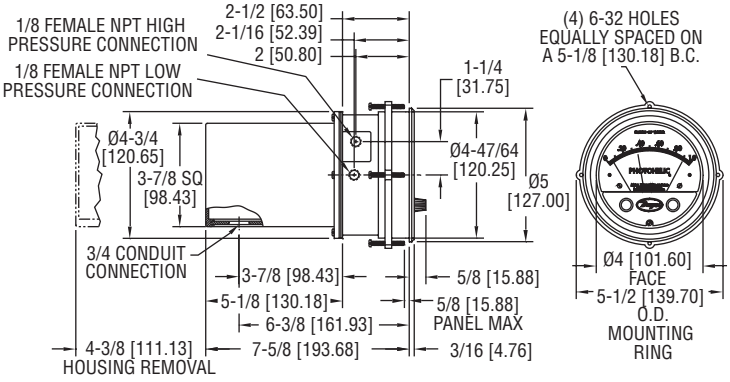
Dwyer

SERIES A3000

PHOTOHELIC® PRESSURE SWITCH/GAGES

3-in-1 Indicating Gage, Lo-Limit and Hi-Limit Control

Set points are instantly adjusted with front knobs.



The **SERIES A3000** Photohelic® Switch/Gages function as versatile, highly repeatable pressure switches combined with a precise pressure gage employing the time-proven Magnehelic® gage design. The Photohelic® switch/gage measures and controls positive, negative or differential pressures of air and compatible gases. Standard models are rated to 25 psig (1.7 bar) with options to 35 (2.4) or 80 (5.5 bar) psig. Two phototransistor actuated, DPDT relays are included for low/high limit control. Easy to adjust set point indicators are controlled by knobs located on the gage face. Individual set point deadband is one pointer width - less than 1% of full scale. Set points can be interlocked to provide variable deadband - ideal for control of fans, dampers, etc. Gage reading is continuous and unaffected by switch operation, even during loss of electrical power. Choose from full scale pressure ranges from a low 0-.25 in (0-6 mm) w.c. up to 30 psi (21 bar); single positive pressure to 6000 psig (413 bar).

FEATURES/BENEFITS

- 3-in-1 instrument allows the reduction of several instruments with one product, saving inventory, installation time and money
- Patented design and 1% full scale dead band provides quick response to pressure changes means no delay in switching and chatter-free operation
- A wide range of models that can meet pressure measurement specifications from low to very high

APPLICATIONS

- Air conditioning systems
- Clean rooms
- Fume exhaust systems

SPECIFICATIONS

GAGE SPECIFICATIONS

Service: Air and non-combustible, compatible gases.
Wetted Materials: Consult factory.
Accuracy: ±2% of FS at 70°F (21.1°C). ±3% on -0 and ±4% on -00 models.
Pressure Limits: -20″ Hg to 25 psig (-0.677 to 1.72 bar); MP option: 35 psig (2.41 bar); HP option: 80 psig (5.52 bar).
Temperature Limits: 20 to 120°F (-6.67 to 48.9°C). Low temperature option available.
Process Connections: 1/8″ female NPT.
Size: 4″ (101.6 mm) dial face, 5″ (127 mm) OD x 8-1/4″ (209.55 mm).
Weight: 4 lb (1.81 kg).

SWITCH SPECIFICATIONS

Switch Type: Each setpoint has 2 form C relays (DPDT).
Repeatability: ±1% of FS.
Electrical Rating: 10 A @ 28 VDC, 10 A @ 120, 240 VAC.
Electrical Connections: Screw terminals. Use 167°F (75°C) copper conductors only.
Power Requirements: 120 VAC, 50/60 Hz; 240 VAC & 24 VAC power optional.
Mounting Orientation: Diaphragm in vertical position. Consult factory for other position orientations.
Set Point Adjustment: Adjustable knobs on face.
Agency Approvals: CE, CSA, UL.

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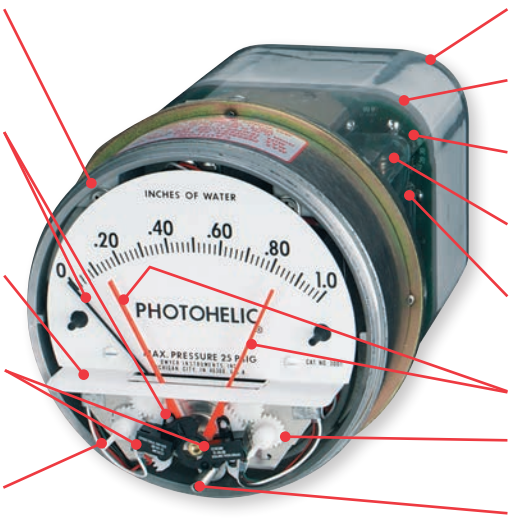
Bezel and front cover (with set point knobs and zero adjustment screw) removed to expose Photohelic® gage set point mechanism. Cover is clear polycarbonate plastic.

Gage pointer and light shutter are mounted on helix and balancing counterweight. Shutter passes through slot in optical limit switch to expose phototransistors to integral infrared light source or mask them depending on applied pressure.

Light shield effectively protects phototransistors from strong outside light sources yet allows free pointer movement. It also gives interior a clean "finished" look.

Optical limit switches are used for reliability and long service life. Attached directly to set pointers, they are individually aligned to assure precise switching accuracy.

Semi-Flexible drive shaft connects to set point knobs.



Plastic enclosure protects electronic components and electrical connections.

Polycarbonate connection or terminal board is self-extinguishing.

Glass-epoxy printed circuit boards for durability and performance.

Load relays are DPDT with latching feature for maximum application versatility.

Electronics are designed to operate on 50/60 Hz, 120 volt current with 10% over or under voltage. Special units for other voltages are available.

Switch set pointers show switch settings at all times.

Spring loaded friction clutch prevents operator damage of set point mechanism.

Zero adjustment screw connects to screw in cover to adjust zero pressure reading.

MODEL CHART

Model	Range, in w.c.
A3000-00	0-.25
A3000-0	0-.50
A3001	0-1.0
A3002	0-2.0
A3003	0-3.0
A3004	0-4.0
A3005	0-5.0
A3006	0-6.0
A3008	0-8.0
A3010	0-10
A3015	0-15
A3020	0-20
A3025	0-25
A3030	0-30
A3040	0-40
A3050	0-50
A3060	0-60
A3080	0-80
A3100	0-100
A3150	0-150
Bi-Directional Range	
A3000-00N	.05-.20

Zero Center Ranges	
Model	Range in w.c.
A3300-0	.25-0-.25
A3301	.5-0-.5
A3302	1-0-1
A3304	2-0-2
A3310	5-0-5
A3320	10-0-10
A3330	15-0-15
Model	Range in w.c. /Air Velocity, F.P.M.
A3000-00AV	0-.25/300-2000
A3000-0AV	0-.50/500-2800
A3001AV	0-1.0/500-4000
A3002AV	0-2.0/1000-5600
A3010AV	0-10/2000-12500
Pitot tube required	

Model	Range, mm w.c.
A3000-6MM	0-6
A3000-10MM	0-10
A3000-25MM	0-25
A3000-50MM	0-50
A3000-80MM	0-80
A3000-100MM	0-100
Zero Center	
A3300-20MM	10-0-10
A3300-30MM	15-0-15
Model	Range, Pascals
A3000-60PA	0-60
A3000-125PA	0-125
A3000-250PA	0-250
A3000-500PA	0-500
A3000-750PA	0-750

Zero Center Ranges	
Model	Range, Pa
A3300-250PA	125-0-125
A3300-500PA	250-0-250
Model	Range, kPa
A3000-1KPA	0-1
A3000-1.5KPA	0-1.5
A3000-2KPA	0-2
A3000-3KPA	0-3
A3000-4KPA	0-4
A3000-5KPA	0-5
A3000-8KPA	0-8
A3000-10KPA	0-10
A3000-15KPA	0-15
A3000-20KPA	0-20
A3000-25KPA	0-25
A3000-30KPA	0-30
Zero Center Ranges	
Model	Range, kPa
A3300-1KPA	.5-0- .5
A3300-3KPA	1.5-0-1.5

OPTIONS

To order add suffix:	Description
-SRH	Single relay activates on increase
-SRL	Single relay activates on decrease
-OLS	OEM model
-RMR	Remote mounted relay
-TAMP	Tamper proof knobs
-MP	Medium pressure
-HP	High pressure
-LT	Low temperature (-20°F)
-NIST	NIST traceable calibration certificate

ACCESSORIES

Model	Description
A-298	Flat flush mounting bracket
A-601	Manual reset switch net

Note: Special models can be built to OEM customers' specifications with scales reading in special pressure units like ounces per square inch, inches of mercury, etc. Square Root Scales reading in FPM or SCFM are also available. Custom logos and special graduations can also be included. Contact factory for minimum quantities and pricing.

Process Tubing Options: See page 489 (Gage Tubing Accessories)