

DDS-Series Differential Pressure Switch Diaphragm Sensing Element



250 psi DDS-Series Differential Pressure Switch



1500 psi DDS-Series Differential Pressure Switch

The DDS-Series differential pressure switch is designed to sense low differential pressures between high pressure sources. The high pressure seals are opposed stainless steel bellows assemblies, while the differential pressure is sensed by a diaphragm clamped between these bellows assemblies. The diaphragm has a large area to accurately sense low differential pressure, and during an over-pressure the diaphragm is fully supported.

The design is symmetric such that both the high or low pressure sides of the element can withstand the maximum pressure with the opposite side at atmospheric pressure. The rugged cast aluminum housing incorporates a "frictionless" switching mechanism, and can be specified as watertight or explosion proof. The housing is large enough to accommodate up to one full size SPDT or one DPDT electric switches.

The standard differential pressure-sensing element is constructed of a strong aluminum alloy using a Buna N elastomer diaphragm. Other diaphragm and wetted area materials are available.

PRODUCT SPECIFICATIONS

Ranges:	0-1.5 IWD TO 0-150 IWD
Static Pressure	
Ranges:	50 psi, 250 psi or 1500 psi
Rugged:	NEMA 4X & 12 housing std. Class I, Div. I, Gr. C & D available SPDT or DPDT contacts
Maximum Ambient Temperature:	180°F
Minimum Ambient Temperature:	-20°F
Pressure Connection:	1/4 NPT Female
Electrical Connection:	3/4 NPT Female
Housing:	Cast aluminum
Dead band:	Fixed
Sensitivity:	1% of range
Drift:	<1% of range (100,000 operations)
Weight:	Approximately 6 lbs.
Contact Ratings:	15A-125, 250, 480 VAC (general purpose other micro switches available)
Contact Listings:	UL Listed
Port Material:	Aluminum or stainless steel
Diaphragm Material:	Buna N, Viton or Teflon
Setpoint Adjustment:	Screw type, field adjustable

Maximum Deadband in IWD per Micro Switch Type for 50 psi Static Range

Range (IWD)	1K	1G	1M	1J	2K	2G	2M	2J
0-1.5	0.4	0.7	0.7	4.2	0.8	1.4	1.4	8.4
0-3.0	0.6	1.2	1.2	7.2	1.2	2.4	2.4	14.4
0-6.0	0.7	1.4	1.4	8.4	1.4	2.8	2.8	16.8

Maximum Deadband in IWD per Micro Switch Type for 250 psi Static Range

Range (IWD)	1K	1G	1M	1J	2K	2G	2M	2J
0-15	0.4	0.7	0.7	4.2	0.8	1.4	1.4	8.4
0-30	0.6	1.2	1.2	7.2	1.2	2.4	2.4	14.4
0-60	0.7	1.4	1.4	8.4	1.4	2.8	2.8	16.8
0-100	0.8	1.6	1.6	9.6	1.6	3.2	.2	19.2
0-150	1.2	2.5	2.5	15.0	2.4	5.0	5.0	30.0

Maximum Deadband in IWD per Micro Switch Type for 1500 psi Static Range

Range (IWD)	1K	1G	1M	1J	2K	2G	2M	2J
0-6	1.1	2.2	2.2	6.6	2.2	4.4	4.4	13.2
0-15	1.2	2.3	2.3	6.9	2.4	4.6	4.6	13.8
0-30	1.2	2.3	2.3	6.9	2.4	4.6	4.6	13.8
0-60	1.3	2.5	2.5	7.5	2.6	5.0	5.0	15.0
0-100	1.5	2.9	2.9	8.7	3.0	5.8	5.8	17.4
0-150	1.7	3.4	3.4	10.2	3.4	6.8	6.8	20.4

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HOW TO ORDER:

Part Number: **DDS N4 1G S B A 25 L 100# - 60IWD 15 R - XC4**

1. Function: _____

2. Enclosure: _____

3. Micro Switch: _____

4. Electrical Connection: _____

5. Actuator Seal: _____

6. Lower Housing Material: _____

7. Pressure Connection: _____

8. Static Pressure Range _____

9. Static Pressure Setpoint _____

10. Pressure Range: _____

11. Setpoint: _____

12. Setpoint Direction: _____

13. Options _____

1&2 Function/Enclosure

Description	Order Code
Single setpoint / fixed deadband Watertight NEMA 4X housing	DDSN4
Single setpoint / fixed deadband Explosion Proof, Class 1, Groups C & D, Class 2 Groups E, F & G	DDSN7

3 Micro Switch

Description	Order Code
General Purpose, SPDT – 15A @ 125/250/480 VAC	1G
General Purpose, DPDT – 15A @ 125/250/480 VAC	2G
Narrow Deadband, SPDT - 15A @ 125/250/480 VAC	1K
Narrow Deadband, DPDT - 15A @ 125/250/480 VAC	2K
Gold Contact, SPDT – 1 A @ 125 VAC	1M
Gold Contact, DPDT – 1 A @ 125 VAC	2M
Hermetically Sealed, SPDT – 1A @ 125 VAC, 1A @ 28 VDC resistive, 0.5A @ 28 VDC Inductive	1J
Hermetically Sealed, DPDT – 1A @ 125 VAC, 1A @ 28 VDC resistive, 0.5A @ 28 VDC Inductive	2J

4 Electrical Connection –

All models have a ¼ NPT Female conduit connection

Description	Order Code
Screw Terminals on Micro Switch	S

5 Actuator Seal

Description	Order Code
Buna N	B
Viton (not available with 1500 psi Static Range H)	V
Teflon (not available with 1500 psi Static Range H)	T

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6 Lower Housing Material	
Description	Order Code
Aluminum housing and process connections	A
316 SS housing and process connections	S

7 Pressure Connection	
Description	Order Code
¼ NPT Female	25

8 Static Pressure Range	
Description	Order Code
50 psi maximum static pressure 0-1.5 through 0-0.6 IWD	L
250 psi maximum static pressure 0-15 through 0-150 IWD	L
1500 psi maximum static pressure 0-6 through 0-150 IWD	H

9 Static Pressure Setpoint	
Description	Order Code
Setpoint Static Pressure (5 characters maximum) Units allowed #(psi), BR (Bar), KG (kg/cm ²), MP (MPa)	_____
No static setpoint required	NSR

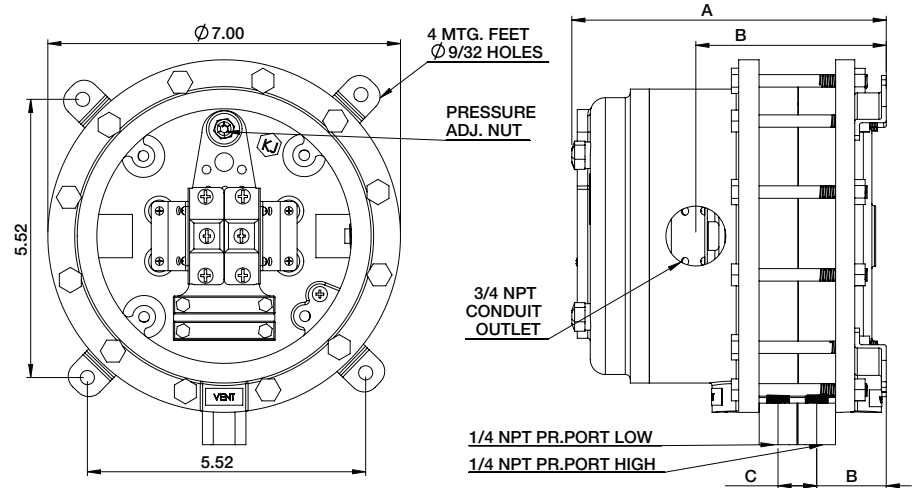
10 Range			
Inches of Water Differential	mBar Differential	mmH ₂ O Differential	kPa Differential
1.5IWD	3.7MBD	38MWD	0.37PD
3IWD	7.5MBD	76MWD	0.75PD
6IWD	15MBD	150MWD	1.5KPD
15IWD	35MBD	350MWD	3.5KPD
30IWD	75MBD	750MWD	7.5KPD
60IWD	150MBD	1500MWD	15KPD
100IWD	250MBD	2500MWD	25KPD
150IWD	350MBD	3500MWD	35KPD

11 & 12 Setpoint/Direction	
Description	Order Code
Factory-set Rising (Increasing) setpoint (5 characters maximum)	_____R
Factory-set Decreasing setpoint (5 characters maximum)	_____D
Not factory set -	NSR

13 Options	
Description	Order Code
Stainless Steel tag wired to case	XNH
Dual ¼ NPT Female conduit connections	XJK
Certified Calibration Report	XC4
Paper Tag	XNN

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General Dimensions



NEMA Rating	Static Pressure	A	B	C	D
4	250 psi	5.97	3.82	0.75	1.43
7	250 psi	6.19	3.82	0.75	1.43
4	1500 psi	6.57	4.41	1.13	1.53
7	1500 psi	6.78	4.41	1.13	1.53