Specification sheet

Deltapi N Series
Pneumatic Transmitters
Model NDC
Absolute pressure transmitter

GENERAL CHARACTERISTICS

The blind type absolute pressure transmitter, mod. NDC, is used to measure an absolute pressure and convert it into a proportional pneumatic signal.
The instrument works on the force-balance principle and consists of two main units:

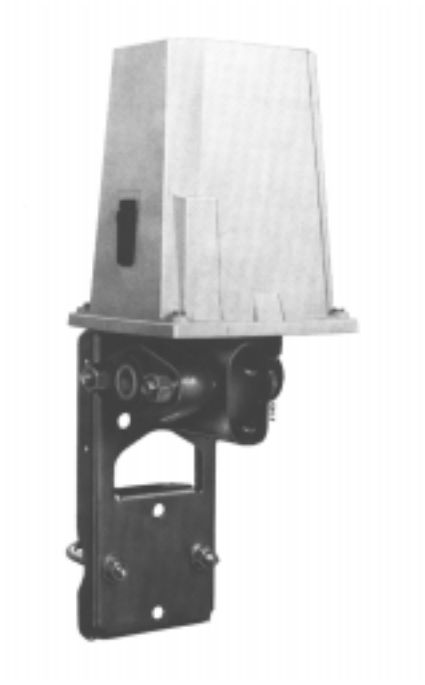
the measuring unit comprises a main body which houses a bellows unit, clamped in the main body forging by means of a flange. The bellows unit incorporates an evacuated reference chamber and releves the absolute pressure applied to the positive connection port. The bellows unit can withstand the maximum overrange without damage.

the transmission unit converts the differential force applied to the measuring element into a proportional output pneumatic signal.
The output pressure, generated by a flapper nozzle relay, is fed to a feedback bellows with a rising pressure until the bellows force balances that of the measuring element.

Span value continuously adjustable by an internal micrometric screw.

Zero value adjustable by an external screw.

Mounting in a vertical position on 2in diameter pipe by a special bracket.



OPTIONAL EXTRA FEATURES

A zero suppression device allows to set as a zero of the transmitter a measured variable value different from the absolute zero.
The sum of the zero suppression value (S) plus the calibrated span cannot exceed the upper range limit (M) suitable by the bellows capsule : S + span ≤ M (see table).

Air filter regulator can be directly mounted on the transmitter, with or without pressure gauge, and connected with piping and fittings either in stainless steel or copper.
Special versions of air filter regulator and gauges, in stainless steel, are available on request.

Oxygen measurements a special degreasing and final test operations can be required on the oxygen measuring transmitter.

SPECIFICATIONS

The data were obtained from laboratory tests on standard instruments with:
carbon steel or AISI 316L body and flange; AISI 316L bellows unit; gasket: Viton;
calibration span: 800 kPa - 8 bar

SPAN LIMITS	RANGE LIMITS (absolute) lower and upper (M)	MAXIMUM ZERO SUPPRESSION (S)	OVERRANGE LIMIT
170 and 1700 kPa 1.7 and 17 bar	0 and 2500 kPa 0 and 25 bar	2330 kPa 23.3 bar	3.5 MPa 35 bar

Air supply
nom. 140 kPa (1.4 bar, 20 psi); min. 125 kPa (1.25 bar, 18 psi); max. 175 kPa (1.75 bar, 25 psi)

Output signal
20 to 100 kPa/0.2 to 1 bar, 3 to 15 psi or 0.2 to 1 kg/cm^2

Static air consumption
350 Nl/h

Maximum output flow
- with rising output pressure: 30 Nl/min.
- with falling output pressure: 40 Nl/min.

Accuracy
± 0.5% F.S.D. (typical)

Thermal drift (for ambient temperature variation between -20° C and + 65° C)
- span 170 to 340 kPa (1.7 to 3.4 bar): 0.5%/10°C
- span 340 to 1700 kPa (3.4 to 17 bar): 0.25%/10°C

Degree of protection in accordance with IEC 529
IP55

Ambient temperature limits
-40 and + 120°C

Body and material
Carbon steel, AISI 316L, Monel

Body bolts and nuts material
high tensile carbon steel;
AISI 316 Class A4-70 per ISO 3506;
high tensile stainless steel, in compliance with NACE MR0175

Measuring bellows material
AISI 316L, Monel

Gaskets material
PTFE, Viton

Cover material
thermoplastic resin

Surface protections
- carbon steel body and flange: zinc plating and chrome passivation
- AISI 316L body and flange: no protection

Process connections (see figure ref. D)
1/2 in NPT-F

Pneumatic connections
- Air supply (in figure ref. A): 1/4 in NPT-F
- Output (in figure ref. B): 1/4 in NPT-F

Pressure gauge
Brass with stainless steel case (all stainless steel on request) external diameter 51 mm; 0-200 kPa, 0-2 bar and 0-30 psi indication on 82 mm/260° scale.

Air filter regulator
with copper or stainless steel piping, as specified.
Die cast aluminium alloy with light grey epoxy finish.

Net weight (maximum)
14 kg approx

Packing
expanded polythene box

ORDERING INFORMATION

Select one character or set of characters from each category and specify complete catalog number.

PRODUCT CODE **abc de fg hi j k lm**

BASE MODEL
VERSION
BODY AND FLANGE
MEASURING ELEMENT
GASKETS
OUTPUT
EXTRAS

abc **BASE MODEL**

	Code
Absolute pressure transmitter	**NDC**

de **VERSION**

Standard with body bolts and nuts in high tensile carbon steel	**01**
Standard with body bolts and nuts in AISI 316	**11**
Standard with body bolts and nuts in high tensile stainless steel	**21**

fg **BODY AND FLANGE (*)**

Carbon steel / Carbon steel	**01**
AISI 316L / AISI 316L	**11**
AISI 316L / Carbon steel	**13**
Monel / AISI 316L	**21**

(*) Only the body is in contact with fluid

hi **MEASURING ELEMENT**

Bellows material	Range limits - 0 and kPa - psi	Span limits kPa (psi) - (Note 1)	
AISI 316L	2500 - 362	170 and 1700 (24.6 and 246)	**01**
Monel	2500 - 362	170 and 1700 (24.6 and 246)	**21**
AISI 316L (*)	2500 - 362	170 and 1700 (24.6 and 246)	**41**

Note 1: Multiply by 10 the value in kPa (MPa) to obtain mbar (bar).

(*) Suitable for oxygen service

j **GASKETS**

Measuring element gasket	Fulcrum diaphragm gasket	
Viton	Viton	**2**
PTFE (*)	PTFE (*)	**3**

(*) Suitable for oxygen service

k **OUTPUT**

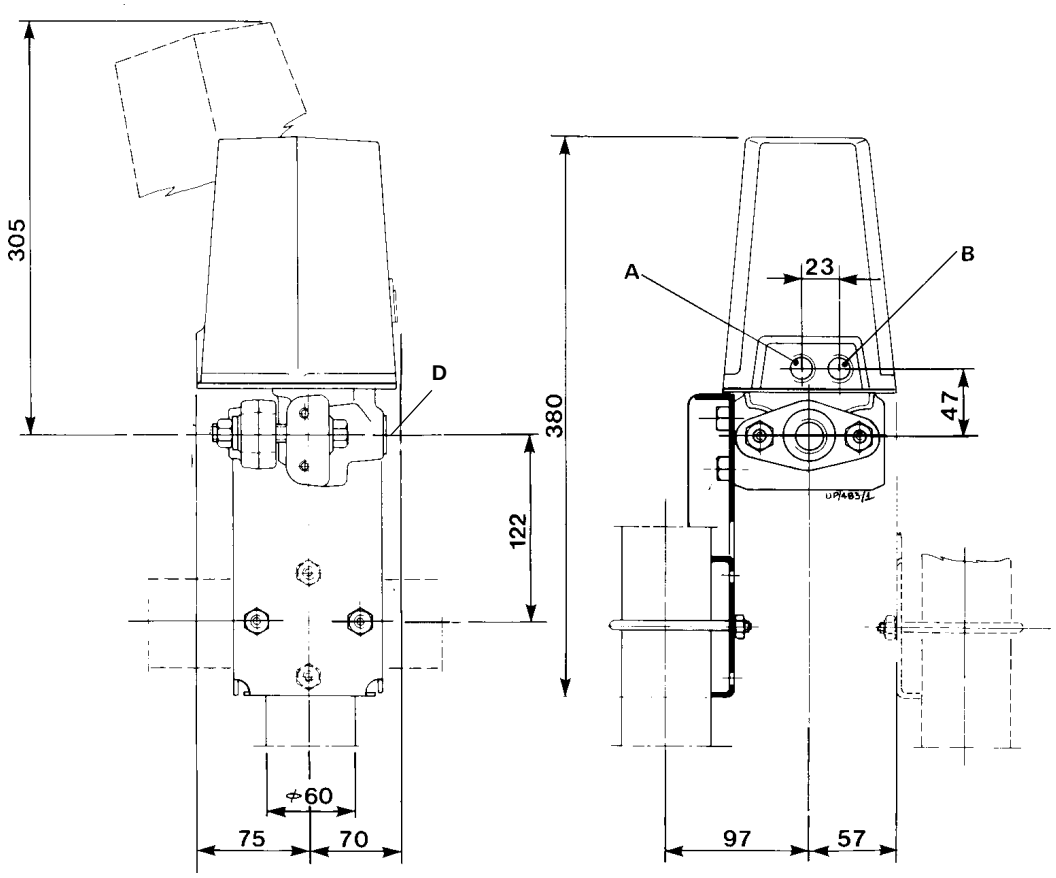
3 to 15 psi	According to ANSI/ISA S 51.1-1979 standard terminology	**1**
3 to 15 psi with zero suppression device		**3**
0.2 to 1.0 kg/cm^2		**4**
0.2 to 1.0 kg/cm^2 with zero suppression device		**6**
20 to 100 kPa / 0.2 to 1 bar		**7**
20 to 100 kPa / 0.2 to 1 bar with zero suppression device		**9**

lm **EXTRAS**

Identification tag material	Piping material	Air filter regulator	Pressure gauge	
Stainless Steel	- -	- -	- -	**02**
Stainless Steel	Stainless Steel	with	- -	**10**
Stainless Steel	Copper	with	- -	**11**
Stainless Steel	Stainless Steel	with	with	**13**
Stainless Steel	Copper	with	with	**14**

■ Compliance to NACE class II bolting, according to specification MR0175, latest revision

MOUNTING DIMENSIONS



SS/NDC Rev 7

The Company's policy is one of continuous product improvement and the right is reserved to modify the specifications contained herein without notice.

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