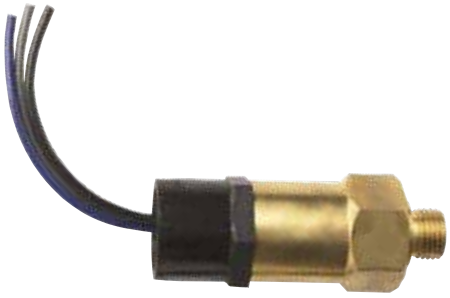
CUSTOM ENGINEERED SWITCHES AND TRANSDUCERS

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



NASON

NEW THINKING

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TRANSDUCERS

*

RESOURCES

NASON

NEW THINKING
FOR BETTER SOLUTIONS

After more than seventy 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 70,000-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

NASON SWITCH
DESIGNS ENSURE HIGH RELIABILITY

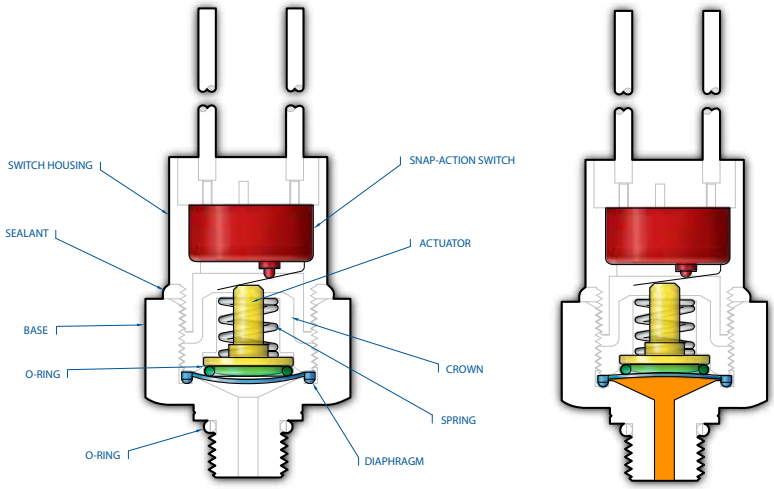
All of Nason's pressure switches use a snap-action electrical device activated by an elastomer diaphragm or piston, offering a precise and repeatable design. The snap-action design will maintain its state with contacts either open or closed, until a precise set point is reached when it will snap over 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.

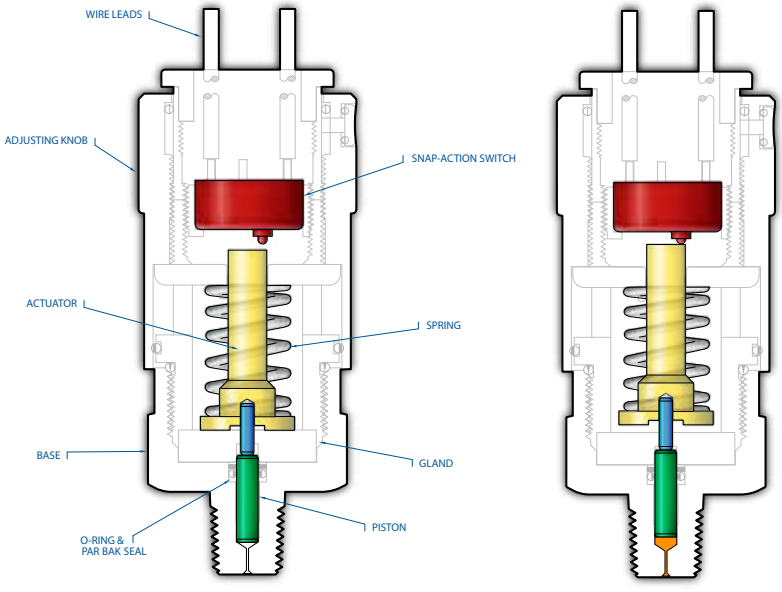
FLEXIBILITY
We offer media connections in NPT, BSP, SAE, JIS, DIN, MS, and many more (refer to page 23) as well as all the electrical connections depicted on the facing page.

DIAPHRAGM TYPE



SET POINT NOT REACHED | SET POINT REACHED

PISTON TYPE



SET POINT NOT REACHED | SET POINT REACHED

ELECTRICAL CONNECTION OPTIONS
MORE 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)
IP65

HH

DIN43650A
(Plug Only)

HR

DIN43650A
Strain Relief
(Plug & Receptacle)
IP67

HP

9.4mm
DIN
(Plug Only)

HM

9.4mm DIN
(Plug & Receptacle)
IP65

MP

Metri-Pack
Female 280
Series Sealed
IP66

NP

Metri-Pack
Male 280
Series Sealed
IP66

CP

Metri-Pack
Female 150
Series Sealed
IP66

DP

Metri-Pack
Male 150
Series Sealed
IP66

PP

Boot
(Military Connector)

QC

1/4" Male
Spade Quick
Connect

WL

Wire Leads

WP

Weather Pack
(Female)
IP66

TP

Weather
Pack
(Male)
IP66

EL

1/2" NPT
Male
Conduit

EF

1/2" NPT
Female
Conduit

WD

Deutsch
Receptacle
IP67

PD

Deutsch
Plug
IP67

ES

M12 - 4PIN
IP67

CL

Sheathed
18 AWG
Primaries

SL

SJO
Cable

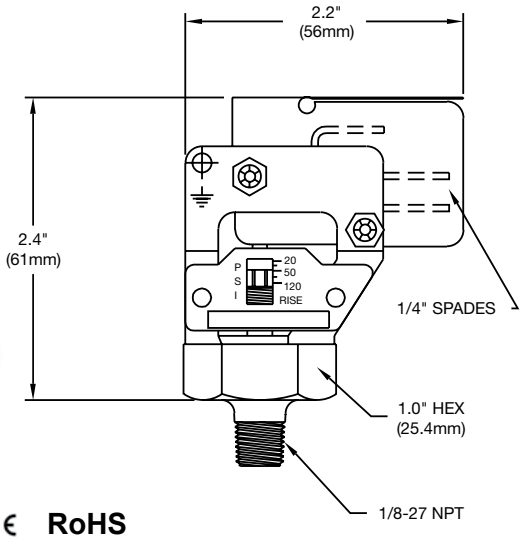
VL

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

RoHS

Operating Specifications

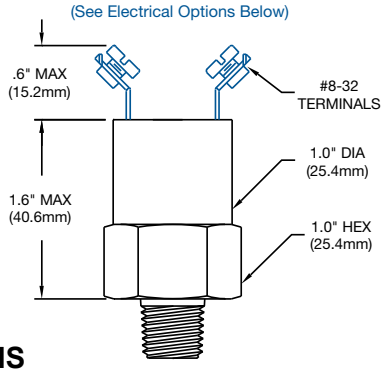
Set Point Range	2 — 120 PSI	(.14 — 8.3 Bar)
Set Point Tolerance	±1 PSI or 5%	(.07 Bar)
Maximum Operating Pressure	250 PSI	(17 Bar)
Proof Pressure	750 PSI	(51 Bar)
Differential	10 — 20%	
Current Rating	10 A @ 125/250 VAC	5 A @ 30 VDC
Media Connection	1/8" NPT Male Brass	
Circuit Form	SPDT	
Electrical Connection	1/4" Blades	
Diaphragm Material	Buna N	
Cycle Life	1 Million	
Operating Temperature	-20°F - +220°F	
Unit Weight	.2 lbs	

In-Stock Low Pressure Switches

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

For more **media connections**, see pages 23-24.
For more **electrical connections**, see page 7.

Shown with HP electrical option



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 *(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	
Operating Temperature	-20°F - +220°F	
Unit Weight	.13 lbs	

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to create your own custom CAD file

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

SM - 2 A - 9 5 R / *

Media Connection

- **1** 1/4" NPT Male
- **2** 1/8" NPT Male
- **6** 7/16" SAE O-Ring (-4)
- **14** 1/2" NPT Male
  1/8" NPT Female
- **17** 1/4" BSPP Male (G1/4)
- **28** 1/8" BSPP Male (G1/8)
- **41** 7/16" – 20 Internal 45° Flare – SAE J 513
- **77** M16 x 1.5 SAE J2244-3

For more media connections, see pages 23-24.

Circuit Form

- **A** SPST-NO
- **B** SPST-NC
- **C** SPDT

Fixed Set Point

- **2 — 120** PSI

For all available optional configurations, see page 22.

Set Point Direction

- **R** Rising
- **F** Falling

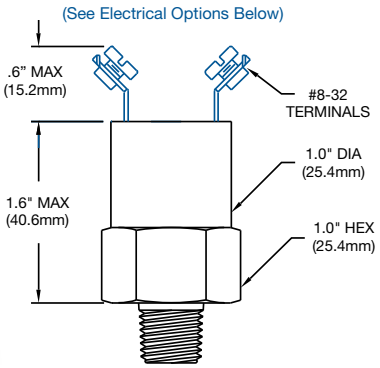
Electrical Options

- **WL** Wire Leads 18"
- **QC** 1/4" Spade Connection
- **WP** Weather Pack
- **HR** DIN43650A Connector
- **MP** Metri-Pack
- **AT** 10 A @ 125/250 VAC
  5 A @ 30 VDC
- **GG** Internal Ground
- **AU** Gold Plate/Alloy for low currents

* Defaults to Screw Terminals

For more electrical connections, see page 7.

Shown with WP electrical option



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	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	
Operating Temperature	-20°F - +220°F	
Unit Weight	.16 lbs	

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

MM - 6 A - 8 0 R / WL *

Media Connection

1	1/4" NPT Male
2	1/8" NPT Male
6	7/16" SAE O-Ring (-4)
14	1/2" NPT Male 1/8" NPT Female
17	1/4" BSPP Male (G1/4)
28	1/8" BSPP Male (G1/8)
41	7/16" – 20 Internal 45° Flare – SAE J 513

For more media connections, see pages 23-24.

Circuit Form

A	SPST-NO
B	SPST-NC
C	SPDT

Fixed Set Point

2 — 120 PSI

For all available optional configurations, see page 22.

Set Point Direction

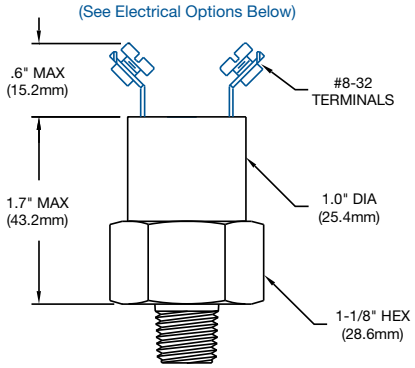
R	Rising
F	Falling

Electrical Options

WL	Wire Leads 18"
WP	Weather Pack
HR	DIN43650A Connector
MP	Metri-Pack
AT	10 A @ 125/250 VAC 5 A @ 30 VDC
AU	Gold Plate/Alloy for low currents

* Defaults to Screw Terminals

For more electrical connections, see page 7.



Shown with unibody housing and EF 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	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	
Operating Temperature	-20°F - +220°F	
Unit Weight	.23 lbs	

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

LM - 6 A - 2 5 0 R / WL *

Media Connection

- **1** 1/4" NPT Male
- **2** 1/8" NPT Male
- **6** 7/16" SAE O-Ring (-4)
- **12** M10 x 1 SAE J2244-3
- **49** M14 x 1.5 J2244/3
- **68** 9/16" – 18 SAE O-Ring Face Seal (Female)

Circuit Form

- **A** SPST-NO
- **B** SPST-NC
- **C** SPDT

Fixed Set Point

- **10 — 300** PSI

Set Point Direction

- **R** Rising
- **F** Falling

Electrical Options

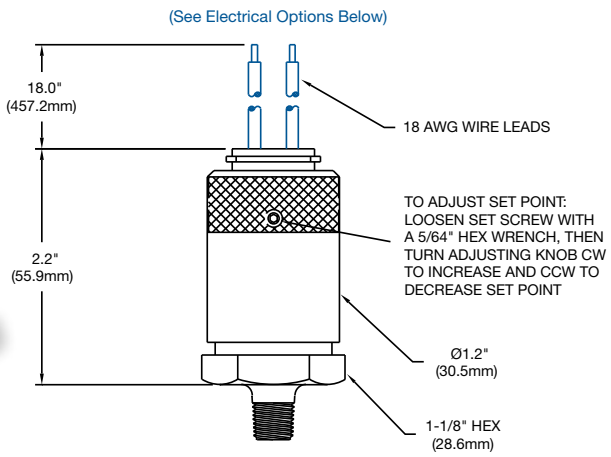
- **WL** Wire Leads 18"
- **WP** Weather Pack
- **HR** DIN43650A Connector
- **MP** Metri-Pack
- **AT** 10 A @ 125/250 VAC 5 A @ 30 VDC
- **AU** Gold Plate/Alloy for low currents

* 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.



Shown with HM electrical option

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 — 3000 PSI	(.21 — 206.8 Bar)
Set Point Tolerance	±1 PSI or 5%	(.07 Bar)
Maximum Operating Pressure	250 PSI (Ranges 1-3)	(17 Bar)
	5000 PSI (Ranges 4-5-6)	(344 Bar)
Proof Pressure	750 PSI (Ranges 1-3)	(51 Bar)
	15000 PSI (Ranges 4-5-6)	(1034 Bar)
Differential	10 — 20%	
Current Rating	5 A @ 125 VAC	3 A @ 24 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	

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

CJ	-	1	B	3	-		6	0	J	/	WL

Media Connection

1	1/4" NPT Male
2	1/8" NPT Male
6	7/16" SAE O-Ring (-4)
12	M10 x 1 SAE J2244-3
17	1/4" BSPP Male
28	1/8" BSPP Male

Circuit Form

A	SPST-NO
B	SPST-NC
C	SPDT

Range

1	3 — 10 PSI
2	6 — 30 PSI
3	20 — 120 PSI
4	100 — 400 PSI
5	250 — 1000 PSI
6	750 — 3000 PSI

Desired Set Point

3 — 120 PSI
121 — 3000 PSI

Set Point Direction

J	Rising Adjustable
G	Falling Adjustable

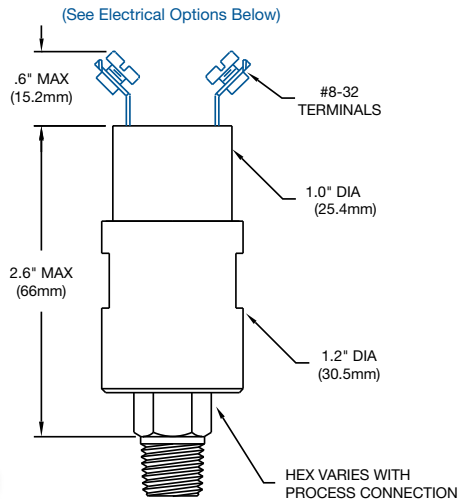
Electrical Options

WL	Wire Leads 18"
WP	Weather Pack
HM	9.4mm DIN
MP	Metri-Pack
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.



Shown with unibody housing and EL electrical option

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 *(Optional: Brass, 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 N	
Cycle Life	1 Million	
Operating Temperature	-20°F - +220°F	
Unit Weight	.56 lbs	

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

XM	-	1	A	-	1	5	0	0	R	/	WL	*

Media Connection

- **1** 1/4" NPT Male
- **2** 1/8" NPT Male
- **4** 7/16" SAE 37° Flare (-4)
- **6** 7/16" SAE O-Ring (-4)
- **11** 9/16" SAE O-Ring (-6)
- **17** 1/4" BSPP Male (G1/4)
- **47** 1/4" – 19BSPP Female (G1/4)

For more media connections, see pages 23-24.

Circuit Form

- **A** SPST-NO
- **B** SPST-NC
- **C** SPDT

Fixed Set Point

- **40 — 4000** PSI

For all available optional configurations, see page 22.

Set Point Direction

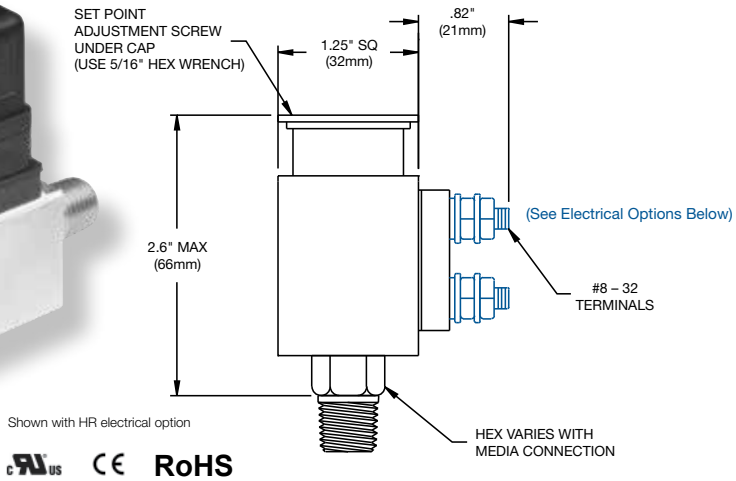
- **R** Rising
- **F** Falling

Electrical Options

- **WL** Wire Leads 18"
- **WP** Weather Pack
- **HR** DIN43650A Connector
- **MP** Metri-Pack
- **AT** 10 A @ 125/250 VAC 5 A @ 30 VDC
- **AU** Gold Plate/Alloy for low currents

* Defaults to Screw Terminals

For more electrical connections, see page 7.



Shown with HR electrical option

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 *(Optional: Brass, 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 N	
Cycle Life	1 Million	
Operating Temperature	-20°F - +220°F	
Unit Weight	.80 lbs	

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

WX	-	2	A	-		1	0	0	J	/	HR	*

Media Connection

1	1/4" NPT Male
2	1/8" NPT Male
4	7/16" SAE 37° Flare (-4)
6	7/16" SAE O-Ring (-4)
11	9/16" SAE O-Ring (-6)
17	1/4" BSPP Male (G1/4)
39	1/4" – 18 NPTF SAE J516 (-4)
67	9/16" – 18 SAE O-Ring Face Seal

For more media connections, see pages 23-24.

Circuit Form

A	SPST-NO
B	SPST-NC
C	SPDT

Adjustment Range

50 — 150 PSI
140 — 400 PSI
300 — 800 PSI
700 — 2500 PSI
2000 — 5000 PSI

For all available optional configurations, see page 22.

Set Point Direction

J	Rising Adjustable
G	Falling Adjustable

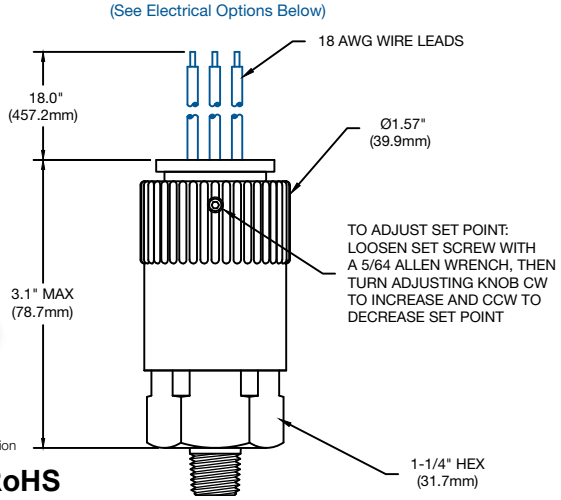
Electrical Options

WL	Wire Leads 18"
QC	1/4" Spade Connection
WP	Weather Pack
HR	DIN43650A Connector
MP	Metri-Pack
AT	10 A @ 125/250 VAC 5 A @ 30 VDC
GG	Internal Ground
AU	Gold Plate/Alloy for low currents

* Defaults to Screw Terminals

For more electrical connections, see page 7.

Shown with HR electrical option



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 — 517 Bar)
Set Point Tolerance	±5 PSI or 5%	(.34 Bar)
Maximum Operating Pressure	1000 PSI (Ranges 1 — 3)	(69 Bar)
	5000 PSI (Ranges 4 — 7)	(344 Bar)
	7500 PSI (Range 8)	(517 Bar)
Proof Pressure	3000 PSI (Ranges 1 — 3)	(206 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 *(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 (Ranges 1 — 3)	
	Hardened Steel Piston (Ranges 4 — 8)	
Cycle Life	1 Million	
Operating Temperature	-20°F - +220°F	
Unit Weight	.47 lbs (noryl adjustment knob); .70 lbs (metal adjustment knob)	

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

CD	-	1	B	5	-		7	5	0	J	/	EL

Media Connection

Piston

1 1/4" NPT Male
3 3/4" SAE Male (-8)
11 9/16" SAE Male

Diaphragms

1 1/4" NPT Male
9 3/8" NPT Male

Circuit Form

A SPST-NO
B SPST-NC
C SPDT

Range

1 10 — 40 PSI
2 25 — 100 PSI
3 50 — 200 PSI
4 100 — 400 PSI
5 250 — 1000 PSI
6 500 — 2000 PSI
7 1200 — 4500 PSI
8 2400 — 7500 PSI

Desired Set Point

10 — 7500 PSI

Set Point Direction

J Rising Adjustable
G Falling Adjustable

Electrical Options

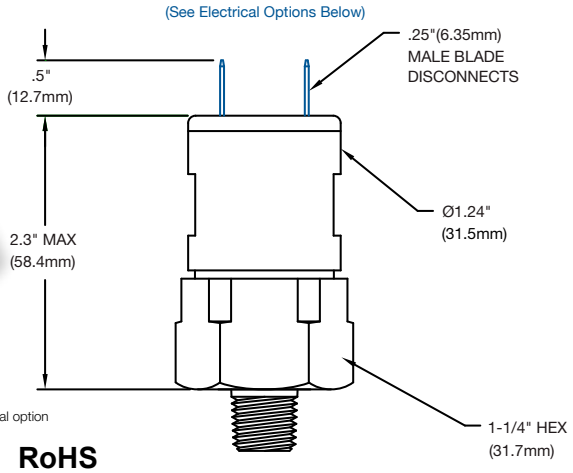
WL Wire Leads 18"
EL Male Conduit 1/2" — 14
EF Female Conduit 1/2" — 14
HR DIN43650A Connector
HH DIN43650A Plug Only
WP Weather Pack
MP Metri-Pack
WD Deutsch
AT 10 A @ 125/250 VAC 5 A @ 30 VDC
AU Gold Plate/Alloy for low currents

For more media connections, see pages 23-24.

For all available optional configurations, see page 22.

For more electrical connections, see page 7.

Shown with ES electrical option



cULus 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	1000 PSI (Diaphragm Model)	(69 Bar)
	5000 PSI (Piston Model)	(344 Bar)
Proof Pressure	3000 PSI (Diaphragm Model)	(206 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	
Operating Temperature	-20°F - +220°F	
Unit Weight	.33 lbs (noryl switch housing); .38 lbs (metal switch housing)	

CHECK OUT
nasonptc.com/configure
to create your own custom CAD file

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

CF - 1 B - 7 5 0 R / EL

Media Connection

Piston

1 1/4" NPT Male
3 3/4" SAE Male (-8)
11 9/16" SAE Male

Diaphragms

1 1/4" NPT Male
9 3/8" NPT Male

Circuit Form

A SPST-NO
B SPST-NC
C SPDT

Desired Set Point

10 — 4500 PSI

Set Point Direction

R Rising
F Falling

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

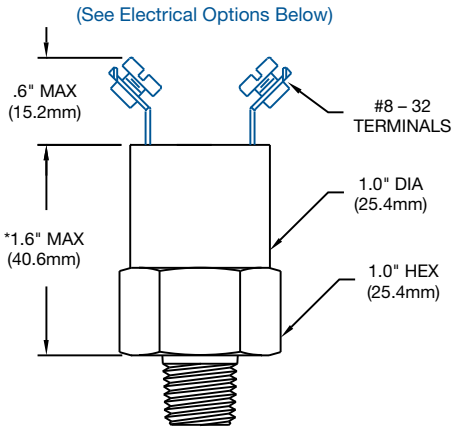
For more media connections, see pages 23-24.

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

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	
Operating Temperature	-20°F - +220°F	
Unit Weight	.16 lbs	

CHECK OUT
nasonptc.com/configure
to create your own custom CAD file

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

VM - 11 A - 1 0 R / WP *

Media Connection
- **1** 1/4" NPT Male
- **2** 1/8" NPT Male
- **11** 9/16" SAE O-Ring (-6)
- **17** 1/4" BSPP Male (G1/4)

Circuit Form
- **A** SPST-NO
- **B** SPST-NC
- **C** SPDT

Fixed Set Point
4" — 29" Hg

Set Point Direction
- **R** Rising
- **F** Falling

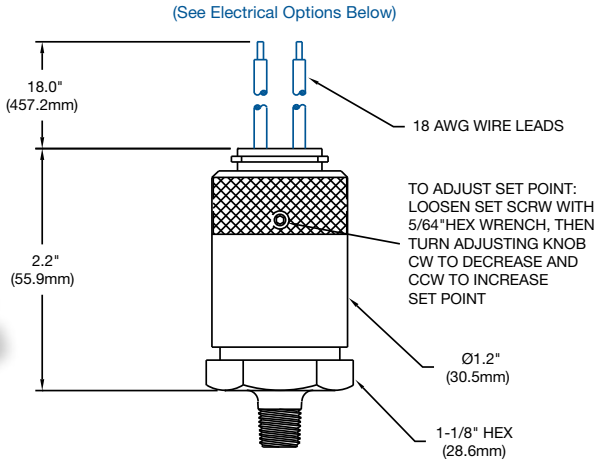
Electrical Options
- **WL** Wire Leads 18"
- **WP** Weather Pack
- **HR** DIN43650A Connector
- **MP** Metri-Pack
- **AT** 10 A @ 125/250 VAC 5 A @ 30 VDC
- **AU** Gold Plate/Alloy for low currents

* 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.



Shown with HM electrical option

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	2 — 28 Hg	(.07 - .95 Bar)
Set Point Tolerance	± 2" Hg	(.07 Bar)
Maximum Operating Pressure	250 PSI (Ranges 1 — 3)	(17 Bar)
Proof Pressure	750 PSI (Ranges 1 — 3)	(51 Bar)
Differential	20 — 40%	
Current Rating	3 A @ 125 VAC	2 A @ 30 VDC (Resistive)
Media Connection	Standard: Brass *(Optional: Aluminum, Nickel Plating, Delrin, 303 SS, 316 SS, CF)*	
Circuit Form	SPST-NO, SPST-NC or SPDT	
Electrical Connection	See Order Chart Below for Options	
Diaphragm Material	Buna N	
Cycle Life	1 Million	
Operating Temperature	-20°F - +220°F	
Unit Weight	.42 lbs	

CHECK OUT
nasonptc.com/configure
to create your own custom CAD file

How to Order (Example: Part Number: **JV - 1B2 - 15J / WL**)

JV	-	1	B	2	-		1	5	J	/	WL

Media Connection

1	1/4" NPT Male
2	1/8" NPT Male
6	7/16" SAE O-Ring (-4)
11	9/16 - 18 O-Ring -6 (SAE)
17	1/4" BSPP Male
28	1/8" BSPP Male

Circuit Form

A	SPST-NO
B	SPST-NC
C	SPDT

Range

1	2-10 Hg
2	5-28 Hg

* Not yet UL recognized

Desired Set Point

2 — 28" Hg

Set Point Direction

J	Rising Adjustable
G	Falling Adjustable

Electrical Options

WL	Wire Leads 18"
WP	Weather Pack
HM	9.4mm DIN
MP	Metri-Pack
AU	Gold Plate/Alloy for low currents

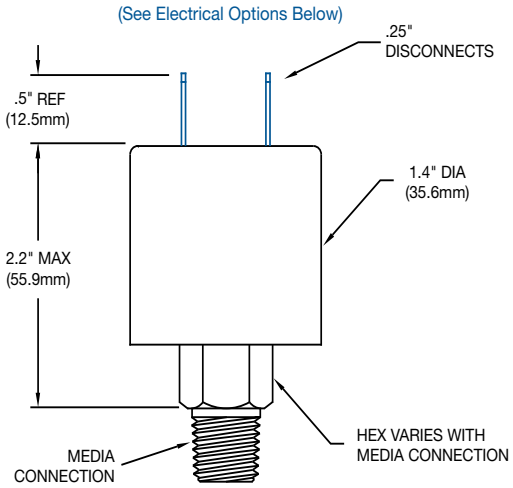
For more media connections, see pages 23-24.

For all available optional configurations, see page 22.

For more electrical connections, see page 7.

Shown with HR electrical option

RoHS



Features

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

Operating Specifications

Set Point Range	1.5" — 28" Hg	(.05 - .95 Bar)
Set Point Tolerance	±2" Hg	(.07 Bar)
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	
Operating Temperature	-20°F - +220°F	
Unit Weight	.48 lbs	

CHECK OUT
nasonptc.com/configure
to create your own custom CAD file

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

VF - 1 A - 2 0 R / QC *

Media Connection

1	1/4" NPT Male
2	1/8" - 27 NPT Male
8	1/8" -27 NPT Female
11	9/16" -18 SAE-6
17	1/4" BSPP Male (G1/4)

Circuit Form

A	SPST-NO
B	SPST-NC
C	SPDT
J	514

Fixed Set Point

1.5" — 28" Hg

Set Point Direction

R	Rising
F	Falling

Electrical Options

WL	Wire Leads 18"
WP	Weather Pack
HR	DIN43650A Connector
MP	Metri-Pack
AT	10 A @ 125/250 VAC 5 A @ 30 VDC
AU	Gold Plate/Alloy for low currents
QC	1/4" Male Spade Quick Connect

* 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.

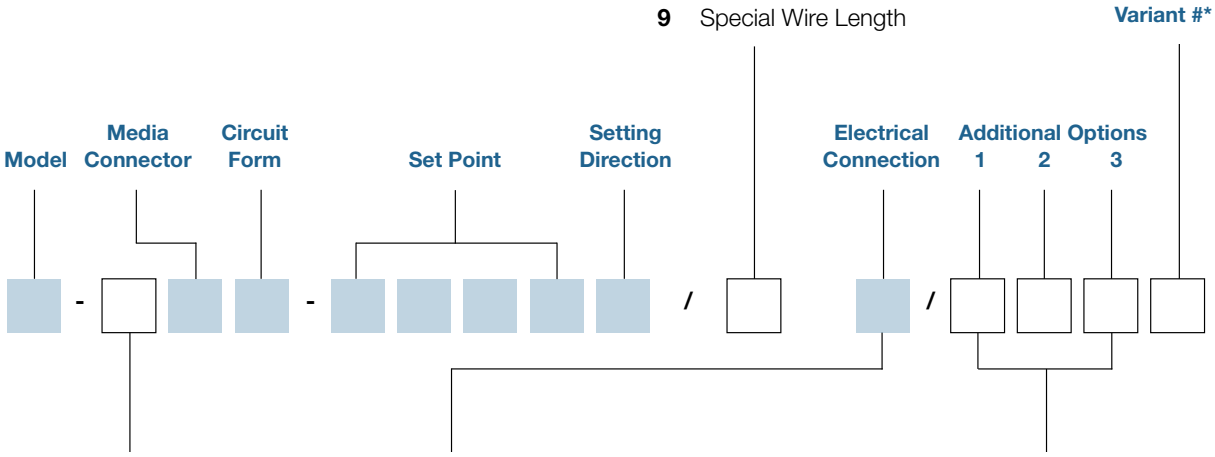
Pressure / Vacuum Switch Part Number Configuration

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

CHECK OUT
nasonptc.com/configure
to create your own custom CAD file

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
S Zinc Plated Steel
T 303 Stainless Steel
U 316 Stainless Steel

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

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

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 (DT04)
PD Deutsch Plug (DT06)
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

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 (-8)	•	•		•	•	•	•	•	•	
4	7/16 — 20 37° JIC Flare (-4)			•		•	•				
5	1/4 — 18 NPT Female	•	•			•	•	•			
6	7/16 — 20 O-Ring J514 (-4)	•	•	•	•	•	•	•		•	•
7	1/4 — 18 NPT Female (Obsolete) See Option 5										
8	1/8 — 27 NPT Female	•	•			•	•		•	•	•
9	3/8 — 18 NPT Male	•	•	•	•	•	•	•	•		
10	1/4 Female Stainless Steel (Obsolete) See Option 5										
11	9/16 — 18 SAE J514 O-Ring (-6)	•	•	•	•	•	•	•	•		•
12	M10 x 1 SAE J2244-3 O-Ring	•	•	•	•	•	•				
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 (-4)					•	•	•			
16	7/16 — 20 Female SAE J 514 37 DEG			•		•	•				
17	1/4 BSPP Male (G1/4)	•	•	•	•	•	•	•	•	•	•
18	7/16 — 20 SAE J1926 O-Ring (Adjustable)					•	•				
19	1/8 BSPT JIS (R1/8)	•	•	•		•	•				
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 (R1/2)	•	•						•		
28	1/8 BSPP (G1/8)	•	•		•						
29	3/8 — 24 SAE O-Ring J514 (-3)	•	•			•	•				
30	1/4 BSPT (JIS) (R1/4)	•	•					•	•		
31	Flange (NS Only)										
32	M12 — 1.5 Metric	•	•								
33	NO LONGER AVAILABLE										
34	7/16 — 20 MS33649 Female*					•	•				
35	1/2 — 14 NPT (Male)	•	•	•		•	•				
36	9/16 — O-Ring Ext Boss (-6)			•		•	•				
37	3/8 — 24 2A 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 SAE J1926 O-Ring (Adjustable)										
43	M10 x 1 SAE J2244-3 Extended	•	•								
44	1/4 — 18 NPT Female Extended					•	•				
45	9/16 — 18 Female SAE J514 O-Ring (-6)					•	•				
46	1/8 NPT Male Clipped Hex	•	•								
47	1/4 — 19 BSPP Female (G1/4)					•	•				

*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
48	9/16 — 18 SAE J514 O-Ring (-6)										•
49	M14 x 1.5 J2244/3 O-Ring	•	•	•		•	•	•			
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 J2244/3 O-Ring	•	•	•		•	•	•			
54	1-1/8 Hex 1/4 NPT					•	•				
55	1/2 BSPP (G1/2)					•	•				
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° Male					•	•	•			
62	NO LONGER AVAILABLE										
63	1/2 — 20 Extended	•	•								
64	3/8 — 19 BSPP (G3/8)	•	•								
65	3/4 — 14 NPT Male			•							
66	1/4 Tube Plastic	•									
67	9/16 — 18 SAE J1453 O-Ring Face Seal (-4)			•		•	•	•			
68	9/16 — 18 SAE O-Ring Face Seal (Female)			•		•					
69	11/16 — 16 SAE J1453 O-Ring Face Seal (-6)					•	•	•			
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 SAE J2244/3 O-Ring							•			
74	Special SM/MM Port Seal	•	•								
75	1/8 — 27 Straight with 1/8 Barb									•	
76	M8 x 1 SAE J2244-2 O-Ring	•	•								
77	M16 x 1.5 SAE J2244-3 O-Ring	•	•								
78	M16 x 1.0							•			
79	M14 x 1.5 For Washer Seal										
80	3/8 O-Ring Port Seal	•	•								
81	3/8 — 24 J512 (-3) 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	•	•								
89	M16 O-Ring Port Seal	•	•								
90	Stoelting Flange	•									
91	1/2 NPT Male 1/4 NPT Female	•	•			•					
92	3/8 BSPT (R3/8)	•	•			•					
93	7/16 — 20 For 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: _____

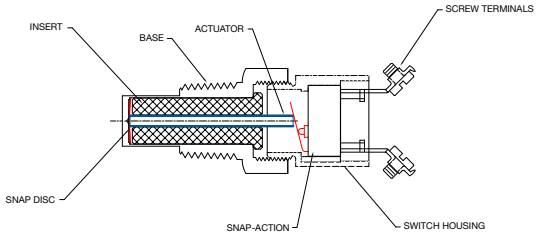
Address: _____

Project Number or Name: _____

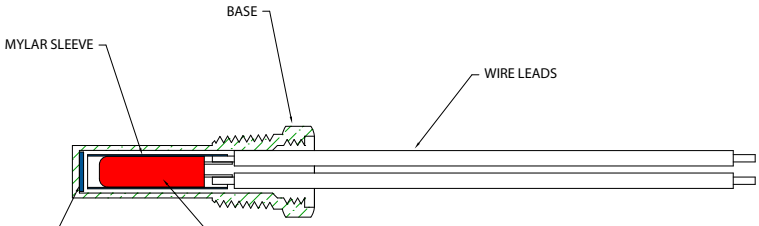
Name & Title: _____ Phone: _____

Email Address: _____

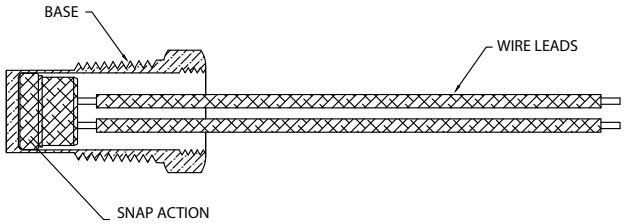
TEMPERATURE SWITCHES



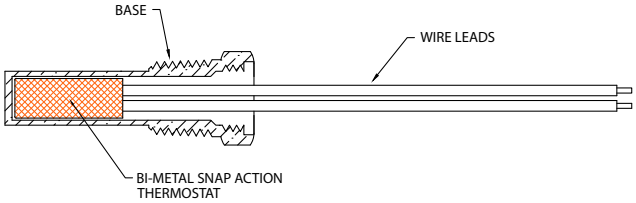
TD SNAP DISC THERMOSTAT DESIGN



TT BI-METAL THERMOSTAT DESIGN



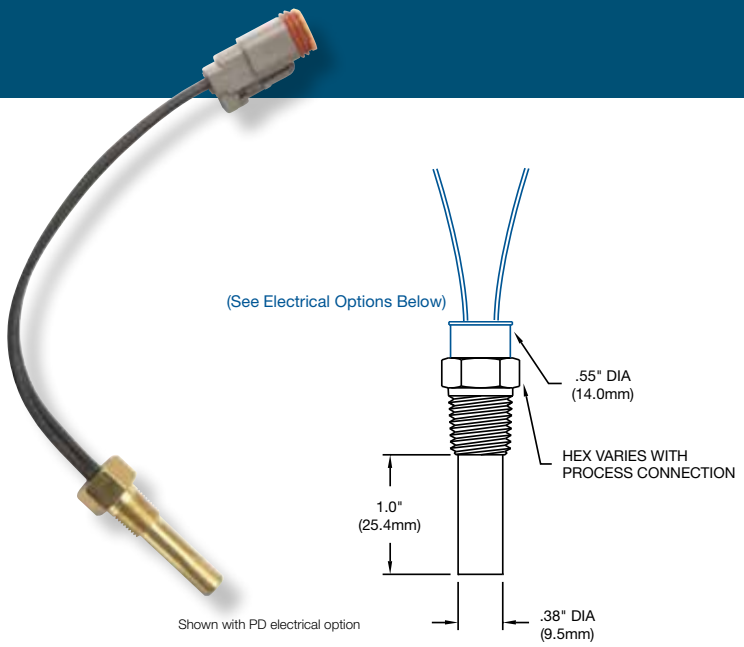
TF SNAP ACTION THERMOSTAT



TW BI-METAL SNAP ACTION THERMOSTAT

Models TT, TD, TW and TF

- TT – Bi-metal immersion temperature switch for low voltage/low current applications
- TD – Snap disc design for high reliability with shock and vibration
- TW – Bi-metal snap action immersion temperature switch built to withstand higher temperatures and up to 10,000 cycles
- TF – Snap action thermostat switch designed for lower temperature applications up to 100,000 cycles
- Available in a wide range of configurations
- NEMA 4 and 13 available
- 100% tested for accuracy



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

RoHS

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 *(below ¼-18 NPT thread size)*	.1A & 3A @ 120VAC	4A 12 VDC & 24 VDC *(gold diffused contacts)*
(¼-18 NPT thread and above)	.1A - 6A @ 120VAC	12VDC & 4A @ 24 VDC *(gold diffused contacts)*
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	
Unit Weight	.09 lbs	
Installation Torque	15 ft lbs	
	Smaller than 3/8" NPT Male = 5 — 10 ft lbs	

CHECK OUT
nasonptc.com/configure
to create your own custom CAD file

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

TT - D 3 A - 1 0 0 R / WL *

Probe Length
- **D** 1/2"
- **E** 3/4"
- **F** 1"
- **H** 1-1/2"
- **J** 2"

Media Connection
- **1** 1/2" NPT Male
- **2** 3/8" NPT Male
- **3** 1/4" NPT Male
- **5** 3/4" SAE O-Ring (-8)
- **6** M16 x 1.5
- **13** 1/4" NPT (316SS)
- **35** M12 x 1.5
- **46** M14 x 1.25

Circuit Form
- **A** SPST-NO
- **B** SPST-NC

Fixed Set Point
40°F — 300°F
(5° Increments)

Set Point Direction
- **R** Rising
- **F** Falling

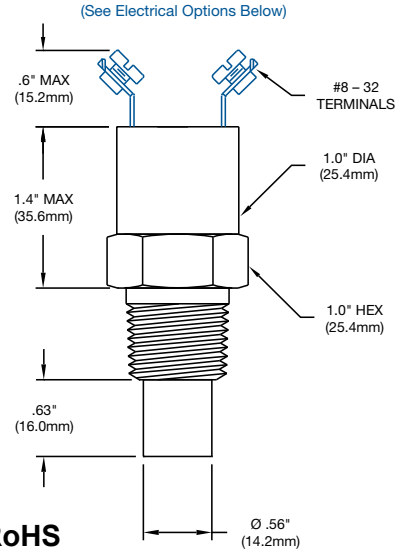
Electrical Options
- **WL** Wire Leads 6"
- **QC** 1/4" Spade Connection
- **WP** Weather Pack
- **MP** Metri-Pack
- **GG** Internal Ground

* 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.



cULus 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	
Unit Weight	.21 lbs	
Installation Torque	15 ft lbs	
	Smaller than 3/8" NPT Male = 5 — 10 ft lbs	

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

TD - 1 C - 1 7 5 R / WP *

Media Connection

1	1/2" NPT Male
2	3/8" NPT Male
5	3/4" SAE O-Ring (-8)
17	M18 x 1.5 SAE J2244
23	1/2" BSPT (R1/2)
38	9/16" SAE-6 J514

For more media connections, see pages 31-32.

Circuit Form

A	SPST-NO
B	SPST-NC
C	SPDT

Fixed Set Point

150°F — 300°F
(5° Increments)

Set Point Direction

R	Rising

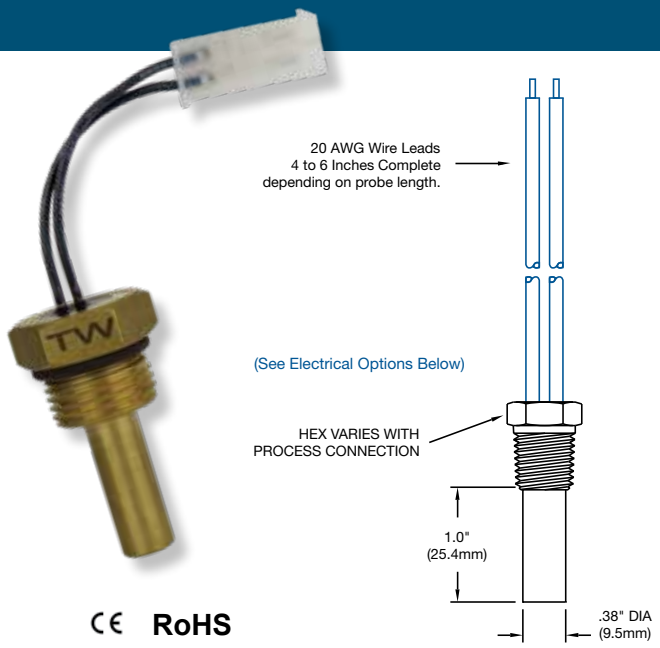
For all available optional configurations, see page 33.

Electrical Options

QC	1/4" Spade Connection
WL	Wire Leads 18"
WP	Weather Pack
HR	DIN43650A Connector
MP	Metri-Pack
WD	Deutsch
AT	10 A @ 125/250 VAC 5 A @ 30 VDC
AU	Gold Plate/Alloy for low currents

* Defaults to Screw Terminals

For more electrical connections, see page 7.



CE **RoHS**

Features

- Snap action immersion temperature switch
- Factory preset temperature
- Hysteresis built in
- Available in a wide range of configurations
- Economical and compact
- NEMA 4, 13

Operating Specifications

Set Point Range	120° — 285°F	(50° — 140°C)	
Set Point Tolerance	±5°F	(2.8°C)	
Maximum Temperature	325°F	(163°C)	
Current Rating	10 A @ 120 VAC	5 A @ 240 VDC	4 A @ 12VDC
Differential	30% of the set point *(nominal)*		
Cycle Life	10,000 cycles *(Depending on amp draw)*		
Probe Length	1.0" standard		
Media Connection	Standard: Brass *(Optional: 303 SS, 316 SS)*		
Circuit Form	Normally close or normally open		
Electrical Connection	Wire leads standard - See options below		
Maximum External Pressure	5000 PSI		

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How to Order (Example: Part Number: **TW - F3A - 140R / WL**)

TW - F 3 A - 1 4 0 R / WL *

Probe Length
- **D** 1/2"
- **E** 3/4"
- **F** 1"
- **H** 1-1/2"
- **J** 2"

Media Connection
- **1** 1/2" NPT Male
- **2** 3/8" NPT Male
- **3** 1/4" NPT Male
- **5** 3/4" SAE O-Ring (-8)
- **17** M18 x 1.5 SAE
- **26** M14 x 1.5 SAE
- **32** M16 x 1.5 SAE

Circuit Form
- **A** SPST-NO
- **B** SPST-NC

Fixed Set Point
120°F — 285°F
(5° Increments)

Set Point Direction
- **R** Rising

Electrical Options
- **WL** Wire Leads
- **QC** 1/4" Disconnects
- **WP** Weather Pack
- **WD** Deutsch DT04-2P
- **MP** Metri-pack

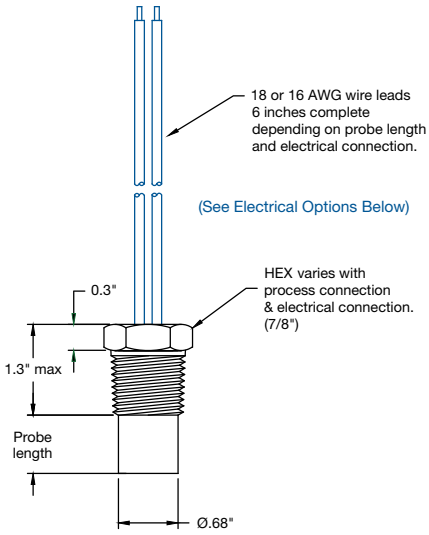
For more media connections, see pages 31-32.

For all available optional configurations, see page 33.

For more electrical connections, see page 7.

Shown with HR electrical option

CE **RoHS**



Features

- Snap action immersion temperature switch
- Factory preset temperature
- Hysteresis built in
- Available in a wide range of configurations
- Economical and compact
- NEMA 4, 13 IP67

Operating Specifications

Set Point Range	50° — 285°F	(10° — 140°C) in 5° increments
Set Point Tolerance	±7°F	(±4°C)
Maximum Temperature	325°F	(163°C)
Current Rating	15 A @ 125 VAC	10 A @ 250 VAC
Differential	20°F	(11.1°C) *(nominal)*
Cycle Life	100,000 cycles *(Depending on amp draw)*	
Probe Length	0.5" standard	
Media Connection	Standard: Brass *(Optional: 303 SS, 316 SS)*	
Circuit Form	Normally close or normally open	
Electrical Connection	Wire leads standard - See options below	
Maximum External Pressure	1000 PSI	

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to create your own custom CAD file

How to Order (Example: Part Number: **TF - D1A - 140R / WL**)

TF - D 1 A - 1 4 0 R / WL *

Probe Length
- **C** 0"
- **D** 1/2"
- **E** 3/4"

Media Connection
- **1** 1/2" NPT Male
- **2** 3/8-18" NPT Male
- **5** 3/4-16" NPT SAE (-8)
- **7** 1/2-14" BSPP
- **17** M18 x 1.5 SAE
- **23** 1/2-14" BSPT
- **32** M16 x 1.5 SAE

Circuit Form
- **A** SPST-NO
- **B** SPST-NC

Fixed Set Point
50°F — 285°F
(5° Increments)

Set Point Direction
- **R** Rising

Electrical Options
- **WL** Wire Leads
- **QC** 1/4" Disconnects
- **WP** Weather Pack
- **WD** Deutsch DT04-2P
- **MP** Metri-pack
- ***HR** DIN 43650A Connector
- ***EL** 1/2 NPT Male Condult (with 18" wire leads)
- **AU** Gold Plate/Alloy (for low currents)

* Are all special options

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

		Model Probe Codes									
		TD	TT/TW						TF		
Option	Base Thread Size*		D 1/2"	E 3/4"	F 1"	G 1-1/4"	H 1-1/2"	J 2"	C 0"	D 1/2"	E 3/4"
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) J514	•	•	•	•		•	•		•	
6	M16 x 1.5 NON SAE		•	•	•			•			
7	1/2 BSPP (G1/2)	•		•				•	•		
8	1/2 NPT (1PC)										
9	3/8 NPT (Short) NON SAE										
10	M14 x 1.5 (Nickel Plated) NON SAE			•							
11	M14 x 1.5 NON SAE			•	•						
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 J514										
16	3/8 — 19 BSPT (R3/8)	•	•			•					
17	M18 x 1.5 SAE J2244/3 O-Ring	•	•	•	•						
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 45° 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 J2244/3 O-Ring		•	•	•						
27	M22 x 1.5 SAE J2244/3 O-Ring	•			•						
28	1/4 — 19 BSPT (R1/4)			•							
29	3/8 — 19 BSPP (G3/8)			•			•				
30	3/8 NPT (316SS)		•	•	•						
31	3/4 — 16 UNF (304 SS)										
32	M16 x 1.5 (SAE) J2244/3										

*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*	Model Probe Codes									
		TD	TT/TW						TF		
			D 1/2"	E 3/4"	F 1"	G 1-1/4"	H 1-1/2"	J 2"	C 0"	D 1/2"	E 3/4"
33	5/8 — 18 SAE J513 45° Flare		•	•							
34	1/2 NPT (Short) Male										
35	M12 x 1.5 SAE J2244/3 **(TT only)**		•		•						
36	3/4 — 16 SAE O-Ring (Nickel Plated)										
37	M14 x 1.5 Taper Thread										
38	9/16 — 18 SAE J514 O-Ring (-6)	•	•	•	•	•	•	•			
39	M16 x 2.0		•								
40	1/2 — 20 UNF SAE J514 O-Ring (-5)		•		•						
41	3/8 — 24 SAE J514 O-Ring (-3)		•								
42	1/8 NPT Male **(TT only)**		•		•						
43	1/4 — 19 BSPP (G1/4)		•		•						
44	M16 x 1.5 303 SS				•						
45	1/2 BSPP 303 SS (G1/2)	•									
46	M14 x 1.25				•						
47	M16 x 1.5 45° Flare		•		•						
48	7/16 — 20 SAE J514 O-Ring (-4)		•		•						
49	1 1/16 — 12 SAE J514 O-Ring (-12)	•	•								
50	1/8 — 28 BSPT (R1/8) **(TT only)**		•								
51	M20X 1.5 Taper										
52	3/8 NPT 303 SS Male										
53	M16 X 1.5 For Washer		•	•	•		•	•			
54	M10 X 1.5										
55	1/8 — 28 BSPP (G 1/8) **(TT only)**		•								
56	M12 x 1.5 For Washer **(TT only)**		•								
57	3/8 — 19 BSPP Washer (G3/8)		•								
58	1/4 — 19 BSPP (G1/4) 316 SS				•						
59	7/8 — 14 SAE J514 O-Ring (-10)										
60	3/4 — 16 SAE J514 O-Ring (-8)										
61	M10 x 1.0 **(TT only)**					•					
62	3/4 — 16 for Washer Seal		•								
63	1/2 — 14 BSPP (G1/2) 316SS	•									

*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.)

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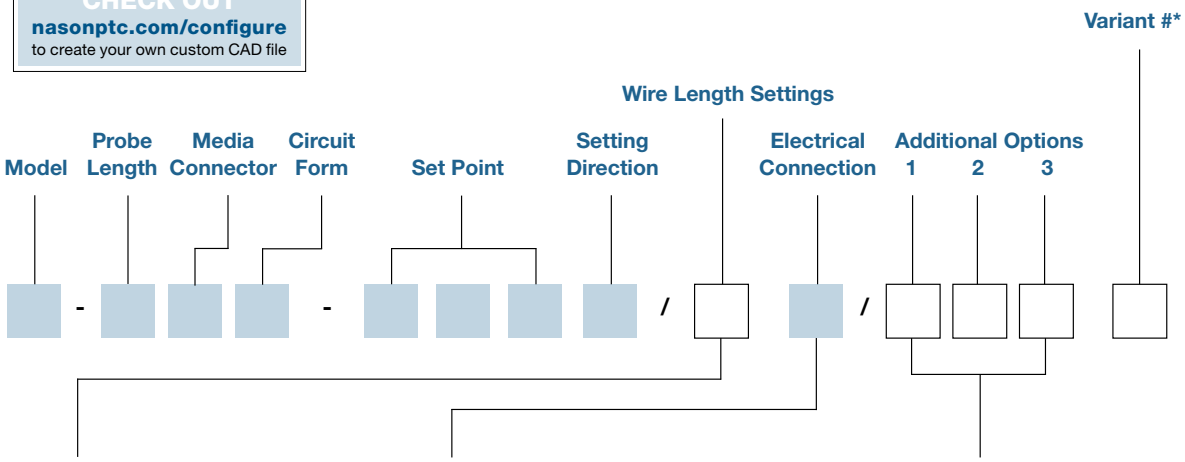


Wire Length Settings

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 (DT04)
PD	Deutsch Plug (DT06)
HL	Lighted DIN (Plug & Receptacle)
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

- New models – NTS, NT110, NT41, NES, NESD, NTBT, and NTBT-DL
- 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

- Ranges from vacuum to 5,800 psi
- Voltage and current outputs
- Brass or 316 stainless steel housing options
- Brass or stainless steel & elastomeric wetted parts
- 1.0% accuracy
- Thermal compensation
- Custom output and range options
- OEM testing and approval
- Compact design
- Affordable price point
- Long-term stability
- Low-power consumption
- Rugged construction

Application

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

RoHS

Image shown is brass. Stainless steel is also available as a standard option.

Description

The new NT Series pressure transducer packs powerful piezoresistive ceramic pressure sensors into a compact low-cost all-brass or 316 stainless steel body.

Reliable and easy to install, the NT sets a new price-performance standard for low-cost, high-volume commercial and industrial applications.

How to Order (Example: Part Number: **NT - B01 - B - V050 - G - B00 - 4 - BN**)

Model

NT - **B** **01** - **B** - **V050** - **G** - **B00** - **4** - **BN**

Material
B = Brass (Standard)
U = 316 Stainless Steel

Media Connection
01 = 1/8"-27 NPT
03 = 1/4" NPT Male
09 = 7/16"-20, O-ring seal
10 = 9/16-18" UNF Male, O-ring
13 = 1/4-19" BSPP Male
39 = M14x1.5 Male, O-ring seal
*

Output
B = 4-20mA
K = 0.5-4.5 VDC (Ratiometric)
D = 0-10 VDC
C = 0-5 VDC (Non-ratiometric)

Pressure Range (PSI)

V050	**500**
V085	**750**
0025	**1000**
0050	**3000**
0100	**4000**
0150	**5000**
0250	**5800**

*

Pressure Type
G = Gauge

Electrical Connection
B00 = 3 pin Packard
D00 = 4 pin Mini 9.4 DIN
Q00 = M12
W3P = 3 pin Deutsch
C01 = 1 m Cable Out
C03 = 3 m Cable Out
L00 = Large 18 m DIN
*

Accuracy
4 = 1.0%

O-Ring Material
BN = Buna N (Standard)
VT = Viton (FKM)
EP = EPDM
SI = Silicone

* Consult factory for further OEM options.

Specifications

Input

Supply Voltage	(B) 12 VDC to 36 VDC for 4 - 20 mA Output (C) 12 VDC to 30 VDC for 0 - 5 VDC Non-Ratio Metric Output (D) 12 VDC to 30 VDC for 0 - 10 VDC Non-Ratio Metric Output (K) 5.0 VDC +/- .5 VDC for 0.5 - 4.5 VDC Ratio Metric Output
Pressure Range	Vacuum to 5,800 PSI
Over Pressure	2x (8700 psi max)
Burst Pressure	0 – 750 psi = 3x, 750 – 5800 psi = 2.25x (max 8700)
Fatigue Life	More than 1 million cycles

Performance

Accuracy	±1.0% of Span: from -20°C to 85°C (-4°F TO 185°F) FSC ±2.0% of Span: from -40°C to 100°C (-40°F TO 212°F) FSO outside of FSC
Stability	< 0.2% F.S.O./year
Response Time	< 1 mS
Compensated Temperatures	-20°C to 85°C (-4°F TO 185°F)
Operating Temperatures	-40°C to 100°C (-40°F TO 212°F)
Zero Output	0 ± 0.2 mV/V @ 25 °C
Vibration	15 g's, 10-2000 Hz
Shock	50g, 11ms, 1/2 sine

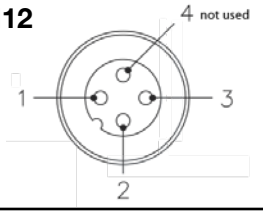
Mechanical Configuration

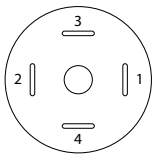
Pressure Port	¼ NPT (standard)**
Electrical Connection	M12, 9.4 Mini DIN, 3-pin Deutsch, 3-pin Packard, or cable out.
Sealing Rating	IP67 when used with M12 cable assembly
Wetted Parts	Brass or 316 stainless steel & elastomer

** See How to Order for options.

Electrical connections

Signal	Function	Color	Pin	Electrical Connector
4-20 mA	Supply V	Brown	1	**M12**
	Output	Blue	3	
0-10V or 0.5-4.5V	Supply V+	Brown	1	
	Output	White	2	
	Com	Blue	3	
4-20 mA	Supply V	Red	1	**DIN 4 pin (9.4)**
	Output	Black	2	
0-10V or 0.5-4.5V	Supply V+	Red	1	
	Com	Black	2	
	Output	White	3	





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
- 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)

CE **RoHS**

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.

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

NT25 - **03** - **D** - **1000** - **G** - **Q00** - **2** - **T40**

Model
NT25= 2X Over Pressure

NT26= 4X Over Pressure (up to 5000 PSI)

NT27= 10X Over Pressure (up to 2000 PSI)

Media Connection
03 = 1/4" NPT Male

09 = 7/16"-20* **

Output
B = 4-20mA
C = 0-5 vdc
D = 0-10 vdc
H = 1-5 vdc
J = 1-6 vdc
G = 0.5-5.5 vdc
W = .5-4.5 vdc (non-ratiometric)

Pressure Range (PSI)

V000	**0300**
V015	**0400**
V045	**0500**
V085	**0600**
V135	**0700**
V185	**0800**
V285	**0900**
	1000
0015	**2000**
0025	**3000**
0050	**4000**
0100	**5000**
0150	**6000**
0200	**010K**
0250	

Pressure Type
G = Gauge

Electrical Connection
Q00 = IP69K M12
D00 = 4 pin Mini 9.4 DIN
**

Accuracy
1 = 0.15%
2 = 0.25%

Pressure or Temp Set Point (P or T) % of full pressure range (P) or degrees C (T) T40
X = no SP
P or T10 = 10% of pressure range or 10°C
P or T20 = 20% of pressure range or 20°C
P or T30 = 30% of pressure range or 30°C
P or T40 = 40% of pressure range or 40°C
P or T50 = 50% of pressure range or 50°C
P or T60 = 60% of pressure range or 60°C
P or T70 = 70% of pressure range or 70°C
P or T80 = 80% of pressure range or 80°C
P90 = 90% of pressure range
(P = % of the full pressure range selected)
(full temp range is 10 to 80°C)
M = Maintenance mode

* For pressure 3000 PSI and higher only.

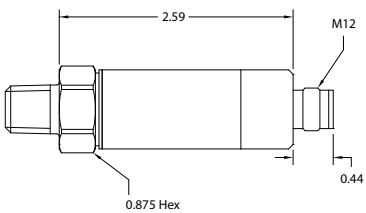
** Consult factory for further OEM options.

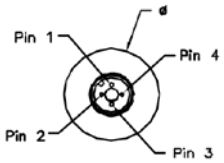
Specifications

Performance	Performance @ 25°C (77°F)
Accuracy	0.25% BFSL (includes: non-linearity, hysteresis and non-repeatability)
Overange Protection	2x Rated Pressure or optional 4x and 10x
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	-40° to 100°C (-40 to 212°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).
Maintenance Mode	The maintenance mode output indicates 1/2 bridge failure.

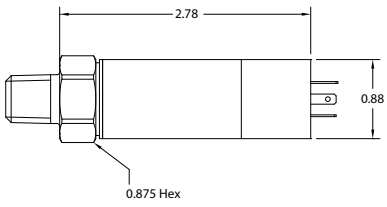
Electrical Connections

M12





9.4 mini Din



NT25 M12 Pin Assignments

Voltage Units	Current Units
Pin 1 = - Power Supply	Pin 1 = + Power Supply
Pin 2 = Output	Pin 2 = N/C
Pin 3 = Common	Pin 3 = Output
Pin 4 = Digital Output (optional)	Pin 4 = N/C

NT25 9.4 Pin Assignments

Voltage Units	Current Units
Pin 1 = + Power Supply	Pin 1 = + Power Supply
Pin 2 = - Power Supply	Pin 2 = Output
Pin 3 = Output	Pin 3 = N/C
Pin 4 = Digital Output (optional)	Pin 4 = N/C

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

CE **RoHS**

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

NT40 - **03** - **B** - **0500** - **G** - **Q00** - **5**

Media Connection

01 = 1/8" NPT Male
03 = 1/4" NPT Male
09 = 7/16-20"
10 = 9/16-18" UNF Male
13 = G1/4" Male
**

Output

B = 4-20mA
C = 0-5 vdc
D = 0-10 vdc
K = Ratio metric .5-4.5 vdc
**

Pressure Range (PSI)

V000
V015
V045
V085

0015
0025
0050
0100
0250
0500
1000
3000
5000
**

Pressure Type

G = Gauge

Electrical Connection

Q00 = M12
D00 = 9.4 mini DIN
**

Accuracy

5 = 0.4%
**

** Consult factory for further OEM options.

Specifications

Input

Supply Voltage	8-28 VDC 5 VDC (0.5-4.5V)
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

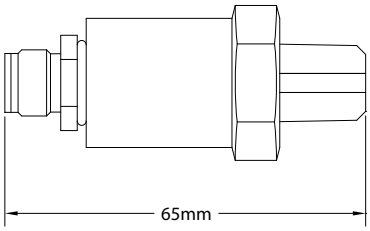
Performance

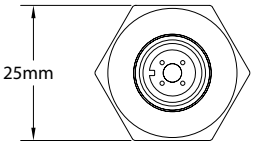
Accuracy	0.4%
Stability	0.2% full scale
Compensated Temperatures	-10 to 75°C (14 to 167°F)
Operating Temperatures	-20 to 80°C (-4 to 176°F)
Zero and Span Offset Tolerance	1.5%

Mechanical Configuration

Pressure Port	1/4 NPT (standard) *
Electrical Connection	M12 *
Sealing Rating	IP67 when used with M12 cable assembly
Diaphragm Material	0-75 PSI = 316 SS • 100-1500 PSI = Ceramic • 2,000-10,000 PSI = 17 - 4 SS

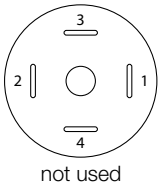
For best performance, use shielded cables. Mating cable assemblies sold separately. * Consult factory for further OEM options.



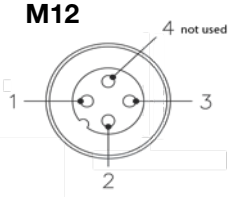


Electrical Connections

Signal	Function	Color	Pin	Electrical Connector
0-5V	Supply V +	Red	1	**DIN 4 pin (9.4)**
	Com	Black	2	
	Output	White	3	
4-20mA	Supply V	Red	1	
	Output	Black	2	
0-5V	Supply V +	Black	1	**M12**
	Output +	Red	2	
	Com	White	3	
4-20mA	Supply V +	Brown	1	
	Output	Blue	3	



not used



Features

- Vacuum ranges to 285 PSI or 3 to 10,000 PSI
- Various outputs
- Compact designs
- 316 stainless steel housing
- All stainless steel wetted parts
- Low cost
- Better 0.4% accuracy
- Custom outputs and ranges available
- OEM tested and approved
- Low power consumption
- High 125°C (257°F) operating temperature

Application

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

CE **RoHS**

Description

The NT41 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 NT41 sets a new price-performance standard for low cost, high volume commercial and industrial applications.

How to Order (Example: Part Number: **NT41 - 03 - B - 0500 - G - Q00 - 5**)

Model

NT41 - **03** - **B** - **0500** - **G** - **Q00** - **5** - **ET**

Media Connection (Pressure Port)

01 = 1/8" NPT Male
03 = 1/4" NPT Male
09 = 7/16-20"
10 = 9/16-18" UNF Male
13 = G1/4" Male
**

Output

B = 4-20mA
C = 0-5 vdc
D = 0-10 vdc
K = Ratio metric .5-4.5 vdc
**

Pressure Range (PSI)

V000
V015
V045
V085
V135
V185
V285

0015
0025
0050
0100
0250
0500
1000
3000
5000
**

Pressure Type

G = Gauge

Electrical Connection

D00 = 9.4 mini DIN
B00 = 3 pin Packard
W3P = 3 pin Deutsch
W4P = 4 pin Deutsch
Q00 = M12
**

Accuracy

5 = 0.4%
**

Optional Extended Temperature

ET = -40° C — 125° C

** Consult factory for further OEM options.

Specifications

Input

Supply Voltage	8-28 VDC 5 VDC (0.5-4.5V)
Pressure Range	VAC to 10,000 PSI
Proof Pressure	3 — 6,000 PSI = 3x 6,000 — 10k PSI = 2x
Burst Pressure	3 — 6,000 PSI = 4x 6,000 — 10k PSI = 3x
Fatigue Life	More than 4 million cycles

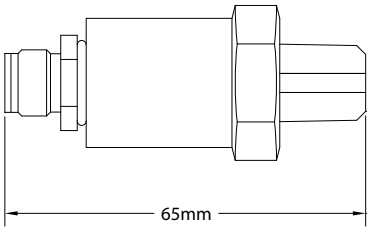
Performance

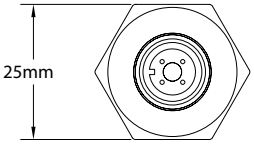
Accuracy	0.4%
Stability	0.2% full scale
Compensated Temperatures	-10 to 100°C (14 to 212°F)
Operating Temperatures	-20 to 125°C (-4 to 257°F)
Zero and Span Offset Tolerance	1.5%

Mechanical Configuration

Pressure Port	1/4 NPT (standard) *
Electrical Connection	M12*, 3 pin Deutsch, 4 pin Deutsch
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.

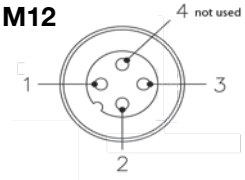




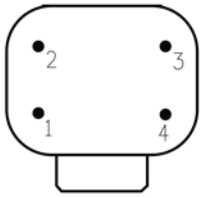
Electrical Connections

Signal	Function	Color	Pin
0-5V	Supply V +	Brown	1
	Output +	White	2
	Com	Blue	3
4-20mA	Supply V	Brown	1
	Output	Blue	3

M12



x4	Pin1	Pin2	Pin3	Pin4
mA	Output+	Supply+	N/C	N/C
V	COM	Supply+	N/C	Output+



Transducer View
Deutsch DT04-4P

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

CE **RoHS**

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

NT100 - **03** - **B** - **0500** - **G** - **D00** - **4**

Media Connection

01 = 1/8" NPT Male
03 = 1/4" NPT Male
09 = 7/16-20"
10 = 9/16-18" UNF Male
13 = G1/4" Male
**

Output

B = 4-20mA
C = 0-5 vdc
D = 0-10 vdc
K = Ratio metric .5-4.5 vdc
**

Pressure Range (PSI)

V000
V015
V045
V085

0015
0025
0050
0100
0250
0500
1000
3000
5000
**

Pressure Type

G = Gauge

Electrical Connection

D00 = 9.4 mini DIN
B00 = 3 pin Packard
Q00 = M12
**

Accuracy

4 = 1%
**

** Consult factory for further OEM options.

Specifications

Input

Supply Voltage	8-28 VDC 5 VDC (0.5-4.5V)
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

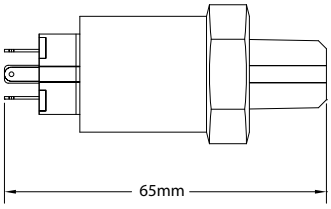
Performance

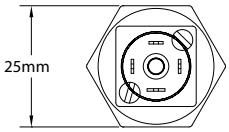
Accuracy	1%
Stability	0.2% full scale
Compensated Temperatures	-10 to 75°C (14 to 167°F)
Operating Temperatures	-20 to 80°C (-4 to 176°F)
Zero and Span Offset Tolerance	1.5%

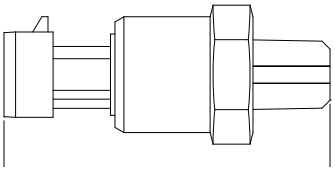
Mechanical Configuration

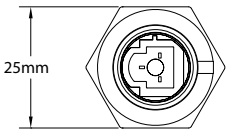
Pressure Port	1/4 NPT (standard) *
Electrical Connection	9.4 mini DIN, 3 pin Packard *
Sealing Rating	IP65 with standard 9.4 DIN cable
Wetted Parts	316 stainless steel

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



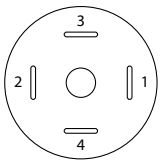


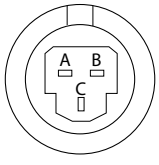




Electrical Connections

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 285 PSI or 3 to10,000 PSI
- Various outputs
- Compact designs
- 316 stainless steel housing
- All stainless steel wetted parts
- Low cost
- Industrial 1% accuracy
- Custom outputs and ranges available
- OEM tested and approved
- Low power consumption
- High 125°C (257°F) operating temperature

Application

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

CE **RoHS**

Description

The NT110 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 NT110 sets a new price-performance standard for low cost, high volume commercial and industrial applications.

How to Order (Example: Part Number: **NT110 - 03 - B - 0500 - G - D00 - 4**)

Model

NT110 - **03** - **B** - **0500** - **G** - **D00** - **4**

Media Connection (Pressure Port)

01 = 1/8" NPT Male
03 = 1/4" NPT Male
09 = 7/16-20"
10 = 9/16-18" UNF Male
13 = G1/4" Male
**

Output

B = 4-20mA
C = 0-5 vdc
D = 0-10 vdc
K = Ratio metric .5-4.5 vdc
**

Pressure Range (PSI)

V000
V015
V045
V085
V135
V185
V285

0015
0025
0050
0100
0250
0500
1000
3000
5000
**

Pressure Type

G = Gauge

Electrical Connection

D00 = 9.4 mini DIN
B00 = 3 pin Packard
W3P = 3 pin Deutsch
W4P = 4 pin Deutsch
Q00 = M12
**

Accuracy

4 = 1%
**

** Consult factory for further OEM options.

Specifications

Input

Supply Voltage	8-28 VDC 5 VDC (0.5-4.5V)
Pressure Range	VAC to 285 PSI or 3 to 10,000 PSI
Proof Pressure	3 — 6,000 PSI = 3x 6,000 — 10k PSI = 2x
Burst Pressure	3 — 6,000 PSI = 4x 6,000 — 10k PSI = 3x
Fatigue Life	More than 4 million cycles

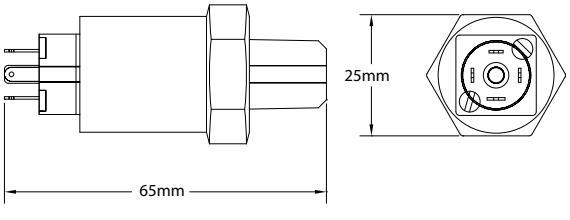
Performance

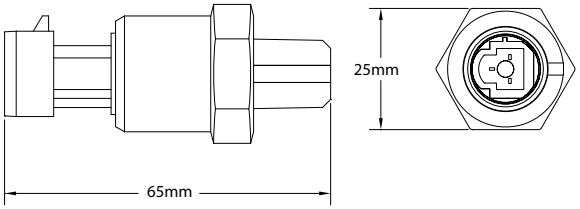
Accuracy	1% FS, BFSL
Stability	0.2% full scale
Compensated Temperatures	-10 to 100°C (14 to 212°F)
Operating Temperatures	-20 to 125°C (-4 to 257°F)
Zero and Span Offset Tolerance	1.5%
Current Consumption	Approx 3mA for voltage output, 22mA for current output (4-20mA)
Shock	50g, 11ms, 1/2 sign
Vibration	11g peak from 10 to 400 Hz

Mechanical Configuration

Pressure Port	1/4 NPT (standard) *
Electrical Connection	9.4 mini DIN, 3 pin Packard *
Ingress Rating	IP65 with standard 9.4 DIN cable
Housing	316 stainless steel
Diaphragm Material	316 SS <1500 psi, 17-4 SS >1500 PSI, wetted parts are SS, no internal O-Rings
Approvals	CE

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

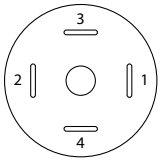


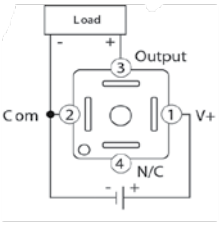


Electrical Connections

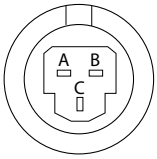
Signal	Function	Color	Pin	Electrical Connector
0-5V	Supply V +	Red	1	**DIN 4 pin (9.4)**
	Com	Black	2	
	Output	White	3	
	N/A	N/A	4	
4-20mA	Supply V	Red	1	
	Output	Black	2	
0-5V	Com	Black	A	**3 pin Packard**
	Supply +	Red	B	
	Output +	White	C	
4-20mA	Output	Black	A	
	Supply +	Red	B	

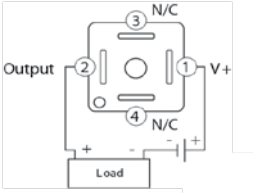
Black





0-5VDC Output





4-20mA Output

Features

- **Operating temperature:** -40° C to 90° C
- **Power supply:** 9 VDC to 28 VDC
- **Power supply current:** 35mA maximum
- **Relay output:** 250 VAC/220 VDC, 10A maximum
- **Relay type:** normally open or normally closed
- **Media connection:** 1/4" NPT standard (consult factory for other options)
- **Pressure ranges:** up to 10,000 PSI
- **Set point and hysteresis:** factory programmable
- **UL recognized component**

Description

The NES Electronic Pressure Switch Digital Technology brings a new level of performance to the pressure switch world. The NES features a solid stainless steel long life header/diaphragm for demanding applications where o-rings and creeper compatibility are a thing of the past. The NES houses the proprietary redundant bridge circuit for high-shock and high-vibration environments making it ideal for off road/mobile hydraulic applications where downtime is not an option. These industry firsts combined with the factory programmable set-point and hysteresis allows for low-cost custom solutions with next day shipments.

How to Order (Example: Part Number: **NES - 3A3 - 50R/015HRAT**)

NES - 3 A 3 - 50 R / 015 HR AT

Media Connection
- **3** 1/4 NPT
- **9** 7/16-20 UNF
- **13** G 1/4
- **

Circuit
- **A** NO
- **B** NC

Max Operating Pressure
- **3** 0 — 100 PSI
- **4** 0 — 250 PSI
- **5** 0 — 500 PSI
- **6** 0 — 1000 PSI
- **7** 0 — 2500 PSI
- **8** 0 — 5000 PSI
- **9** 0 — 10000 PSI
- **

Set Point Value
Must fall within stated pressure range

Set Point Direction
- **R** Rising
- **F** Falling

Hysteresis
- 015 = 15% (standard)
- 025 = 25%
- 035 = 35%
- **

Electrical Options
- **HR** DIN43650A Connector

Relay Max Current
- **AT** High current (> 250mA)
- **AU** Low current (≤ 250mA)

Pressure ranges and outputs listed above are quick ship versions.

Specifications

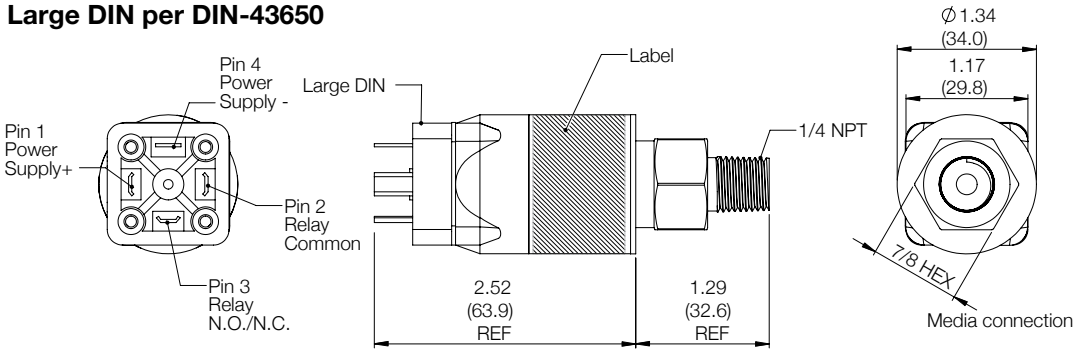
Performance	Performance @ 25° C (77° F)
Accuracy:	0.5% of max operating pressure (see ordering code)
Overange Protection:	2x Rated Pressure and optional 4x
Pressure Range:	see ordering chart - up to 10,000 PSI (689 bar)
Burst Pressure:	5x or 20,000 PSI, whichever is less
Relay Life:	>2 million @ 100mA at 240 VAC, Typ*
Update Time:	≤1msec
Relay Output:	250 VAC/220 VDC, up to 5A standard 10A Max
Relay Max Current:	Low Current ≤ 250mA, High Current > 250mA, 10A Max (increased current results in reduced lifecycle*)
Environmental Data	
Compensated Temperatures:	-40° to 90° C (-40° to 194° F)
Operating Temperatures:	-40° to 90° C (-40° to 194° F)
Storage:	-40° to 125° C (-40° to 250° F)
TEB:	1% of max operating pressure (see ordering code)
Long Term Drift:	0.2% FS/year (non-cumulative)
Shock:	2g, 11 ms, 1/2 sine
Vibration:	4g, peak, 30 to 400 Hz
EMI/FRI Protection:	Yes
Rating:	IP65
Approvals:	UL (approved connector, max ambient temperature at 55° C for L relay version; max ambient temperature at 20° C for H relay version)
Mechanical Configuration	
Media Connection:	1/4" NPT Male (standard)
Wetted Material:	17-4PH stainless steel
Electrical Connection:	Large DIN
Case:	(housing) 304 stainless steel/polycarbonate plastic
Electrical Data	
Excitation:	9-28 VDC, Typ
Output:	Relay output
Current Consumption:	35mA max
Reverse Polarity Protection:	Yes
Set Points:	No set points in vacuum range, 5 PSI Min set point with <100 PSI, 10% of configured pressure min set point >100 PSI range

Mating connectors and cable assemblies sold separately.

*Refer to relay datasheet for lifecycle information: TE connectivity, high current relay, product code PB114024, part number 9-1415029-1.

Electrical Connections

Large DIN per DIN-43650



Large DIN per DIN-43650

Pin 1: Power supply +: 9 VDC to 28 VDC
Pin 2: Relay common
Pin 3: Relay N.O./N.C.
Pin 4: Power supply -

Dimensions are in inches (mm) and for reference only.

Features

- **Compensated temperature:** -40˚ C to 85˚ C
- **Operating temperature:** -40˚ C to 100˚ C
- **Power supply:** 10.5 VDC to 28 VDC
- **Display:** 4-digit, bi-color display (red or green)
- **Outputs:** Digital : 250 mA max (PNP) or 200 mA max (NPN), or optional analog output: up to 10.5 VDC or up to 28 VDC (field selectable)
- **Media connection:** 1/4" NPT, 7/16-20 UNF, G 1/4
- **Pressure ranges:** Wide variety up to 10K psig

Description

What makes the NESD model stand apart is the unique LED display - which allows for 360° scrolling, or you can lock the display in one location. It also features field-programmable set points and hysteresis.

The NESD model incorporates redundant sensing technology, allowing for notification that the sensor needs to be replaced before it might fail (maintenance mode), eliminating operational downtime.

The NESD model pressure switch/transducer comes standard with one digital output (NPN or PNP), optional analog output, operates from 10.5 to 28 VDC, and is IP67 certified.

How to Order (Example: Part Number: **NESD - 3D1 - 0050/ES**)

NESD - 3 D1 - 0050 / ES

Media Connection

3	1/4" NPT Male
9	7/16-20 UNF
13	G 1/4
**	

Version

D1	1 switch output with display
D2	2 switch outputs with display
D3	1 analog output, 1 switch output with display

Pressure Range

0015	**1000**
0025	**2000**
0050	**3000**
0100	**4000**
0250	**5000**
0500	**6000**
0750	**010K**
**	

Electrical Options

ES	M12 (5-pin)

** Consult factory for further OEM options. Pressure ranges and outputs listed above are quick ship versions.

Specifications

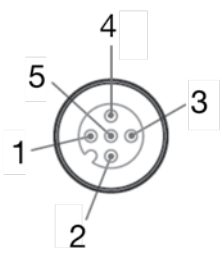
Performance	Performance @ 25° C (77° F)
Accuracy:	0.5% of max operating pressure
Overange Protection:	2x Rated Pressure or optional 4x and 10x
Pressure Range:	see ordering chart - up to 10,000 PSI (689 bar)
Burst Pressure:	5x or 20,000 PSI, whichever is less
Pressure Cycles:	>100 million
Update Time:	≤1msec
Environmental Data	
Compensated Temperatures:	-40° to 85° C (-40° to 185° F)
Operating Temperatures:	-40° to 100° C (-40° to 212° F)
Storage:	-40° to 125° C (-40° to 257° F)
TEB:	1% BFSL (includes: Non-linearity, Hysteresis and Non-repeatability)
Long Term Drift:	0.2% FS/year (non-cumulative)
Shock:	50g, 11 ms, 1/2 sine
Vibration:	10g, peak, 20 to 2400 Hz
EMI/FRI Protection:	Yes
Rating:	Up to IP67
Mechanical Configuration	
Pressure Connections:	1/4" NPT Male, 7/16-20 UNF, G1/4 Male
Wetted Material:	17-4PH stainless steel (for other materials consult factory)
Electrical Connection:	M12 (5-pin)
Case:	(housing) 304 stainless steel and high-impact polycarbonate (display)
Electrical Data	
Power Supply:	10.5-28VDC
Output:	10.5 VDC to 28 VDC at 250 mA max (PNP) or 200 mA max (NPN) (digital)
Field Programmable:	up to 10 VDC or up to 20 mA (analog)
Output Impedance:	<100 Ohms, Nominal
Current Consumption:	30 mA at 24V/voltage output 40 mA at 12V/voltage output 50 mA at 24V/voltage output 60 mA at 12V/voltage output
Output Noise:	<2mV RMS
Reverse Polarity Protection:	Yes

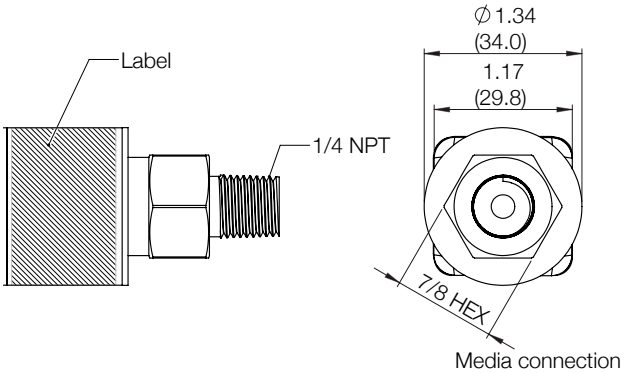
For best performance use shielded cables.

Mating connectors and cable assemblies sold separately.

Electrical Connections

5-Pin M12





5-Pin M12

Pin 1: Power supply: 10.5 VDC to 28 VDC
Pin 2: Digital output #2 (optional) or analog output (optional)
Pin 3: Power supply common
Pin 4: Digital output #1
Pin 5: Maintenance mode output

Dimensions are in inches (mm) and for reference only.

Features

- Connects to smartphones and tablets with BLE (Bluetooth® Low Energy)
- Certified Bluetooth® wireless technology
- Pressure ranges from vacuum to 10,000 psi
- Long battery life (proprietary technology)
- 1% standard accuracy with optional 0.25% ultra high accuracy
- Stainless steel and high-impact polycarbonate construction
- Alarm set points
- Secure field programmable naming
- Patent-pending design
- Schrader, NPT, SAE and G ¼ pressure connection

Description

Another industry first! The first Bluetooth®-certified wireless pressure transducer with long battery life and patent-pending design makes the NTBT a perfect fit for many applications for Industrial and Home Automation. Download the free app, install the transducer and wirelessly connect — no confusing wiring to figure out.

Choose the NTBT for virtually anywhere you'd like to monitor pressure without the use of wires — from pneumatic systems, mobile hydraulics, residential and commercial applications to water, hydraulic, irrigation, pools, medical and sprinkler systems. Because it is built on Nason proprietary technology, the NTBT ensures high quality and high accuracy with Nason's quick deliveries and low costs.

How to Order (Example: Part Number: **NTBT - 03 - 0015 - 2**)

NTBT - **03** - **0015** - **2**

Media Connection

- **3** 1/4 NPT Male
- **9** 7/16-20 UNF Male
- **13** G 1/4 Male

Pressure Range

- 0050
- 0100
- 0250
- 0500
- 0650
- 1000
- 3000
- 5000
- 010K

Accuracy

- **2** = 0.25%
- **4** = 1.00%

Specifications

Performance	Performance @ 25° C (77° F)
Pressure Accuracy:	0.25% or 0.2 psi, whichever is greater, 1% BFSL (includes non-linearity, hysteresis, non-repeatability)
Overange Protection:	2x Rated Pressure
Pressure Range:	see ordering chart - up to 10,000 psi (690 bar)
Burst Pressure:	5x or 20,000 psi, whichever is less
Pressure Cycles:	>100 million
Update Time:	Bluetooth® wireless technology (1sec)
Environmental Data	
Compensated Temperatures:	-10° to 85° C (14 to 185° F)
Operating Temperatures:	-40° to 85° C (-40° to 185° F)
Storage:	-40° to 125° C (-40° to 257° F) without battery
TEB:	3% BFSL (includes: Non-linearity, Hysteresis and Non-repeatability)
Long Term Drift:	0.2% FS/year (non-cumulative)
Shock:	50g, 11 ms, 1/2 sine
Vibration:	10g, peak, 20 to 2400 Hz
EMI/FRI Protection:	Yes
Ingress Rating:	IP-67
Mechanical Configuration	
Pressure Connection:	1/4 NPT Male, 7/16-20 UNF Male, G1/4 Male
Wetted Material:	17-4PH stainless steel (for other materials consult factory)
Case:	(housing) 304 stainless steel and high-impact polycarbonate l
Electrical Data	
Power Supply:	3.6V Proprietary replacement battery. Battery life: 24 months, typical. Battery life is affected by high and low temperatures.
Battery Removal:	If the battery pack is removed, you must wait 90 seconds to reinstall or unit may lock up.
Connection Distance:	250 feet (line of sight)
Compatible Devices:	Software: Android - (Version 4.3 or later) iOS - (Current version and previous one) Hardware: Android - Device supports Bluetooth Smart (Version 4.0 and later) iPad Gen 3 - (released March 16, 2012) iPad Gen 4 - (released November 2, 2012) iPad Mini Gen 1 - (released November 2, 2012) iPad Mini Gen 2 - (released November 12, 2013) iPad Air - (released November 1, 2013) iPhone 5 - (released September 21, 2012) iPhone 5C, 5S - (released September 20, 2013) iPhone 6, 6 Plus - (released September 19, 2014) iPhone 6S, 6S plus - (released Sept 25 2015) iPhone 7, 7 plus - (released Sept 16, 2016) iPhone 8, 8 plus iPhone X, Xs, Xs Max

Features

- Connects to smartphones and tablets with BLE (Bluetooth® Low Energy)
- Certified Bluetooth® wireless technology
- Pressure ranges from vacuum to 10,000 psi
- Long battery life (proprietary technology)
- 1% standard accuracy with optional 0.25% ultra high accuracy
- Stainless steel and high-impact polycarbonate construction
- Alarm set points
- Secure field programmable naming
- Patent-pending design
- Number of individual logs: from 15,872 to 32,768
- Email logged files from the **FREE** app

Description

Another Industry First! The first Bluetooth® certified wireless pressure transducer with long battery life and patent- pending design makes the NTBT-DL a perfect fit for many applications for Industrial and Home Automation. The NTBT-DL includes data logging capability to save pressure and temperature data that can be emailed and opened in an excel spread sheet. Download the free app, install the transducer and wirelessly connect - no confusing wiring to figure out.

From HVAC in marine, campers, motorhomes, residential and commercial applications to water, hydraulic, irrigation, pools, medical and sprinkler systems or anywhere you need to monitor pressure without the need of wires.

Because it is built on Nason proprietary technology, the NTBT-DL ensures high quality and high accuracy with quick deliveries, and low costs.

How to Order (Example: Part Number: **NTBT-DL - 03 - 0500 - 2 - T24**)

NTBT-DL - **03** - **0500 (psi)** - **2** - **T24**

Pressure Connection
03 = 1/4" NPT Male
09 = 7/16- 20 UNF Male
13 = G1/4 Male
42 = 7/16-20 UNF Female w/ 45° flare & valve depressor (Schrader)
**

Pressure Range
0050
0100
0250
0500
0650
1000
3000
5000
010K
**

Accuracy
2 = 0.25%
4 = 1.00%

M5 / Temperature Probe
(BLANK) = No M5 connector (not temp probe capable)
T24 = 24" cable with M5 mating connector and external temperature probe
M5 = M5 connector alone (temp probe capable)
**

** - Consult factury for further OEM options.
Pressure ranges listed above are quick ship versions.
All straight-thread o-rings are Viton. It is customer's responsibility to determine compatibilty.

Specifications

Performance	Performance @ 25° C (77° F)
Pressure Accuracy:	0.25% or 0.2 psi, whichever is greater, 1% BFSL (includes non-linearity, hysteresis, non-repeatability)
Temperature Accuracy:	±1° C
Overange Protection:	2x Rated Pressure
Pressure Range:	see ordering chart - up to 10,000 psi (690 bar)
Burst Pressure:	5x or 20,000 psi, whichever is less
Pressure Cycles:	>100 million
Update Time:	Bluetooth® wireless technology (1sec)
Environmental Data	
Compensated Temperatures:	-10° to 85° C (14 to 185° F)
Operating Temperatures:	-40° to 85° C (-40° to 185° F)
Storage:	-40° to 125° C (-40° to 257° F) without battery
TEB:	3% BFSL (includes: Non-linearity, Hysteresis and Non-repeatability)
Long Term Drift:	0.2% FS/year (non-cumulative)
Shock:	50g, 11 ms, 1/2 sine
Vibration:	10g, peak, 20 to 2400 Hz
EMI/FRI Protection:	Yes
Ingress Rating:	IP-67
Approvals:	CE
Mechanical Configuration	
Pressure Connection:	1/4 NPT Male, 7/16-20 UNF Male, G1/4 Male, 7/16-20 UNF Female w/45° flare & valve depressor
Wetted Material:	17-4PH stainless steel (for other materials consult factory)
Case:	(housing) 304 stainless steel and high-impact polycarbonate l
Electrical Data	
Power Supply:	3.6V Proprietary replacement battery. Battery life: 24 months, typical. Battery life is affected by high and low temperatures.
Battery Removal:	If the battery pack is removed, you must wait 90 seconds to reinstall or unit may lock up.
Connection Distance:	250 feet (line of sight)
Compatible Devices:	Software: Android - (Version 4.3 or later) iOS - (Current version and previous one) Hardware: Android - Device supports Bluetooth Smart (Version 4.0 and later) iPad Gen 3 - (released March 16, 2012) iPad Gen 4 - (released November 2, 2012) iPad Mini Gen 1 - (released November 2, 2012) iPad Mini Gen 2 - (released November 12, 2013) iPad Air - (released November 1, 2013) iPhone 5 - (released September 21, 2012) iPhone 5C, 5S - (released September 20, 2013) iPhone 6, 6 Plus - (released September 19, 2014) iPhone 6S, 6S plus - (released Sept 25 2015) iPhone 7, 7 plus - (released Sept 16, 2016) iPhone 8, 8 plus iPhone X, Xs, Xs Max

Data Logging

Measurement Intervals: From 50ms up to 1hr
Fill Until Full: 50ms, 500ms, 1 sec, 5 sec, 10 sec, 30 sec, 1 min, 5 min, 10 min, 20 min, 30 min, 1 hr, 1 day

FIFO: 500ms, 1 sec, 5 sec, 10 sec, 30 sec, 1 min, 5 min, 10 min, 20 min, 30 min, 1 hr, 1 day

Recording Temperature: **External temperature probe required to record temperature data**

Storage Modes: Fill Until Full: When memory is full, recording will stop

FIFO (First in/First out): When memory is full, recording will start over from the beginning replacing the first recordings with the latest moving forward

Features

- Low cost
- Excellent long-term stability
- Wide temperature measurement range
- Industry standard analog outputs
- 316 stainless steel wetted parts
- 1% accuracy
- OEM tested and approved
- Voltage and current outputs

Application

- Hydraulic/Mobile hydraulic
- Automated systems
- Energy and water management
- Anywhere accurate temperature measurement of fluids is required

Description

The NTS series temperature transducer is built using dependable thermistor-based sensing technology with industry standard voltage or current outputs.

Perfect for a wide range of applications, this solution is ideal for communicating accurate temperature measurements to panel mount displays, PLC's or data acquisition systems.

How to Order (Example: Part Number: **NTS - J - 03 - B - 0200 - Q00**)

Model

NTS - **J** - **03** - **B** - **0200** - **Q00**

Probe Length

D = 10mm
E = 20mm
H = 40mm
J = 50mm
K = 100mm
L = 150mm
**

Pressure Port

03 = 1/4" NPT Male
**

Output

B = 4-20mA
C = 0-5V (3 wire)
D = 0-10V
K = .5-4.5V
**

Temperature Range

-40-392° F

Electrical Connection

Q00 = 4-pin M12
D00 = 9.4 MINI DIN
B00 = 3-pin PACKARD
W3P = 3-pin DEUTSCH
W4P = 4-pin DEUTSCH
**

** Consult factory for further OEM options.

Specifications

Input

Supply Voltage / (Output):	8-28 VDC (0-5V, 4-20mA)
	5 VDC (0.5-4.5V)
	12-36 VDC (0-10V)

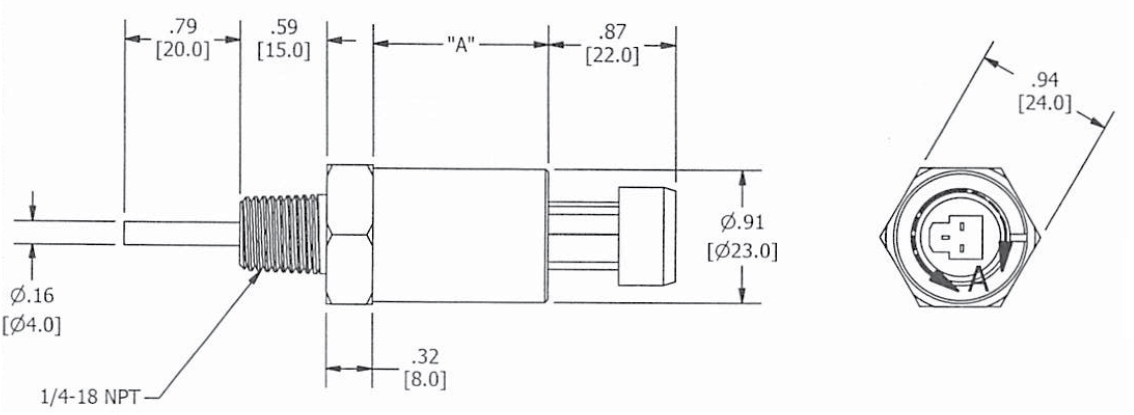
Performance

Accuracy:	1% FS
Stability:	0.2% FS
Measuring Temperature Range:	-40 to 200° C (-40 to 392° F)
Operating Temperature Range:	-40 to 85° C (-40 to 185° F)
Max Continuous Temperature:	250° F
Current Consumption:	23mA for 4-20mA
	8mA for 0-5V
	11mA for 0-10V
Max Pressure for 6 mm Diameter Probe:	300 bar
Max Pressure for 8 mm Diameter Probe:	500 bar

Mechanical Configuration

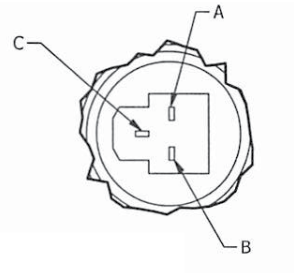
Probe Lengths:	10mm, 20mm, 40mm, 50mm, 100mm, 150mm
Process Connection:	¼ NPT (standard) *
Electrical Connection:	4-pin M12 *
Ingress Rating:	IP67 with standard M12 cable
Housing:	304 stainless steel
Wetted Parts:	316SS

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



Electrical Connections

Output	Signal	Function	Pin
K	0.5-4.5V	Com	A
C	0-5V	Supply V +	B
D	0-10V	Output +	C
B	4-20mA	Output	A
		Supply V +	B



NOTES: 1. "A" dimension = 1.20 [30.5] when temp rating is less than 200°F.
2. "A" dimension = 1.70 [43.2] when temp rating is greater than 200°F.

Features

- Vac ranges to +285 psi or Pressure ranges 0 to 3 psi up to 10,000 psi
- Various Outputs
- Compact Design
- 316 Stainless steel housing
- All stainless steel wetted parts
- High 125 °C (257 °F) operating temperature
- Low Cost
- Better 0.4% Accuracy
- Custom Outputs and Ranges Available
- OEM Tested and Approved
- Low power consumption

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 NTPT Series Dual Output Temperature and Pressure Transducer utilizes piezoresistance technology in an all stainless steel body. It is compact in size, has long term stability, ease of installation and is very economical as well as reliable.

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

How to Order (Example: Part Number: **NTPT - 09 - B / B 0050 - G - Q00 - 5**)

Model

NTPT - **09** - **B** / **B** **0050** - **G** - **Q00** - **5**

Media Connection

01 1/8" NPT Male
03 1/4" NPT Male
09 7/16-20 (ORING)
13 1/4-19" BSPP
**

Pressure Output

B = 4-20mA (3 wire)
C = 0-5V (4 wire)
D = 0-10V (4 wire)
K = 0.5-4.5V (4 wire)
**

Temperature Output

B = 4-20mA (3 wire)
C = 0-5V (4 wire)
D = 0-10V (4 wire)
K = 0.5-4.5V (4 wire)
**

Pressure Range (PSI)

V000	**0015**
V015	**0025**
V045	**0050**
V085	**0100**
V135	**0250**
V185	**0500**
V285	**1000**
	3000
	5000
	**

Pressure Type

G = Gauge
**

Electrical Connection

Q00 = 4-pin M12
W3P = 3-pin DEUTSCH
W4P = 4-pin DEUTSCH
B00 = 3-pin PACKARD
D00 = 9.4 MINI DIN
**

Accuracy

5 = 0.4%

** Consult factory for further OEM options.

Specifications

Input

Supply Voltage / (Output):	3-5.5VDC (OWI)	12-32VDC (0-10VDC,1-6VDC)
	9-32VDC (4-20mA)	5VDC (0.5-4.5VDC ratiometric)
	7-32VDC (0-5VDC)	7-32VDC (0.5-4.5VDC NONratiometric)
Pressure Range:	Vac to 285 psi or pressure 0-3 psi, up to 10,000 psi	
Proof Pressure:	3-6000 psi = 3x • 6000-10K psi = 2x	
Burst Pressure:	3-6000 psi = 4x • 6000-10K psi = 3x	
Fatigue Life:	More than 4 million cycles	
Approvals:	CE	

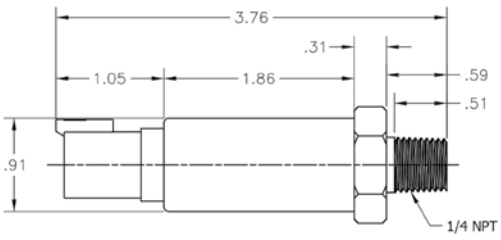
Performance @ 25°C (77 °F)

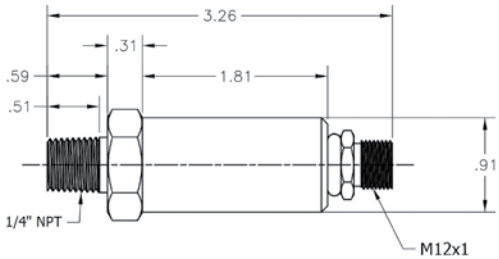
Accuracy:	0.4% FS, BFSL (includes non-linearity, hysteresis and non-repeatability)
Stability:	0.2% FS
Thermal Error:	1.0% FS
Compensated Temperatures:	Pressure (-40) to 125° C
Temperature measurement range:	Temperature (-40) to 120° C
Operating Temperatures:	(-40) to 125° C
Current Consumption:	23mA (4-20mA), 5mA(OWI), 8mA(0-5V,1-6V), 11mA(0-10V)
Temp probe max pressure:	Equal to the pressure sensor (without extended temp probe), or 300bar (with extended 6mm probe)
Zero and Span Offset Tolerance:	1.5%
Shock:	50g, 11ms, 1/2 sign
Vibration:	11g peak from 10 to 400 Hz
Reverse Polarity Protection:	Yes

Mechanical Configuration

Pressure Port:	¼ NPT (standard) *
Electrical Connection:	M12, 3 & 4 pin Deutsch (DT04-3P/4P),9.4 DIN, 3pin Packard
Ingress Rating:	IP67
Housing:	316 stainless steel
Diaphragm Material:	316L SS <1500 psi, 17-4 SS 1500 psi and above, wetted parts are SS, no internal o-rings

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

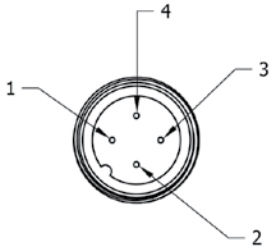




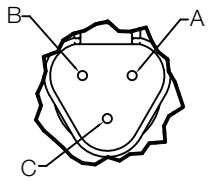
Electrical Connections

Signal	Function	Pin
0-5V	Supply V +	1
	Output 1	2
	Com	3
	Output 2	4
4-20mA	Supply V +	1
	Output 1	2
	Output 2	3
	N/C	4

M12

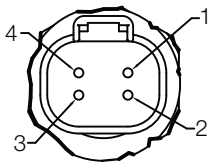


W3P Connector



ELECTRICAL CONNECTIONS		
SIGNAL	FUNCTION	PIN
0-5V	SUPPLY V	A
	OUTPUT +	B
	COM	C
	SUPPLY V	A
4-20mA	N/C	B
	OUTPUT +	C

W4P Connector

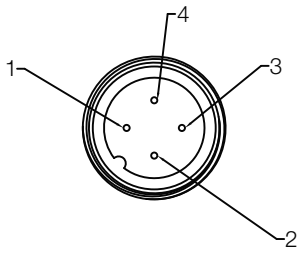


ELECTRICAL CONNECTIONS		
SIGNAL	FUNCTION	PIN
0-5V	COM	1
	SUPPLY V+	2
	N/C	3
	OUPUT +	4
4-20mA	OUTPUT +	1
	SUPPLY +	2
	N/C	3
	N/C	4

3 PIN Packard Connector for B00 Option

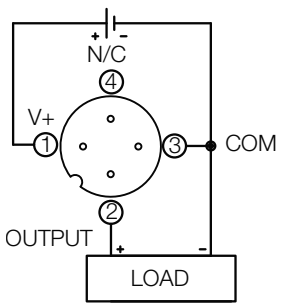
ELECTRICAL CONNECTIONS		
SIGNAL	FUNCTION	PIN
0-5V	COM	A
	SUPPLY +	B
	OUTPUT +	C
	OUTPUT	A
4-20mA	SUPPLY +	B

M12 4 PIN Connector for Q00 Option

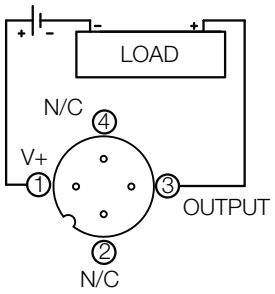


ELECTRICAL CONNECTIONS		
SIGNAL	FUNCTION	PIN
0-5V	SUPPLY V+	1
	OUPUT	2
	COM	3
	N/C	4
4-20mA	SUPPLY V+	1
	N/C	2
	OUPUT	3
	N/C	4

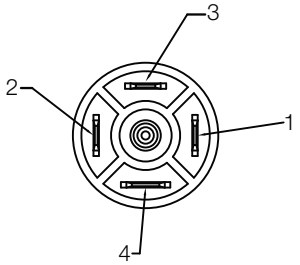
0-5VDC OUTPUT



4-20mA OUTPUT



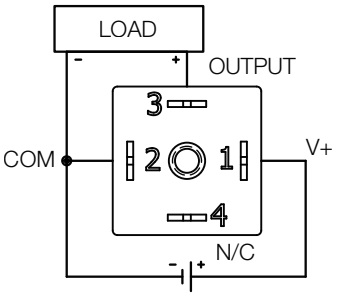
9.4 DIN Connector for D00 Option



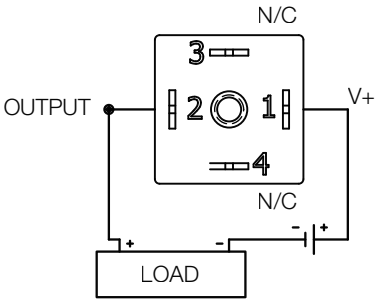
ELECTRICAL CONNECTIONS			
SIGNAL	FUNCTION	COLOR	PIN
0-5V	+POWER SUPPLY	RED	1
	-COMMON	BLACK	2
	OUTPUT	WHITE	3
	*DIGTAL OUTPUT	GREEN	4
4-20mA	+POWER SUPPLY	RED	1
	OUTPUT	BLACK	2
	N/C	N/C	3
	N/C	N/C	4

*(OPTIONAL)

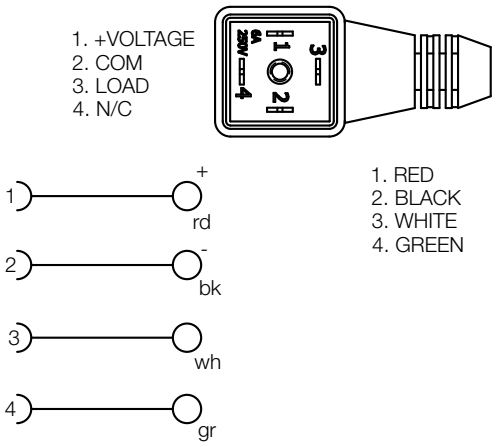
0-5VDC OUTPUT



4-20mA OUTPUT



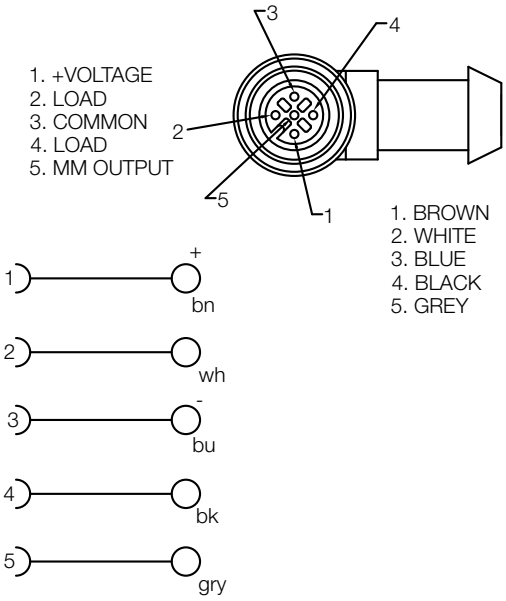
9.4mm DIN Cable Assembly



PART #	* = LENGTH
NTC91	1 METER
NTC93	3 METERS

CABLE: PUR - 4 X 22AWG SHIELDED

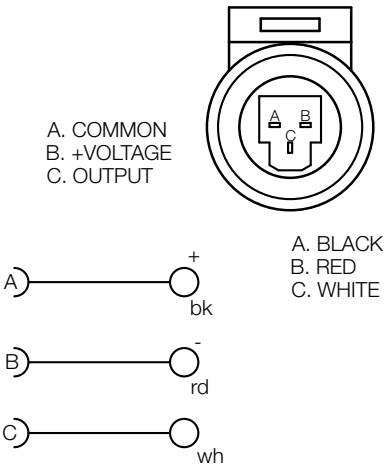
M12, 5 PIN IP67K Cable Assembly



PART #	* = LENGTH
NTCM1251	1 METER
NTCM1253	3 METERS

CABLE: PVC - 5 X 22AWG SHIELDED

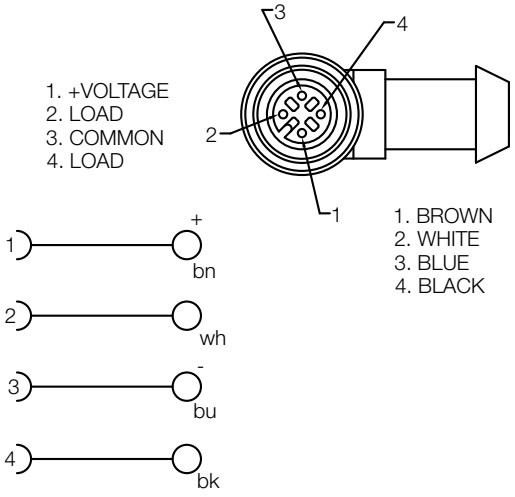
3 PIN Packard Cable Assembly



PART #	* = LENGTH
NTCPAC1	1 METER
NTCPAC3	3 METERS

CABLE: PVC - 4 X 22AWG

M12, 4 PIN IP69K Cable Assembly



PART #	* = LENGTH
NTCM121	1 METER
NTCM123	3 METER

CABLE: PUR - 4 X 22AWG SHIELDED

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		•	
Chiorobenzene			•
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			•
Tolulene			•
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.

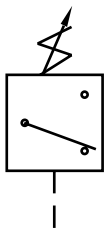
Application
Nason switches are used successfully in a great variety of pneumatic and hydraulic applications. Military vehicles and equipment, aviation, marine, machine tools, farm and construction equipment, process equipment, medical equipment, and industrial machinery are typical applications.

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.

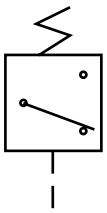
Installation Torques
Pressure Switch - 10 ft lbs
Temperature Switch - 14-15 ft lbs.

Circuitry

Adjustable Pressure Switch
Component Symbol



Fixed Pressure Switch
Component Symbol



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