•					
69	11/16 — 16 SAE O-Ring Face Seal					•	•	•			
70	M10 x 1.25 Female Flare Deflator	•	•								
71	DX Face Seal Mount										
72	11/16 — 16 SAE O-Ring Face Seal (Female)			•							
73	M18 x 1.5							•			
74	Special SM/MM Port Seal	•	•								
75	1/8 — 27 Straight with 1/8 Barb									•	
76	M8 x 1 SAE J2244-2	•	•								
77	M16 x 1.5 SAE J2244-3	•	•								
78	M16 x 1							•			
79	M14 x 1.5 For Washer Seal										
80	3/8 O-Ring Port Seal	•	•								
81	3/8 — 24 — 3 J512 45° Flare					•					
82	5/16 — 24 For #13 O-Ring Seal	•	•								
83	M9 X 1.25 6G					•					
84	3/8 — 24 UNF 2A — 3 37° Flare	•	•								
85	M10 X 1 DIN 3852 Type B			•							
86	3/4 — 14 Male 1/4 — 18 NPT Female										
87	Top Manifold Mount (Seal)	•	•								
88	M16 X 1.5 For Copper Washer Seal	•	•								

*Call Nason at 800.229.4955 if you don't see the media connection that fits your application. **Note:** Consult factory for materials and stock.

Pressure / Vacuum Switches

So we can better meet your application needs, please take a moment to fill out this operation specifications form. Nason will provide a sample to your specifications.

1 Maximum Operating Pressure: _____

2 Media: _____

3 Set Point: Rising _____ Falling _____
 Rising Adjustable _____ Falling Adjustable _____

4 Circuit Form: SPST-NO SPST-NC SPDT

5 Differential: _____

6 Circuit: Electrical AC _____ V DC _____ V
 Load (Amps) _____ Resistive Inductive Inrush _____

7 Media Connection: _____

8 Electrical Connection: _____

9 Temperature: Media _____ °F Ambient _____ °F

10 Cycles: _____ per hour Other (describe): _____

11 Other Special Requirements (attach separate sheet if necessary): _____

12 System: New Design Redesign

13 Application: What will switch control? (Attach circuit diagrams if available) _____

14 Prototype(s) Required by (Date): _____

15 Estimated Annual Usage: _____ Target Net Price: _____

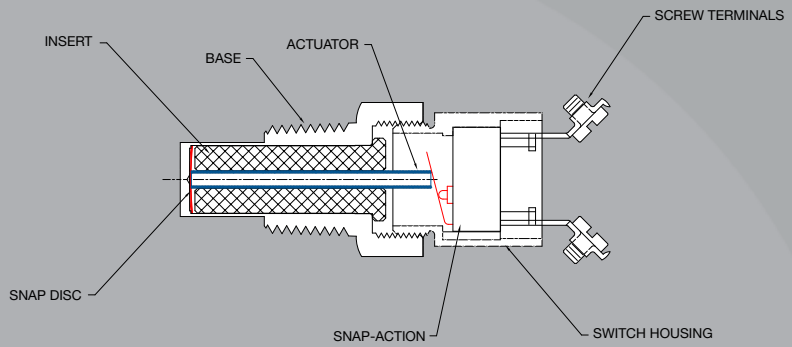
Firm: _____

Address: _____

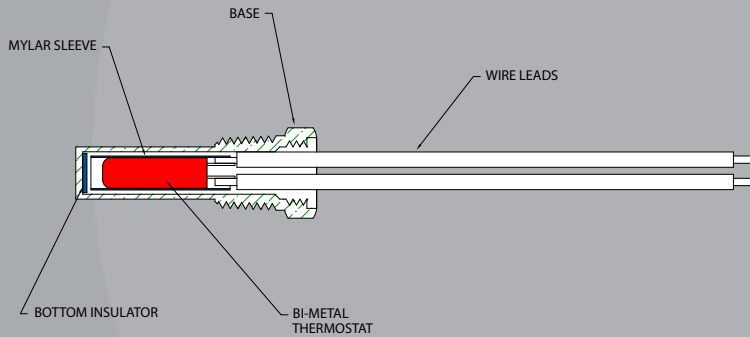
Project Number or Name: _____

Name & Title: _____ Phone: _____

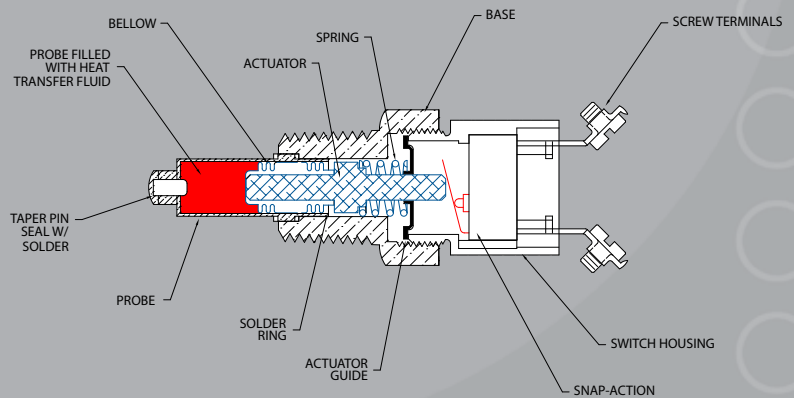
Email Address: _____



SNAP DISC THERMOSTAT DESIGN



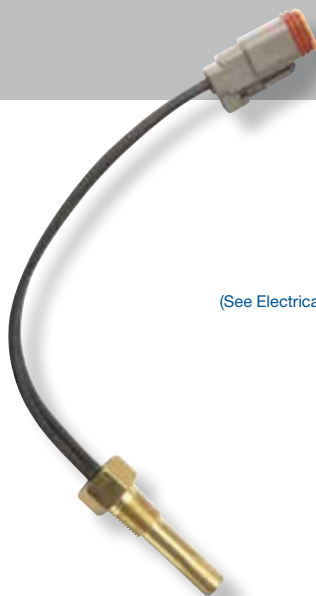
BI-METAL THERMOSTAT DESIGN



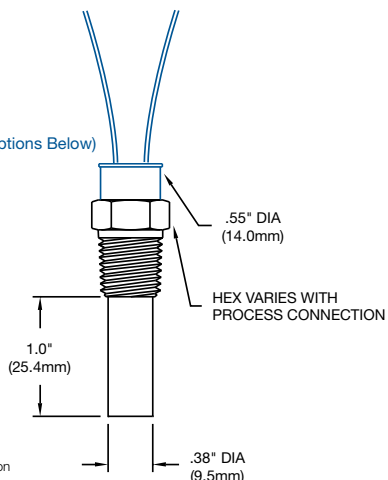
BELLOWS THERMOSTAT DESIGN

TEMPERATURE SWITCHES

- Models TT, TD, TM, and HT
- TT — Bi-metal immersion temperature switch for low voltage/low current applications
- TD — Snap disc design for high reliability with shock and vibration
- TM and HT — Bellows design for high reliability with shock and vibration
- Available in a wide range of configurations
- NEMA 4 and 13 available
- 100% tested for accuracy



(See Electrical Options Below)



Shown with PD electrical option

UL **CE** **RoHS**

Features

- Bi-metal immersion temperature switch
- Factory preset temperature
- Direct action contacts/minimum hysteresis
- Gold diffused, fine silver contacts
- Available in a wide range of configurations
- Economical and compact
- NEMA 4, 13

Operating Specifications

Set Point Range	40° — 300°F	(4° — 149°C)
Set Point Tolerance	±5°F	(2.8°C)
Maximum Temperature	325°F	(163°C)
Current Rating	3 A @ 240 VAC	2 A @ 24 VDC (Resistive)
Probe Length	1"	
Media Connection	Standard: Brass (Optional: 303 SS, 316 SS)	
Circuit Form	SPST-NO or SPST-NC	
Electrical Connection	See Order Chart Below for Options	
Maximum External Pressure	5000 PSI	

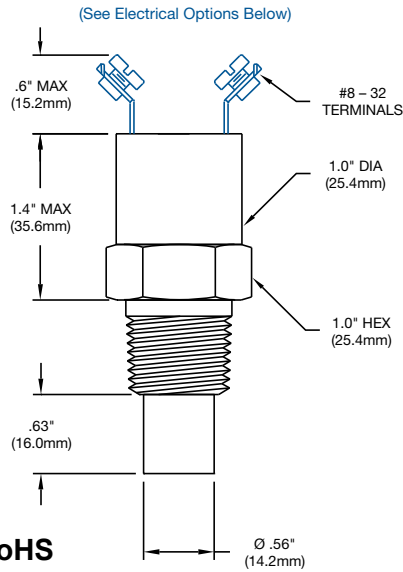
How to Order (Example: Part Number: **TT - D3A - 100R / WL** *)

TT		-		D	3	A	-		1	0	0	R	/	WL	*
Probe Length		Media Connection		Circuit Form		Fixed Set Point		Set Point Direction							
D	1/2"	1	1/2" NPT Male	A	SPST-NO	40°F — 300°F		R	Rising						
E	3/4"	2	3/8" NPT Male	B	SPST-NC			F	Falling						
F	1"	3	1/4" NPT Male							WL	Wire Leads 6"				
H	1-1/2"	5	3/4" SAE O-Ring (-8)							QC	1/4" Spade Connection				
J	2"	6	M16 x 1.5							WP	Weather Pack				
		13	1/4" NPT (316SS)							MP	Metri-Pack				
		35	M12 x 1.5							GG	Internal Ground				
		46	M14 x 1.25							* Defaults to Screw Terminals					

For more [media connections](#), see pages 31-32.

For all available [optional configurations](#), see page 33.

For more [electrical connections](#), see page 7.



UL US CE RoHS

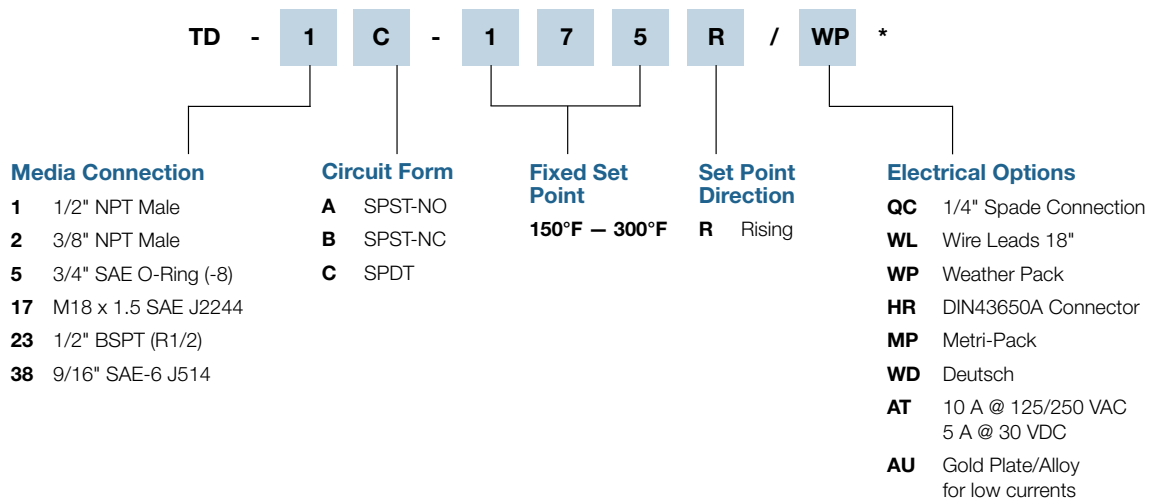
Features

- Utilizes snap disc approach to sense temperature
- High-quality snap-action switch
- Factory preset
- Shock and vibration resistant
- Available in a wide range of configurations
- Economical
- NEMA 4, 13

Operating Specifications

Set Point Range	150° – 300°F	(65° – 149°C)
Set Point Tolerance	±5°F	(2.8°C)
Maximum Operating Temperature	325°F	(163°C)
Differential	8 – 16°F	
Current Rating	5 A @ 250 VAC	5 A @ 30 VDC (Resistive)
Media Connection	Standard: Brass (Optional: 303 SS, 316 SS)	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Maximum External Pressure	2500 PSI	

How to Order (Example: Part Number: TD - 1C - 175R / WP)

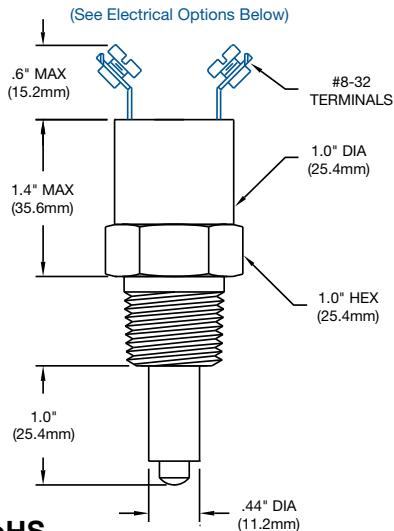


* Defaults to Screw Terminals

For more media connections, see pages 31-32.

For all available optional configurations, see page 33.

For more electrical connections, see page 7.



UL US CE RoHS

Features

- Utilizes bellows mechanism to sense temperature
- High-quality snap-action switch
- Factory preset
- Shock and vibration resistant
- Available in a wide range of configurations
- NEMA 4, 13

Operating Specifications

Set Point Range	40° — 300°F	(4° — 149°C)
Set Point Tolerance	±5°F	(2.8°C)
Maximum Operating Temperature	100°F above set point (325°F max)	
Differential	8 — 16°F	
Current Rating	5 A @ 250 VAC	5 A @ 30 VDC (Resistive)
Media Connection	Standard: Brass (<i>Optional: 303 SS, 316 SS</i>)	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Maximum External Pressure	500 PSI	

How to Order (Example: Part Number: **TM - 6A - 120R / WL**)

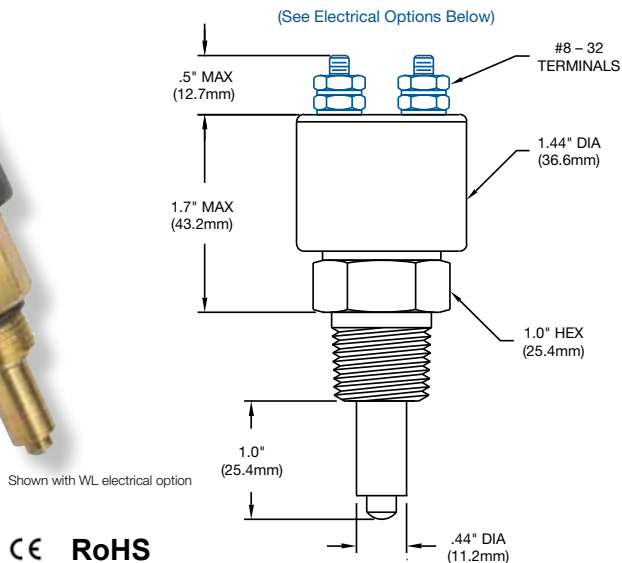
TM - 6 A - 1 2 0 R / WL *				
<p>Media Connection</p> <p>1 1/2" NPT Male</p> <p>2 3/8" NPT Male</p> <p>6 M16 x 1.5</p> <p>7 1/2" BSPP Male (G1/2)</p> <p>16 3/8" — 19 BSPT/JIS</p> <p>27 M22 x 1.5 SAE J2244</p> <p>45 1/2" BSPP 303 SS</p>	<p>Circuit Form</p> <p>A SPST-NO</p> <p>B SPST-NC</p> <p>C SPDT</p>	<p>Fixed Set Point</p> <p>40°F — 300°F</p>	<p>Set Point Direction</p> <p>R Rising</p> <p>F Falling</p>	<p>Electrical Options</p> <p>WL Wire Leads 18"</p> <p>QC 1/4" Spade Connection</p> <p>WP Weather Pack</p> <p>HR DIN43650A Connector</p> <p>MP Metri-Pack</p> <p>AT 10 A @ 125/250 VAC 5 A @ 30 VDC</p> <p>GG Internal Ground</p> <p>AU Gold Plate/Alloy for low currents</p>

* Defaults to Screw Terminals

For more **media connections**, see pages 31-32.

For all available **optional configurations**, see page 33.

For more **electrical connections**, see page 7.



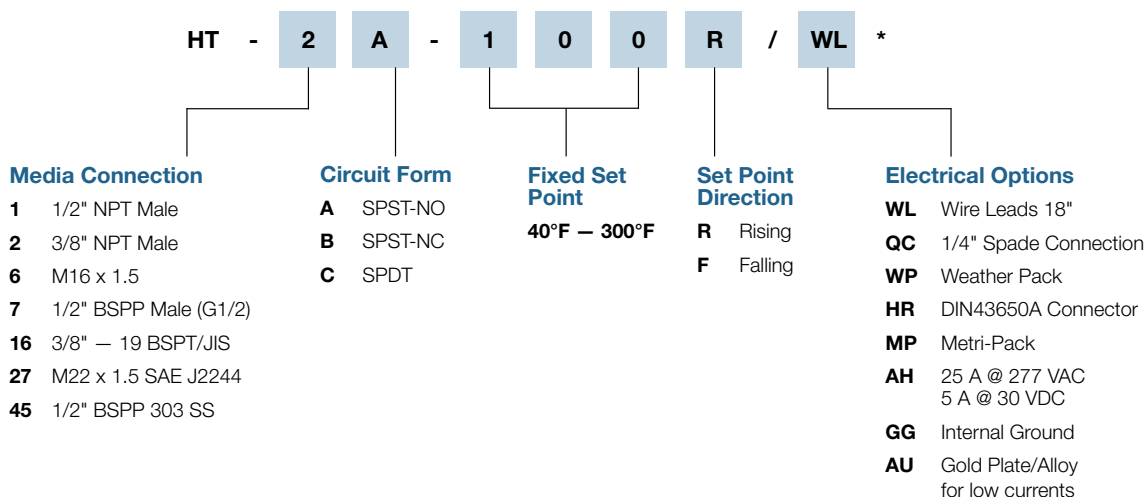
Features

- Utilizes bellows mechanism to sense temperature
- High-quality snap-action switch
- Factory preset
- Shock and vibration resistant
- Available in a wide range of configurations
- NEMA 4, 13

Operating Specifications

Set Point Range	40° — 300°F	(4° — 149°C)
Set Point Tolerance	±5°F	(2.8°C)
Maximum Operating Temperature	100°F above set point (325°F max)	
Differential	8 — 16°F	
Current Rating	10 A @ 125/250 VAC	5 A @ 30 VDC
Media Connection	Standard: Brass (<i>Optional: 303 SS, 316 SS</i>)	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Maximum External Pressure	500 PSI	

How to Order (Example: Part Number: HT - 2A - 100R / WL)



* Defaults to Screw Terminals

For more [media connections](#), see pages 31-32.

For all available [optional configurations](#), see page 33.

For more [electrical connections](#), see page 7.

Temperature Switches

Option	Base Thread Size*	TD	TM/HT	TT Model Probe Code					
				D 1/2" Probe	E 3/4" Probe	F 1" Probe	G 1-1/4" Probe	H 1-1/2" Probe	J 2" Probe
1	1/2 NPT Male	•	•	•	•	•	•	•	•
2	3/8 NPT Male	•	•	•	•	•		•	•
3	1/4 NPT Male			•	•	•		•	•
4	3/8 NPT (1PC)		•						
5	3/4 — 16 SAE O-Ring (-8)	•	•	•	•	•		•	•
6	M16 x 1.5		•	•	•	•			•
7	1/2 BSPP	•	•		•				•
8	1/2 NPT (1PC)		•						
9	3/8 NPT (Short)		•						
10	M14 x 1.5 (Nickel Plated)				•				
11	M14 x 1.5				•	•			
12	1/2 NPT (Nickel Plated)		•			•	•		
13	1/4 NPT (316SS)			•	•	•			
14	1/2 BSPP Extended		•						
15	3/4 — 16 SAE O-Ring (-8) Short		•						
16	3/8 — 19 BSPT/JIS	•	•	•			•		
17	M18 x 1.5 SAE J2244	•	•	•	•	•			
18	1/4 NPT (Nickel Plated)			•	•				
19	1/2 NPT (316SS-1PC)		•			•			
20	1/2 NPT (Very Short)		•						
21	3/8 NPT (Very Short)		•						
22	M16 x 1.5 (Flare)				•				
23	1/2 BSPT (R1/2)	•	•			•			
24	1/2 NPT (316SS)					•			
25	3/8 NPT (Nickel Plated) 1PC		•						
26	M14 x 1.5 SAE J2244			•	•	•			
27	M22 x 1.5 SAE J2244	•	•			•			
28	1/4 — 19 BSPT				•				
29	3/8 — 19 BSPP				•			•	

*Call Nason at 800.229.4955 if you don't see the media connection that fits your application. **Note:** Consult factory for materials and stock.

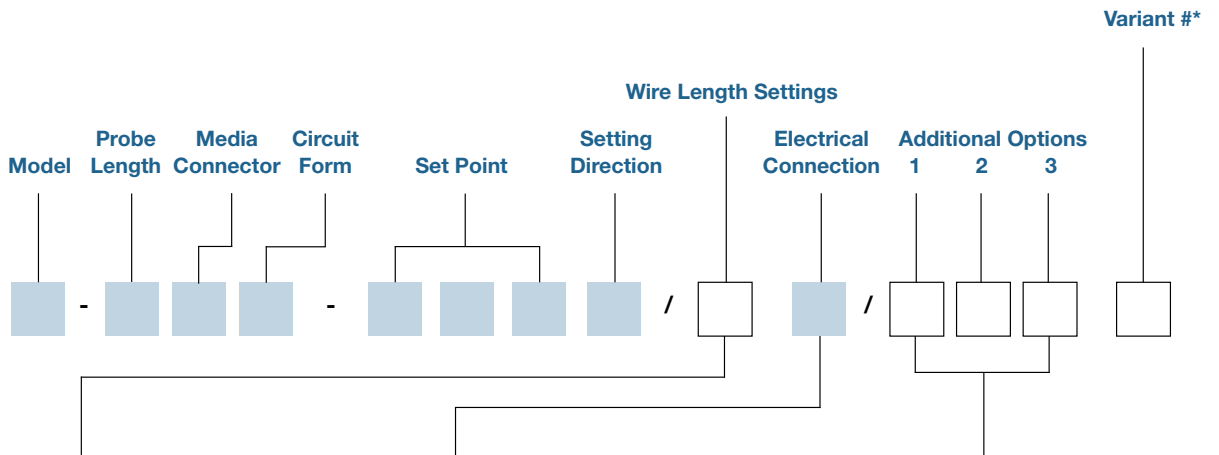
Temperature Switches

Option	Base Thread Size*	TD	TM/HT	TT Model Probe Code					
				D 1/2" Probe	E 3/4" Probe	F 1" Probe	G 1-1/4" Probe	H 1-1/2" Probe	J 2" Probe
30	3/8 NPT (316SS)			•	•	•			
31	3/4 – 16 UNF (304)SS		•						
32	M16 x 1.5 (SAE)								
33	5/8 – 18 SAEJ 513			•	•				
34	1/2 NPT (Short)		•						
35	M12 x 1.5			•		•			
36	3/4 – 16 SAE O-Ring (Nickel Plated)								
37	M14 x 1.5 Taper Thread								
38	9/16 SAE-6 J514	•		•	•	•	•	•	•
39	M16 x 2.0			•					
40	1/2 – 20 UNF			•		•			
41	3/8 – 24 SAE			•					
42	1/8 NPT			•		•			
43	1/4 – 19 BSPP			•		•			
44	M16 x 1.5 303 SS					•			
45	1/2 BSPP 303 SS	•	•						
46	M14 x 1.25					•			
47	M16 x 1.5 45° Flare			•		•			
48	7/16 – 20 SAE O-Ring			•		•			
49	3/4 – 16 UNF Straight (Washer Sealed)	•		•					
50	1/8 – 28 BSPT			•					
51	M20X 1.5 Taper								
52	3/8 NPT 303 SS								
53	M16 X 1.5 For Washer			•	•	•		•	•
54	M10 X 1.5								
55	1/8 – 28 BSPP			•					
56	M12 X 1.5 For Washer			•					
57	3/8 – 19 BSPP Washer			•					
58	1/4 – 19 BSPP316SS					•			

*Call Nason at 800.229.4955 if you don't see the media connection that fits your application. **Note:** Consult factory for materials and stock.

Temperature Switch Part Number Configuration

(Complete open boxes only. Shaded boxes should have been previously completed on individual switch pages.)



Wire Length Settings

- 1** 3" Wire Length
- 2** 6" Wire Length
- 3** 12" Wire Length
- 4** 18" Wire Length
- 5** 24" Wire Length
- 6** 36" Wire Length
- 7** 48" Wire Length
- 8** 60" Wire Length
- 9** Special Wire Length

Electrical Connection

- HF** DIN43650A 1/2" Conduit (Plug & Receptacle)
- HH** DIN43650A (Plug Only)
- HR** DIN43650A Strain Relief (Plug & Receptacle)
- HP** 9.4mm DIN (Plug Only)
- HM** 9.4mm DIN (Plug & Receptacle)
- MP** Metri-Pack Female 280 Series Sealed (Nason Standard)
- NP** Metri-Pack Male 280 Series Sealed
- CP** Metri-Pack Female 150 Series Sealed
- DP** Metri-Pack Male 150 Series Sealed
- PP** Boot (Military Connector)
- QC** 1/4" Male Spade Quick Connect
- WL** Wire Leads
- WP** Weather Pack (Female)
- TP** Weather Pack (Male)
- EL** 1/2" NPT Male Conduit
- EF** 1/2" NPT Female Conduit
- WD** Deutsch Receptacle
- PD** Deutsch Plug
- HL** Lighted DIN (Plug & Receptacle)
- PT** 10 – 32 Post
- ES** M12 - 4PIN
- CL** Sheathed 18 AWG Primaries
- SL** SJO Cable

Additional Options

- 1. Contacts****
- AT** 10 A @ 125/250 VAC
5 A @ 30 VDC
- AU** Gold Plate/Alloy (for low currents)
- AH** 25 A @ 277 VAC
5 A @ 30 VDC
- 2. Ground**
- GG** Internal Ground
- 3. Other**
- VL** Convolute (for wire leads)

* Variant # identifies this configuration as unique to a specific customer or application.

** Ask about our new environmentally sealed snap-action switch.

Temperature Switches

So we can better meet your application needs, please take a moment to fill out this operation specifications form. Nason will provide a sample to your specifications.

1 Media: _____

2 Set Point: Rising _____ (°F or °C) Falling _____ (°F or °C)

3 Differential: Yes No

4 Circuit Form: SPST-NO SPST-NC SPDT

5 Circuit: Electrical AC _____ V DC _____ V

Load (Amps) _____ Resistive Inductive Inrush _____

6 Pressure: System (Normal) _____ (Maximum) _____

7 Temperature: System (Normal) _____ (Maximum) _____ (Minimum) _____

Ambient (Normal) _____ (Maximum) _____ (Minimum) _____

8 Media Connection: _____

9 Electrical Connection: _____

10 Cycles: _____ per hour Other (describe): _____

11 Other Special Requirements (attach separate sheet if necessary): _____

12 System: New Design Redesign

13 Application: What will switch control? (Attach circuit diagrams if available) _____

14 Prototype(s) Required by (Date): _____

15 Estimated Annual Usage: _____ Target Net Price: _____

Firm: _____

Address: _____

Project Number or Name: _____

Name & Title: _____ Phone: _____

Email Address: _____



TRANSDUCERS

- Three new models – NT100, NT40 and NT25
- Basic to highly customized models
- Hydraulic and pneumatic designs
- Models with accuracy ranges of 1%, .4% and .25%
- Vacuum ranges to 10,000 PSI
- IP69K seal available for the NT25, enabling high-pressure wash down capability
- Compact designs
- Custom outputs and ranges available
- Multiple industry applications






Features

- Vacuum ranges to 10,000 PSI
- Various outputs
- Compact designs
- 316 stainless steel wetted parts
- Low cost
- Industrial 1% accuracy
- Custom outputs and ranges available
- OEM tested and approved

Application

- Hydraulic/mobile hydraulic
- Pneumatic systems
- Food and beverage industry
- Refrigeration systems
- Pumps and compressors
- Energy and water management
- Construction and agricultural equipment

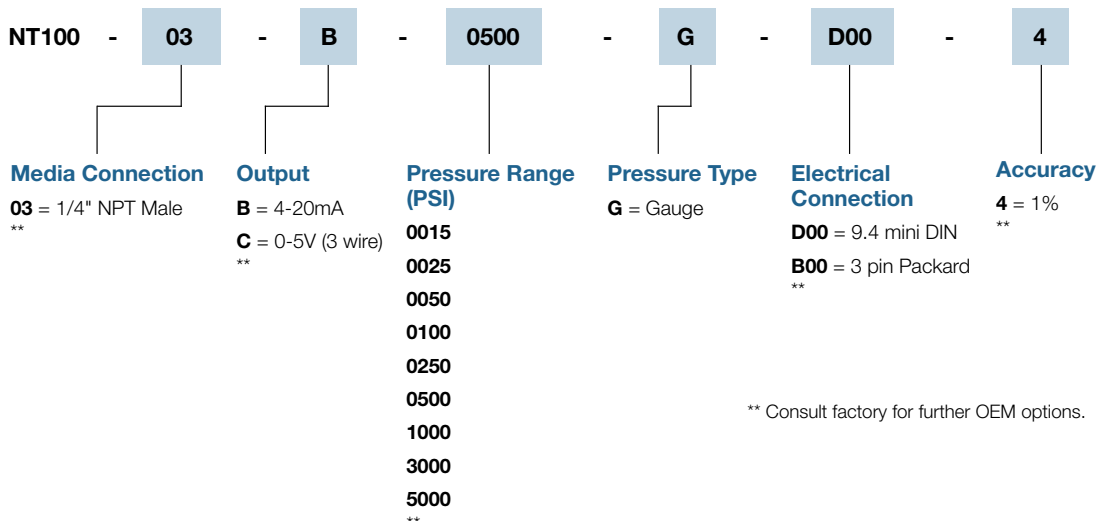
Description

The NT100 Series Pressure Transducer utilizes piezoresistance technology in an all stainless steel body. It is compact in size, has long term stability, is easy to install, and is very economical, as well as reliable.

The NT100 sets a new price-performance standard for low cost, high volume commercial and industrial applications.

How to Order (Example: Part Number: **NT100 - 03 - B - 0500 - G - D00 - 4**)

Model



** Consult factory for further OEM options.

Specifications

Input

Supply Voltage	12-36 VDC
Pressure Range	VAC to 10,000 PSI
Proof Pressure	1.5 x full scale
Burst Pressure	3 x full scale
Fatigue Life	More than 4 million cycles

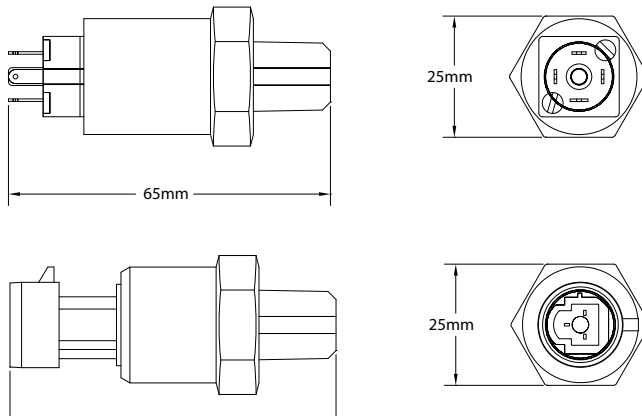
Performance

Accuracy	1%
Stability	0.2% full scale
Compensated Temperatures	-10 to 75°C (14 to 167°F)
Operating Temperatures	-20 to 80°C (-4 to 176°F)
Zero and Span Offset Tolerance	1.5%

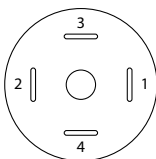
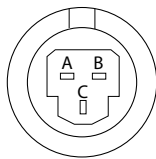
Mechanical Configuration

Pressure Port	1/4 NPT (standard) *
Electrical Connection	9.4 mini DIN, 3 pin Packard *
Sealing Rating	IP65 with standard 9.4 DIN cable
Wetted Parts	316 stainless steel

For best performance, use shielded cables. Mating cable assemblies sold separately. * Consult factory for further OEM options.



Electrical Connections

Signal	Function	Color	Pin	Electrical Connector
0-5V	Supply V +	Red	1	DIN 4 pin (9.4) 
	Com	Black	2	
	Output	White	3	
	N/A	N/A	4	
4-20mA	Supply V	Red	1	
	Output	Black	2	
0-5V	Com	-	A	3 pin Packard 
	Supply +	-	B	
	Output +	-	C	
4-20mA	Output	-	A	
	Supply +	-	B	



Features

- Vacuum ranges to 10,000 PSI
- Various outputs
- Compact designs
- 316 stainless steel wetted parts
- Low cost
- Better 0.4% accuracy
- Custom outputs and ranges available
- OEM tested and approved

Application

- Hydraulic/mobile hydraulic
- Pneumatic systems
- Food and beverage Industry
- Refrigeration systems
- Pumps and compressors
- Energy and water management
- Construction and agricultural equipment

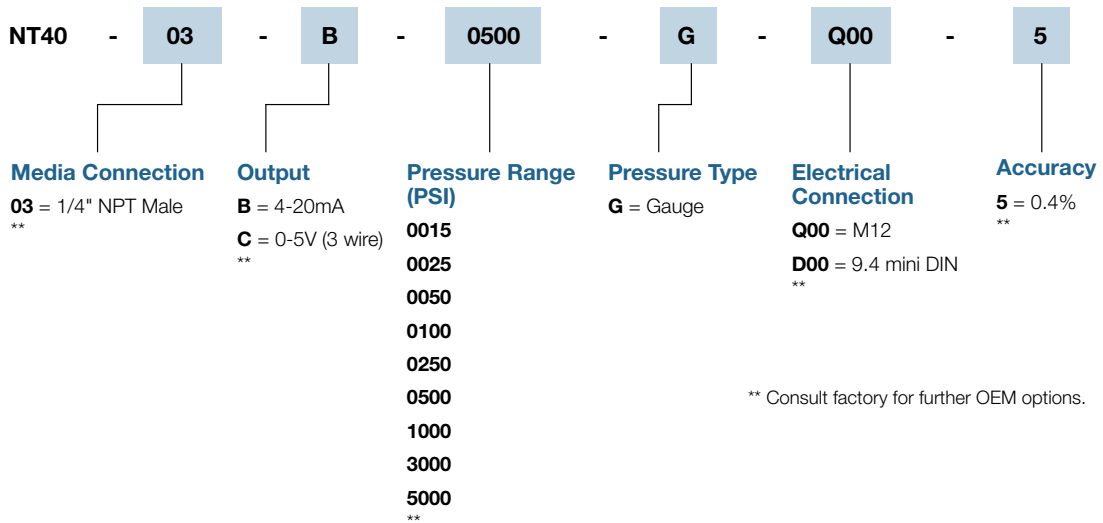
Description

The NT40 Series Pressure Transducer utilizes piezoresistance technology in an all stainless steel body. It is compact in size, has long term stability, is easy to install, and is very economical, as well as reliable.

The NT40 sets a new price-performance standard for low cost, high volume commercial and industrial applications.

How to Order (Example: Part Number: **NT40 - 03 - B - 0500 - G - Q00 - 5**)

Model



** Consult factory for further OEM options.

Specifications

Input

Supply Voltage	12-36 VDC
Pressure Range	VAC to 10,000 PSI
Proof Pressure	1.5 x full scale
Burst Pressure	3 x full scale
Fatigue Life	More than 4 million cycles

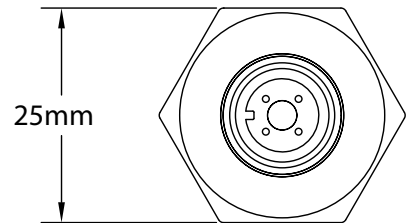
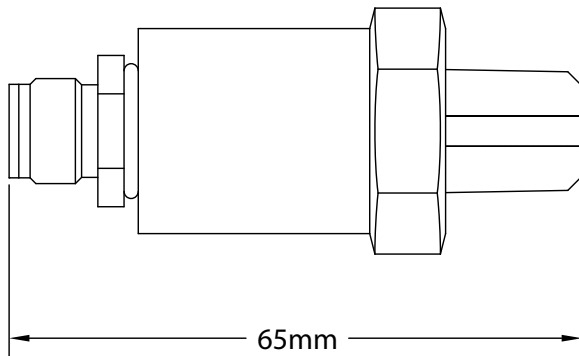
Performance

Accuracy	0.4%
Stability	0.2% full scale
Compensated Temperatures	-10 to 75°C (14 to 167°F)
Operating Temperatures	-20 to 80°C (-4 to 176°F)
Zero and Span Offset Tolerance	1.5%

Mechanical Configuration

Pressure Port	1/4 NPT (standard) *
Electrical Connection	M12 *
Sealing Rating	IP67 when used with M12 cable assembly
Wetted Parts	316 stainless steel

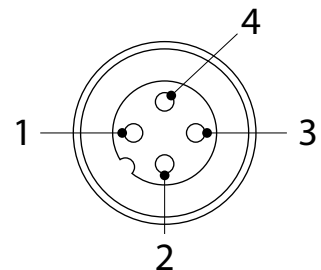
For best performance, use shielded cables. Mating cable assemblies sold separately. * Consult factory for further OEM options.



Electrical Connections

NT40 M12 pin assignments

Voltage outputs	4-20mA outputs
pin 1 = Voltage Supply +	pin 1 = Voltage Supply +
pin 2 = Output	pin 2 = N/C
pin 3 = Com	pin 3 = Output
pin 4 = N/C	pin 4 = N/C





Features

- Totally digital proprietary design
- Innovative redundant sensing elements
- 24V digital output for pressure or temp switch point
- Voltage and current outputs
- Custom pressure ranges and outputs available
- More standard pressure ranges, industry first
- Optional 4x over pressure is available up to 5,000 PSI
- 0.25% accuracy
- ASIC technology, no zero/span potentiometers
- All stainless steel welded housing
- IP-69K rated seal available (high pressure wash down)
- Innovative low current consumption, ideal for custom wireless solutions
- Programmable systems available for OEM/systems integrators for in-house configuring of outputs, ranges and set points to reduce inventory and lead times
- Calibration certificates available (contact customer service)

Description

The NT25 Series digital/configurable is an industry first. This industrial pressure transducer features stability and accuracy over a wide temperature range. It is lower in cost than competitive units typically not found in older analog designs. It is also plug and play, which is not found in most lower-grade competitive units.

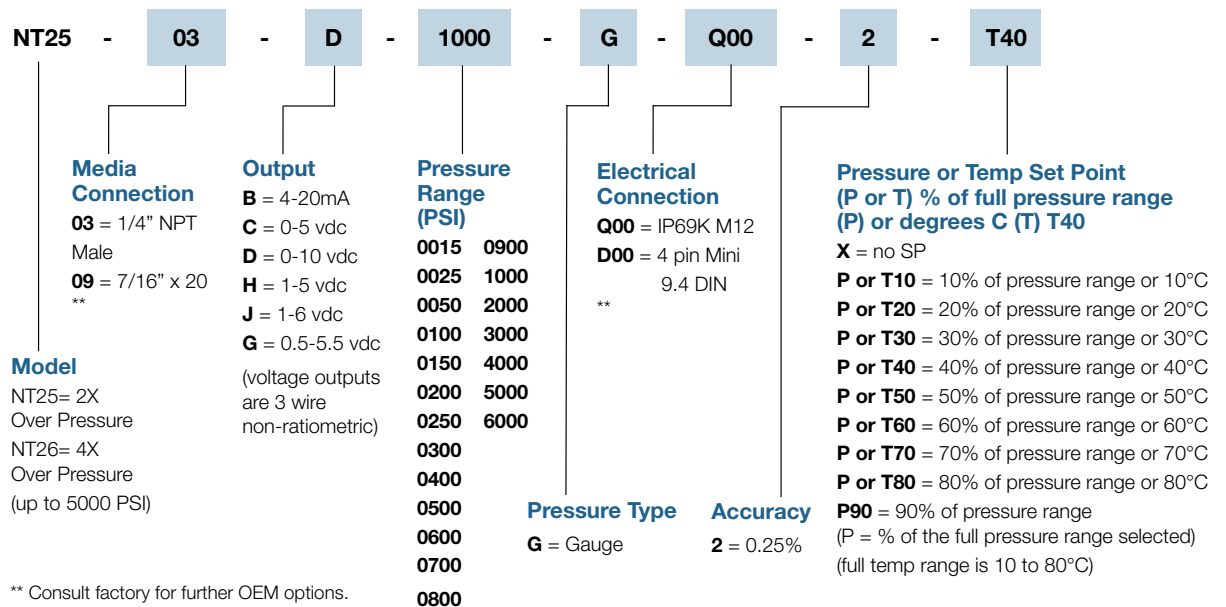
With its proprietary digital/ASIC technology, the NT25 Series features field-proven redundant sensing elements without the need for solder in resistors or trim pots that can drift over time. This provides years of excellent performance and reliability even in the harshest applications. This combined with optional

4x over pressure and the optional integrated temperature or pressure digital switch feature, makes the NT25 Series truly an industry first and second to none.

For extreme applications where power washers are used for wash down, the NT25 Series optional IP69K seal, another industry first, makes it ideal no matter what the environment.

With its flexible, low-power design and lower manufacturing costs, the NT25 Series offers outstanding value and makes it ideal for custom wireless applications.

How to Order (Example: Part Number: **NT25 - 03 - D - 1000 - G - Q00 - 2 - T40**)



** Consult factory for further OEM options.

Specifications

Performance

Accuracy	Performance @ 25°C (77°F) 0.25% BFSL (includes: non-linearity, hysteresis and non-repeatability)
Overrange Protection	2x Rated Pressure or optional 4x
Pressure Range	see ordering chart - up to 6000 PSI (690 bar) (optional higher ranges available)
Burst Pressure	5x or 20,000 PSI, whichever is less
Pressure Cycles	>100 million
Update Time	<=1msec
Digital Output	Optional digital output for pressure or temp switch point (not available on 4-20mA output units)

Environmental Data

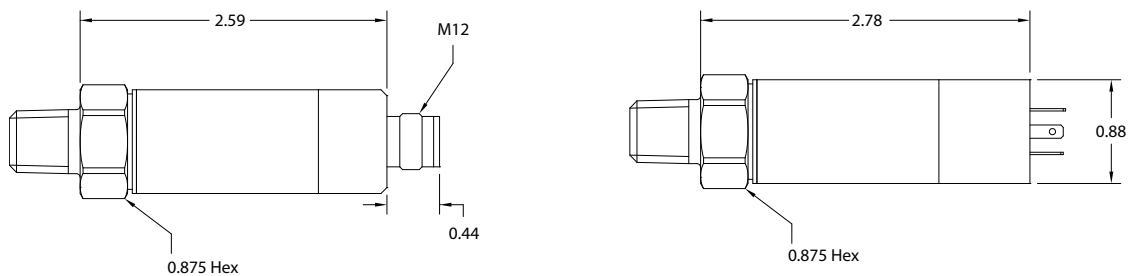
Temperature	
Compensated Temperatures	-20° to 85°C (-4 to 185°F)
Operating Temperatures	-40° to 100°C (-40 to 212°F)
Storage	-40° to 125°C (-40° to 250°F)
Total Error Band (TEB)	0.9%
Stability	0.25% FS typical (1 year)
Shock	100g, 6 ms, 1/2 sine per EN 60068-2-27, EN 60068-2-29
Vibration	12g peak, 10 to 2000 Hz per EN60068-2-6, EN60068-2-64
EMI/RFI Protection	Yes
Rating	Up to IP-69K available (high pressure wash down)

Mechanical Configuration

Pressure Connections	See ordering chart
Wetted Material	17-4PH stainless steel (for other materials consult factory)
Electrical Connection	9.4 Din, IP-69K 4 pin M12 Connector
Case (housing)	304 stainless steel

Electrical Data

Excitation	4.0-28 VDC, Typ (must be at least 0.3V above full output voltage) (7.5 VDC min for 4-20mA)
Output	see ordering chart
Output Load	0-800 Ohms @ 10-28 VDC for current output 10K Ohms minimum for voltage outputs
Current Consumption	25mA max (current output), <5mA (voltage output) without digital output, <8mA with digital output
Output Noise	<2mV RMS
Reverse Polarity Protection	Yes
Zero Offset	1%
CE Approval	Yes. Shield must be attached to connector housing (not tested with cable lengths over 30 meters).
Set Point for Either Pressure or Temperature	For pressure, this is done by selecting a percentage of your transducer's full range and this will be the set point (40% of a 1000 PSI range will have the set point at 400 PSI) "P40". For temperature, simply select in degrees C where you want the set point to be (selecting 40°C will be represented by "T40" in the part number).



Diaphragm Compatibility

Media	Buna	EP	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			•
Coolanol	•		
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	EP	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	•		
Oleum 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			•
Toluene			•
Transmission Fluid A	•		
Trisodium Phosphate	•		
Turpentine	•	•	
Water to 220°F (104°C)	•		
Water to 302°F (150°C)		•	

Other diaphragm materials are available. Consult factory for stock.

Temperature Conversions - [Formula °C = 5/9 (°F - 32°) °F = (9/5 °C) +32°]

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
40	104.0	62	143.6	84	183.2	106	222.8	128	262.4
41	105.8	63	145.4	85	185.0	107	224.6	129	264.2
42	107.6	64	147.2	86	186.8	108	226.4	130	266.0
43	109.4	65	149.0	87	188.6	109	228.2	131	267.8
44	111.2	66	150.8	88	190.4	110	230.0	132	269.6
45	113.0	67	152.6	89	192.2	111	231.8	133	271.4
46	114.8	68	154.4	90	194.0	112	233.6	134	273.2
47	116.6	69	156.2	91	195.8	113	235.4	135	275.0
48	118.4	70	158.0	92	197.6	114	237.2	136	276.8
49	120.2	71	159.8	93	199.4	115	239.0	137	278.6
50	122.0	72	161.6	94	201.2	116	240.8	138	280.4
51	123.8	73	163.4	95	203.0	117	242.6	139	282.2
52	125.6	74	165.2	96	204.8	118	244.4	140	284.0
53	127.4	75	167.0	97	206.6	119	246.2	141	285.8
54	129.2	76	168.8	98	208.4	120	248.0	142	287.6
55	131.0	77	170.6	99	210.2	121	249.8	143	289.4
56	132.8	78	172.4	100	212.0	122	251.6	144	291.2
57	134.6	79	174.2	101	213.8	123	253.4	145	293.0
58	136.4	80	176.0	102	215.6	124	255.2	146	294.8
59	138.2	81	177.8	103	217.4	125	257.0	147	296.6
60	140.0	82	179.6	104	219.2	126	258.8	148	298.4
61	141.8	83	181.4	105	221.0	127	260.6	149	300.2

Pressure Conversion Formulas

Into > Multiply by To Convert	PSI	H2O (15°C)	mmHg (0°C)	"Hg (0°C)	Millibar	Bar	Kg/Cm2	kPa
PSI	•	27.70	51.71	2.036	68.95	0.06895	0.07031	6.895
"H2O (15°C)	0.03609	•	1.867	0.07349	2.489	0.002489	0.002538	0.249
mmHg (0°C)	0.01934	0.5357	•	0.03937	1.3333	0.0013333	0.0013596	0.113
"Hg (0°C)	0.4912	13.61	25.40	•	33.86	0.03386	0.03453	3.386
Millibar	0.0145	0.4018	0.750062	0.02953	•	0.001	0.0010197	0.09998
Bar	14.50	401.8	750.062	29.53	1000	•	1.0197	99.98
Kg/Cm2	14.22	394.05	735.559	28.96	980.7	0.9807	•	98.05
kPa	0.145	4.016	7.519	0.2953	10.002	0.010	0.0102	•

Glossary of Terms

Snap-Action Switches

Nason uses only the highest quality snap-action electrical switches which insures a positive, instantaneous electrical contact under all operating conditions. Nason electrical switches are UL, CSA, CE, and military listed. Ask about our new environmentally sealed snap-action switch.

Diaphragms

Nason pressure switches incorporate elastomer diaphragms to provide a positive media seal. Nitrile is the material of choice for most applications. Ethylene propylene, fluorocarbon, fluorosilicon, and neoprene are readily available for specific applications.

Differential

A distinct change in pressure (or temperature for temperature switches) is necessary to reset a Nason snap-action switch to its original electrical state. This feature prevents "searching" and maximizes switch and system life. Catalog ranges are typical mid-range and can be varied with special construction.

Electrical Connections

A wide variety of electrical connectors are readily available for most applications. Screw terminals, wire leads, blades, studs, conduit, automotive DIN and military connectors are stock items.

Media Connections

Nason's offering of media connections is unmatched in the industry. NPT, BSP, SAE, JIS, DIN, MS and many others are readily available.

Electrical Circuits

A unique variety of electrical contact arrangements allows the system designer to achieve complex logic at minimal cost. Contact arrangements up to form ZZ and isolated dual set points are available.

Electrical Rating

Most Nason switches are available in a nominal 5 or 10 AMP rating. Gold plated contacts for low current and 25 AMP ratings are also available.

Life

The operational life of a Nason switch is normally in excess of one million cycles. Operating life depends on many variables, and specific tests should be run if marginal conditions exist.

Application

Nason switches are used successfully in a great variety of pneumatic and hydraulic applications. Military vehicles and equipment, aviation, marine, machine tools, farm and construction equipment, process equipment, medical equipment and industrial machinery are typical applications.

Customization

Nason has the experience and willingness to customize any switch to meet specific application requirements. Special media connections, electrical connections, circuitry and construction materials can be designed and produced as needed.

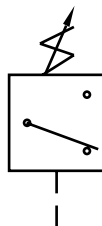
Installation Torques

Pressure Switch - 10 Ft lbs

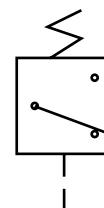
Temperature Switch - 14-15 Ft lbs

Circuitry

Adjustable Pressure Switch
Component Symbol



Fixed Pressure Switch
Component Symbol



1307 S Highway 11 • Walhalla SC 29691
800.229.4955 • Phone: 864.638.9521
Fax: 864.638.7903 • Orders: 800.229.4955
www.nasonptc.com

WARRANTY:

It is the sole responsibility of the user to determine the suitability of any product or information supplied by Nason for any application or use by the user.

ALL ORDERS FOR PRODUCT ARE SUBJECT TO THE FOLLOWING: Nason warrants each product to be free from defects in material and workmanship under normal use and service. Nason's obligation under this warranty is limited to repairing or supplying, at our option, a part or parts to replace any defective part or parts which fail, within one (1) year from date of shipment. No product shall be returned without prior authorization. If authorized, the transportation charges shall be prepaid to Nason, Walhalla, South Carolina. Unauthorized returns will not be accepted.

The provisions of this warranty shall not apply to any part or parts which have been subject to misuse, negligence or accident, or which have been repaired or altered in any way so as in the judgment of Nason to affect adversely its performance, stability or reliability.

Nason neither assumes nor authorizes anyone to assume for it any other obligation or liability for any loss or damage, either direct, incidental or consequential, resulting from or arising out of or in connection with any of its defective part or parts.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND OF ANY OTHER OBLIGATION OR LIABILITY ON THE PART OF NASON OF ANY NATURE WHATSOEVER.

For Nason's catalog of
pneumatic and hydraulic
automation products
call toll-free 800.229.4955
or visit our website at
www.nasonptc.com

