

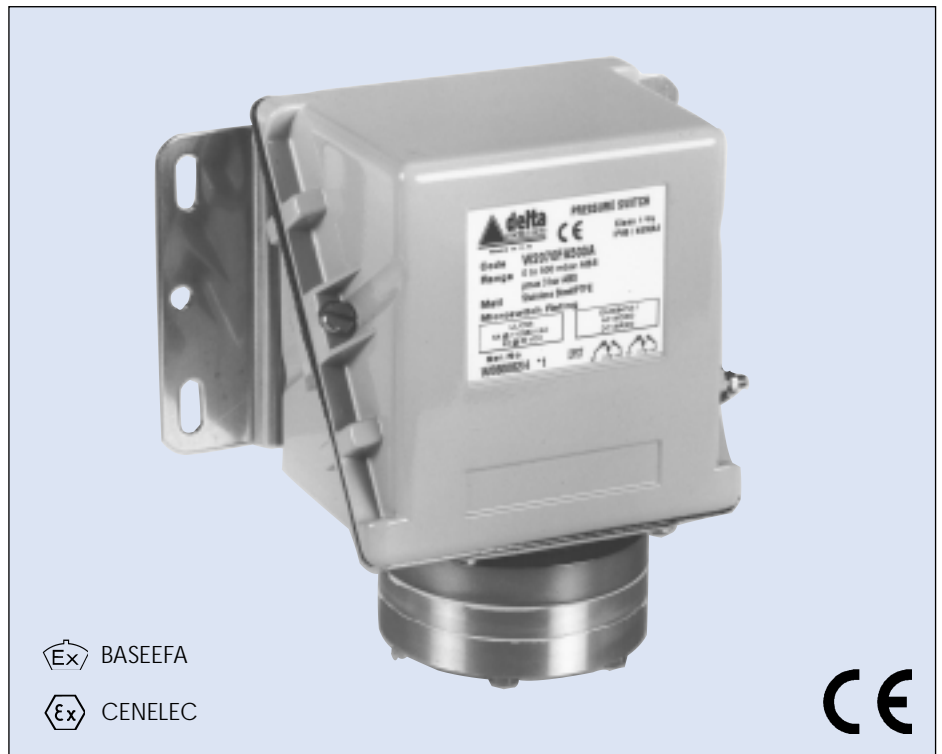
WEED INSTRUMENT

INSTRUMENTATION SOLUTIONS FOR INDUSTRY

**DIAPHRAGM OPERATED
 ABSOLUTE PRESSURE SWITCH**

207
 ISSUE E

- ▲ Precision stainless steel mechanism for arduous atmospheres and high humidity.
- ▲ Set point adjustable over whole range.
- ▲ Calibrated scale.
- ▲ Tamperproof adjuster.
- ▲ Weatherproof and Explosionproof models.
- ▲ Sealed reference vacuum.
- ▲ NACE MR-01-75 option.



Model 207 extends the facilities of the 200 Series to cover the sensing of absolute pressures.

A single stainless steel diaphragm is used, on one side of which a "hard" reference vacuum is sealed for life. As a result, the process pressure is balanced not against atmospheric pressure but against an absolute vacuum reference.

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. _____

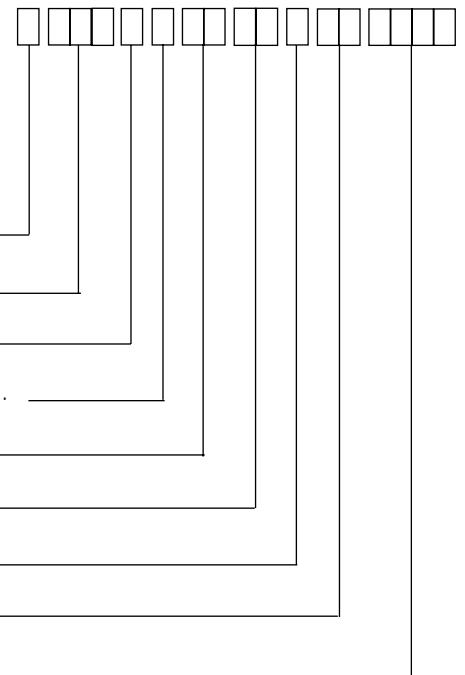
Switching Options. See Table 6. _____

Process Connection. See Table 7. _____

Options. See Table 8. _____

Special Engineering. _____

By consultation with our engineers. See Table 9.



ENCLOSURES

FINISH

All enclosures except Type A are finished in light grey epoxy resin paint. Special finishes to order.

INTRINSIC SAFETY







Pressure switches neither store nor generate electricity and are therefore normally usable in intrinsically safe circuits without further certification, provided that the power source of the circuit is certified Exi and the installation is in accordance with the relevant codes of practice (eg ANSI/ISA 12.6 or BS 5345 Part 4, 1977). Because of the low voltages and currents of I.S. circuits, we recommend using gold and/or sealed contacts.

Temperatures in Table 1 refer to limitations for certified enclosures. See **TECHNICAL DATA**.

Low Voltage Directive (LVD) - 72/23/EC Amended by 93/86/EEC.

The LVD does not apply to products with enclosure codes 'H', 'K', 'M', 'N' for use in hazardous areas. Switch products with enclosure codes 'H', 'K', 'M', 'N', are covered by the Explosive Atmospheres Directive ATEX - 94/9/EC and when CE-marked will indicate compliance with this directive alone. The following directives do not apply to switch products manufactured by Delta Controls: Electromagnetic Compatibility EMC - 89/336/EEC amended by 93/68/EEC. Machinery Safety Directive MSD - 89/392/EEC amended by 93/68/EEC.

TABLE 1

SAFE AREA ENCLOSURES	Code	
General Purpose Weatherproof The basic enclosure is pressure die-cast in zinc alloy, offering weather protection not less than NEMA type 4 + 13/IP66.	W	
Weatherproof For Aggressive Atmospheres Investment cast enclosure in austenitic stainless steel with weather protection not less than NEMA type 4X + 13/IP66.	A	
EXPLOSIONPROOF ENCLOSURES DIVISION 1 (ZONE 1)		
Aluminum Alloy EExd IIC T6 (-60 to +40°C), T4 (-60 to +80°C) Gravity die-cast enclosure in aluminium-silicon alloy. BASEEFA certified to CENELEC EN50 014 and EN50 018 Suitable for outdoor use, IP66. N.B. Electrical Entry must be specified since usage differs between CENELEC countries.	 	H
Australian Approval Exd IIC T6 (-60 to +40°C)	SAA	
Cast Iron EExd IIC T6(-60 to +40°C), T4 (-60 to +80°C) As Code H, but sand cast in high quality grey iron.	 	K
Australian Approval Exd IIC T6 (-60 to +40°C)	SAA	
Many countries have a separate approvals system for underground mining use. For the UK we offer approval by HSE(M). Group 1 Temperature class T6, plus weather protection IP55. Cast Iron Only.		M
ExN ENCLOSURES DIVISION 2 (ZONE 2)		
Type of Protection ExN II T6 (-20 to +40°C) As Code 'W' but BASEEFA certified to BS 4683 Part 3 ExN II T6. Weatherproof to NEMA type 4/IP66. Limited switching facility (see Table 6).		N

MODELS

TABLE 2

	Code
Absolute Pressure Switch	207

ELECTRICAL ENTRY

Adaptors are available for other popular thread sizes.

TABLE 3

	Code
Enclosures W & N: Clearance for 20mm ³ / ₄ in outside dia conduit.	1
Enclosures H, K & A: M20 x 1.5 ISO thread.	0
Enclosures H & K: M20 x 1.5 ISO thread, dual entry.	5
Enclosures H & K ³ / ₄ - NPT INT.	3
Enclosures H & K: ³ / ₄ - NPT INT, dual entry.	6
Enclosure W: M20 x 1.5 elbow adaptor.	0
Enclosure N: M20 x 1.5 straight adaptor. (Approved)	0
Enclosure M: Cable size and type must be specified.	*

*Code on application.

MATERIAL OF WETTED PARTS

TABLE 4



	Code
316 stainless steel, PTFE seal	F

SETTING RANGES

All ranges have maximum working pressure 3 bar/45 psi absolute.

TABLE 5



P_{max}		RANGE			Code
psia	bar	torr	Code	mbar	
45	3	0 to 120	AG	0 to 160	A8
45	3	0 to 400	AF	0 to 500	A5
45	3	0 to 76	AE	0 to 1000	A1

SWITCHING OPTIONS

TABLE 6



A much wider variety of switching options can be engineered to customers requirements including heavy DC, manual latching, pneumatic output etc. Please consult our engineers for further information.

Model 207 and variant 3000 only										
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	D300	0.6/0.3A @ 120/240V AC 0.22/0.1A @ 125/250V DC	250V	0.8kV	AC	432	72	SPDT † DPDT †	00 01
	DC13	R300				DC	28	28		
5 Amps @ 110/250V AC and 2 Amps @ 30V DC General purpose precision	AC14	D300	0.6/0.3A @ 120/240V AC 0.22/0.1A @ 125/250V DC	250V	0.8kV	AC	432	72	SPDT DPDT	02 03
	DC13	R300				DC	28	28		
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 DPDT	04 05
	N/A									
5 Amps @ 110/250V AC and 2 Amps @ 30V DC Environmentally sealed	N/A								SPDT* † DPDT* †	0P 0Q
	N/A									

Variant 2000 (Cannot be supplied with enclosure Code N)

5 Amps @ 110/250V AC Adjustable for AC only	AC14	D300	0.6/0.3A @ 120/240V AC	250V	0.8kV	AC	432	72	SPDT	0C
5 Amps @ 110/250V AC and 2 Amps @ 30V DC Adjustable	AC14	D300	0.6/0.3A @ 120/240V AC 0.22/0.1A @ 125/250V DC	250V	0.8kV	AC DC	432 28	72 28	SPDT	0D

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.

*Suitable for use with ExN Enclosures (Code N).

† Not available on variant 3000.

PROCESS CONNECTION

Adaptors are available for applications where their use is permitted.

TABLE 7



	Code
Rc 1/4 (1/4 BSP tr INTERNAL) to BS21 (ISO 7/1)	A
1/4 - 18 NPT INTERNAL	F

OPTIONS AND TREATMENTS

Combinations available, apply for details.

SPECIAL ENGINEERING

In addition the 207 can be adapted to adjustable switching differential.

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

PERFORMANCE DATA

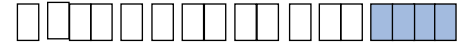
The stiffness of the pressure sensing unit, which is common to all ranges, means that the on-off differential is virtually the same irrespective of scale. Ranges A8 and A5 have the advantage of more sensitive adjustments.

TABLE 8



	Code
Tropicalisation High humidity environment.	01
Applies when - no option is required and selection is made from special engineering.	00

TABLE 9



FEATURE	Code
Special microswitch, giving adjustable switching differential. Limited span. See Table 6,	2000
Secondary mechanism, giving adjustable switching differential. Wide span. See Table 6.	3000

TABLE 10

STANDARD FORM: FIXED SWITCHING DIFFERENTIAL

Switch Mode*	SPDT				DPDT			
	00	02	04	0P	01	03	05	0Q
torr	8	17	8	52	15	32	15	73
mbar	11	22	11	68	20	42	20	97

VARIANTS 2000/3000: ADJUSTABLE SWITCHING DIFFERENTIAL

Switch Mode*	Variant 2000				Variant 3000			
	SPDT Only				SPDT		DPDT	
	OC		OD		02 or 04		03 or 05	
	From	To	From	To	From	To	From	To
torr	19	53	53	188	113	375	113	375
mbar	25	70	70	250	150	500	150	500

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