

WEED INSTRUMENT

INSTRUMENTATION SOLUTIONS FOR INDUSTRY

DIAPHRAGM OPERATED PRESSURE DIFFERENCE SWITCHES

310/316
ISSUE E

- ▲ Die cast weatherproof enclosure to IP66 (NEMA 4).
- ▲ Stainless steel mechanism.
- ▲ Internal tamperproof set point adjustment.
- ▲ Calibrated scale.
- ▲ Setpoint adjustment from -2.5mbar (-1inH₂O) up to 1.6bar (20psi) dependant on model.



Applications include detecting filter blockage, fan failure, fan exhaust systems, clean air purge systems, roll type filters, refrigeration coils, vacuum pick ups.

The switch mechanism and setpoint adjuster are within a pressure die cast enclosure external to the pressure chamber, completely removed from contact with the process medium.

Model 316 fitted with blow-out device as standard.

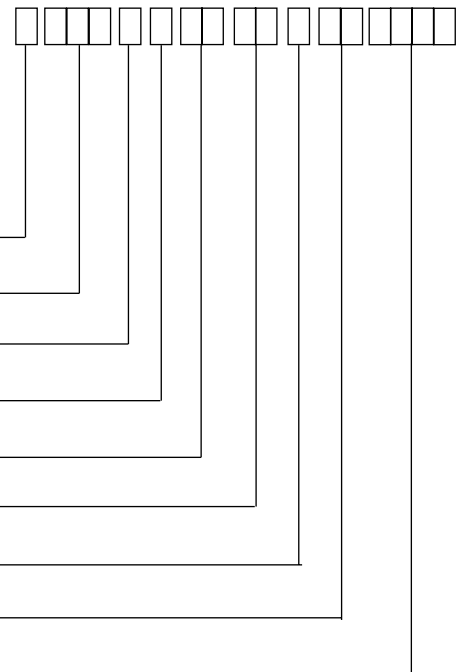
For ease of access the standard weatherproof enclosure separates by the removal of two screws, exposing the microswitch terminals and tamperproof setpoint adjuster.

NOTE: For applications requiring the use of enclosures suitable for hazardous areas, refer to leaflet 306.

HOW TO ORDER

When ordering, please state the relevant product code for each instrument, made up as follows:

- Enclosure.** See Table 1. _____
 - Model.** See Table 2. _____
 - Electrical Entry.** See Table 3. _____
 - Material of Wetted Parts.** See Table 4. _____
 - Range.** See Table 5. _____
 - Switching Options.** See Table 6. _____
 - Process Connection.** See Table 7. _____
 - Options.** See Table 8. _____
 - Special Engineering.** _____
- By consultation with our engineers. See Table 9.



SETTING RANGES

NOTE: For SI units, the bar and millibar have been employed. This follows European and British practice where the Pascal and its multiples have largely been discontinued.
Pa, kPa and MPa scales are available if required.

1 bar = 100kPa = 14.5 psi
1mbar = 100Pa = 0.39 in. H₂O
P_{max} - maximum working pressure

TABLE 5



MODEL 310

P _{max} mbar	psi	RANGE		Code	in. H ₂ O	Code
		mbar				
500	7	-2.5	to +2.5	B3	-1 to +1	BN
		0	to 5	B5	0 to 2	BR
		0	to 15	C2	0 to 6	C4
		0	to 25	C5	0 to 10	C9
		7.5	to 75	D5	3 to 30	D9

MODEL 316

P _{max} bar	psi	RANGE		Code	in. H ₂ O/psi	Code
		mbar/bar				
15	217	0	to 60	D2	0 to 25	D4
		0	to 100	D8	0 to 40	DH
		0	to 400	F1	0 to 160	F4
		0	to 1.0	G0	0 to 15	GB
		0	to 1.6	G8	0 to 20	GZ

SWITCHING OPTIONS

TABLE 6



A much wider variety of switching options is available on Model 306.

Model 310 & 316

UL/CSA RATING (RESISTIVE) §SEE NOTE	IEC 947-5-1/EN 60947-5-1 RATING								Contact	Code
	Designation & Utilization Category		Rated operational current I _e (A) at rated operational voltage U _e	U _i	U _{imp}	VA rating				
						AC	Make	Break		
5 Amps @ 110/250V AC Light duty for AC only	AC14 DC13	D300 R300	0.6/0.3A @ 120/240V AC 0.22/0.1A @ 125/250V DC	250V	0.8kV	AC DC	432 28	72 28	SPDT	00
5 Amps @ 110/250V AC and 2 Amps @ 30V DC General purpose precision	AC14 DC13	D300 R300	0.6/0.3A @ 120/240V AC 0.22/0.1A @ 125/250V DC	250V	0.8kV	AC DC	432 28	72 28	SPDT	02
1 Amp @ 125V AC and §100 mA @ 30V DC Gold alloy contacts for low voltage switching	1A @ 125 VAC RESISTIVE (IEC 1058-1/EN 61058-1)								SPDT	04

The electrical rating is dependent on the microswitch fitted to the instrument. The electrical ratings defined by each approval that the micro switch complies with and is shown on the product nameplate, ie UL/CSA, or IEC. It should be noted that the instrument must be used within the electrical rating specified from the approval you require. This table lists the actual IEC ratings against the Designation & Utilization Category marked on the nameplates. In the absence of any verification by UL/CSA the microswitch manufacturer's rating is stated in **italics and bold**.
If in doubt seek guidance from the factory.

NOTE: For low energy circuits e.g. 30V and up to 100mA, we recommend using gold alloy contact switches.
U_i = rated insulation voltage; U_{imp} = rated impulse withstand voltage across contacts.

PROCESS CONNECTION

TABLE 7



NOTE: For other thread sizes specify adaptors.

	Code
Rc 1/4 (1/4BSP tr INT) to BS21 (ISO 7/1)	A

OPTIONS AND TREATMENTS

Combinations available, apply for details.

SPECIAL ENGINEERING

To your individual requirements, where specified.

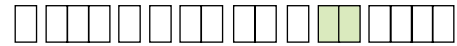
For your convenience, enter your special listing in spaces provided.

PERFORMANCE DATA

FIXED SWITCHING DIFFERENTIAL

Figures given in Table 10 are typical maxima for mid-range setting and are for guidance only. Values will vary across the range, i.e. lower at the bottom and higher at the top of the range. Should the differential be critical for specific applications our engineers should be consulted prior to ordering.

TABLE 8



	Code
Tagging - Variety of tagging methods are available.	APPLY FOR DETAILS

TABLE 9



FEATURE	Code

TABLE 10

MODEL 310

Range Code	00 mbar	02 mbar	04 mbar
B3	0.25	0.8	0.4
B5	0.25	0.8	0.4
C2	0.25	1	0.5
C5	0.25	1	0.5
D5	1.25	5	2.5

MODEL 316

D2	1.50	6	3
D8	1.50	6	3
F1	3	12	6
G0	12.5	50	25
G8	12.5	50	25

MODEL 310

Range Code	00 in.H ₂ O/psi	02 in.H ₂ O/psi	04 in.H ₂ O/psi
BN	0.10	0.32	0.16
BR	0.10	0.32	0.16
C4	0.10	0.40	0.2
C9	0.10	0.40	0.2
D9	0.50	2	1

MODEL 316

D4	0.60	2.4	1.2
DH	0.60	2.4	1.2
F4	1.2	4.8	2.4
GB	0.18	0.72	0.36
GZ	0.18	0.72	0.36

TECHNICAL DATA

ACCURACY

Set point repeatability $\pm 1\%$ of full scale at 20°C ambient.
Scale accuracy $\pm 3\%$ of full scale.

AMBIENT TEMPERATURE RANGE

All models are suitable for operating within a range of ambient temperature from -25 to 60°C (-13 to 140°F) provided that the process does not freeze within this range.

CAUTION:

Moving parts have been treated with a water repelling lubricant before leaving factory.
Occasional inspection and the application of a water repelling lubricant is recommended to ensure moving parts remain free under all conditions.

ELECTRICAL CONNECTIONS

Connections are made direct to the microswitch terminals.

Earthing/Grounding

An earthing/grounding stud is provided inside the enclosure adjacent to the entry.

Dielectric Strength

The electrical assembly is capable of withstanding *2kV between live parts and earth/ground and 500V between open contacts.

Mounting Position/Location/Installation

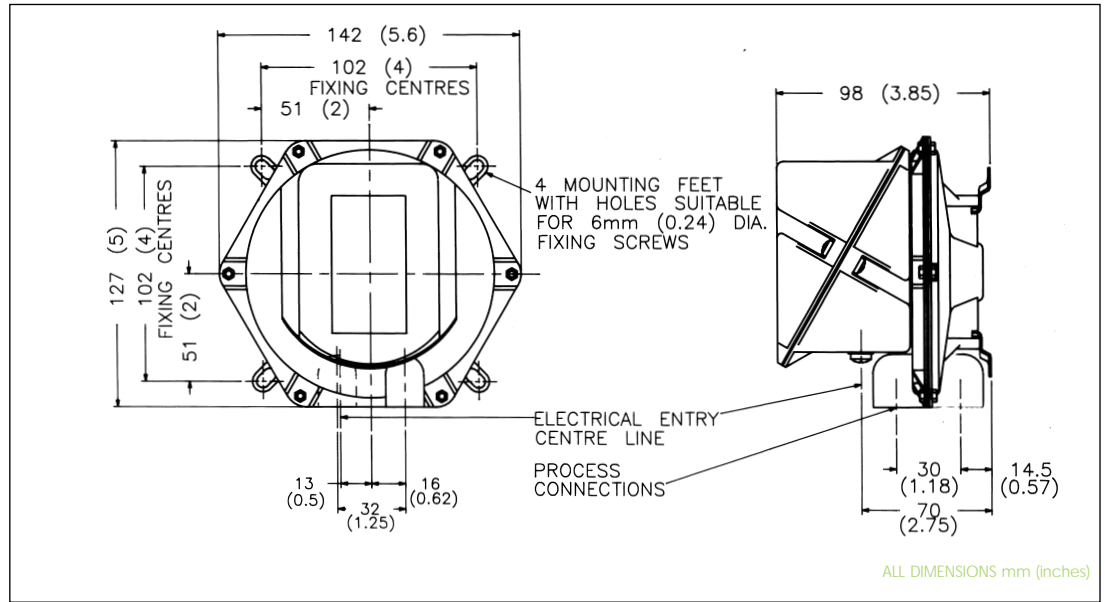
Vertical as shown, taking care to avoid siting in locations that transmit excessive shock or vibration. For further advice contact our engineers.

UNIT WEIGHTS (Approx.)

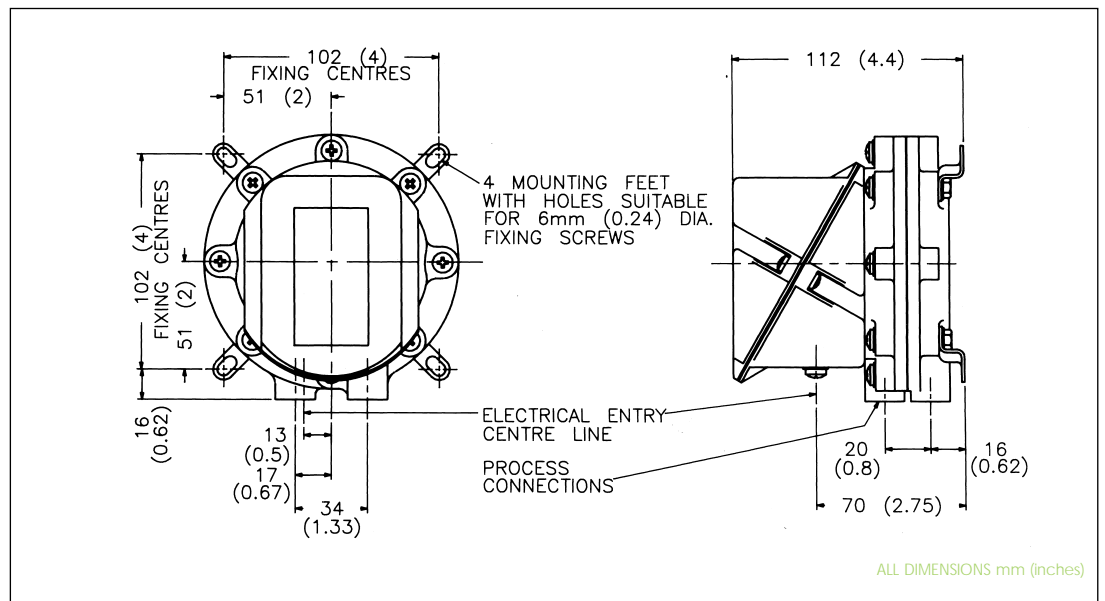
MODEL	
310	1kg/2.2lb
316	1.4kg/3lb

DIMENSIONS

MODEL 310



MODEL 316



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DELTA CONTROLS LIMITED, ISLAND FARM AVENUE, WEST MOLESEY, SURREY KT8 2UZ
 TEL: +44 (0)20 8939 3500 FAX: +44 (0)20 8783 1163
 E-MAIL: sales@delta-controls.com WEB SITE: www.delta-controls.com

Registered Office Registered in England No. 486464

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