



Pressure Differential Switchover Manifold for Gas Cylinders, Brass, 3000 PSIG (PDSM3000B Series - Laboratory Applications)

SPECIFICATION

Pressure Differential Switchover Manifold

The BeaconMedæS Laboratory Pressure Differential Switchover Manifold (PDSM3000B Series) accommodates multiple gas cylinders equally divided into two banks and provides an uninterrupted supply for a specific gas service. The manifold is cleaned, tested and prepared for the indicated gas service and constructed following NFPA, ASME B31.3 and CGA guidelines.

which controls the pressure outlet to the pipeline distribution system. The manifold automatically changes from the depleted primary supply bank to the reserve supply bank. After replacement of the depleted cylinders the priority bank selector knob should be turned to the opposite cylinder bank.

Manifold Description

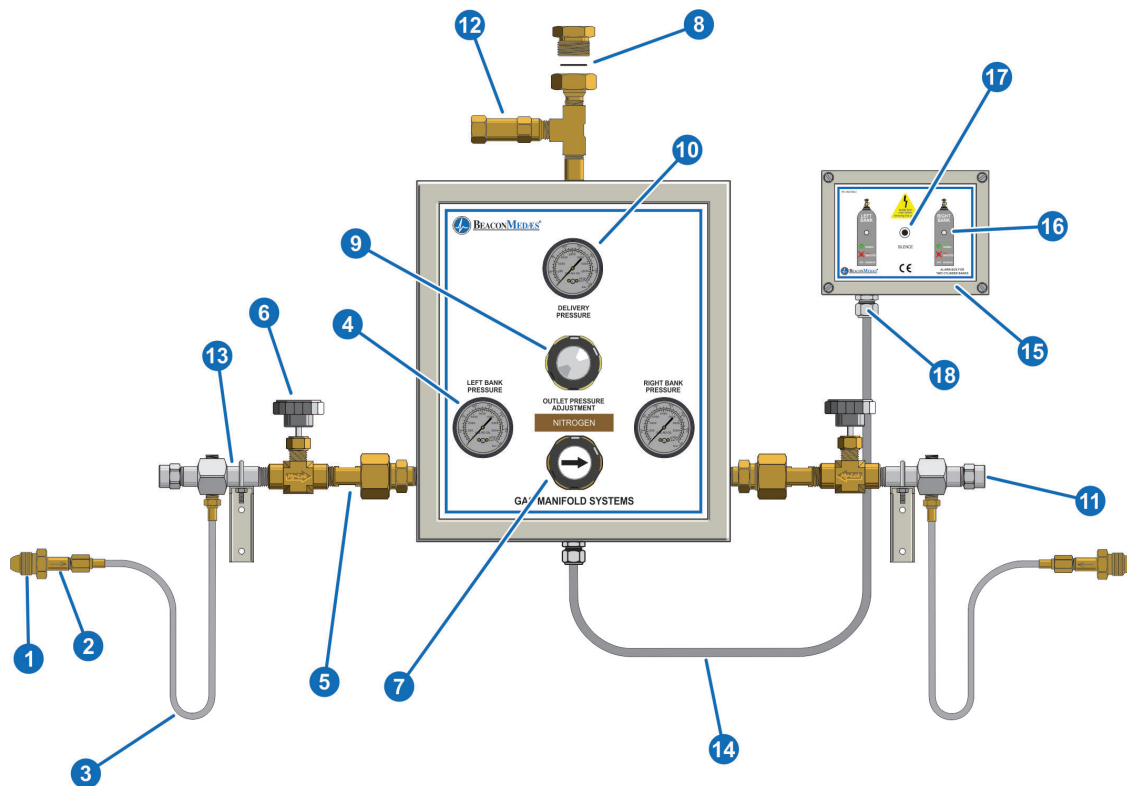
The PDSM3000B Series manifold provides an uninterrupted supply of high purity gas by switching over to the reserve gas bank automatically. At a preset pressure, the system automatically changes from the supply bank to the reserve bank. A simple rotation of the primary bank selector knob resets the unit. Easy to read analog gauges show the delivery and individual bank pressure.

Operation and Design

The manifold box includes a delivery pressure gauge, two analog cylinder bank pressure gauges (left and right bank), a primary bank selector knob and a delivery pressure adjustment knob. The direction of the arrow on the primary bank selector knob determines which bank is in service. The manifold has intermediate and line pressure relief valves to protect components from over pressurization.

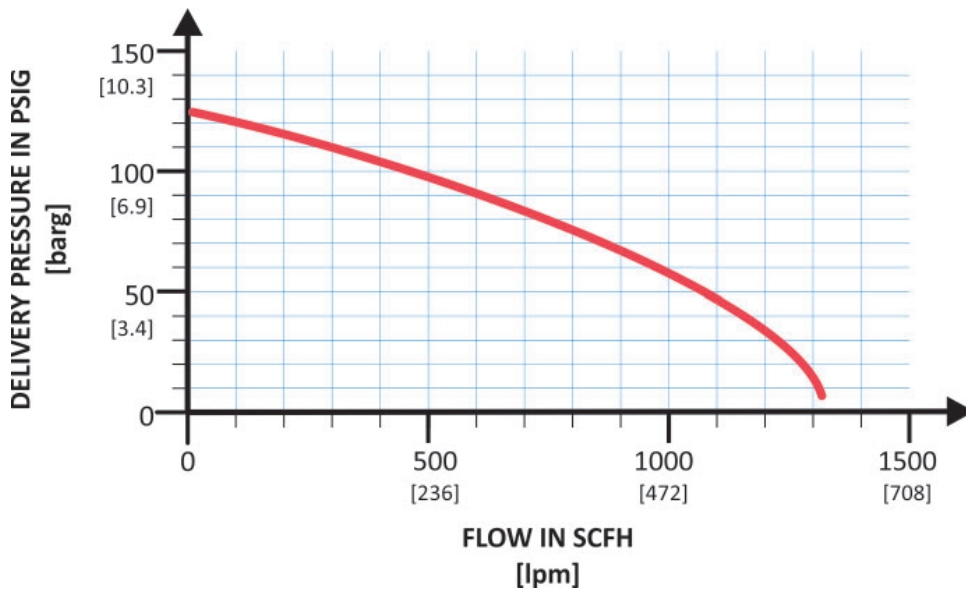
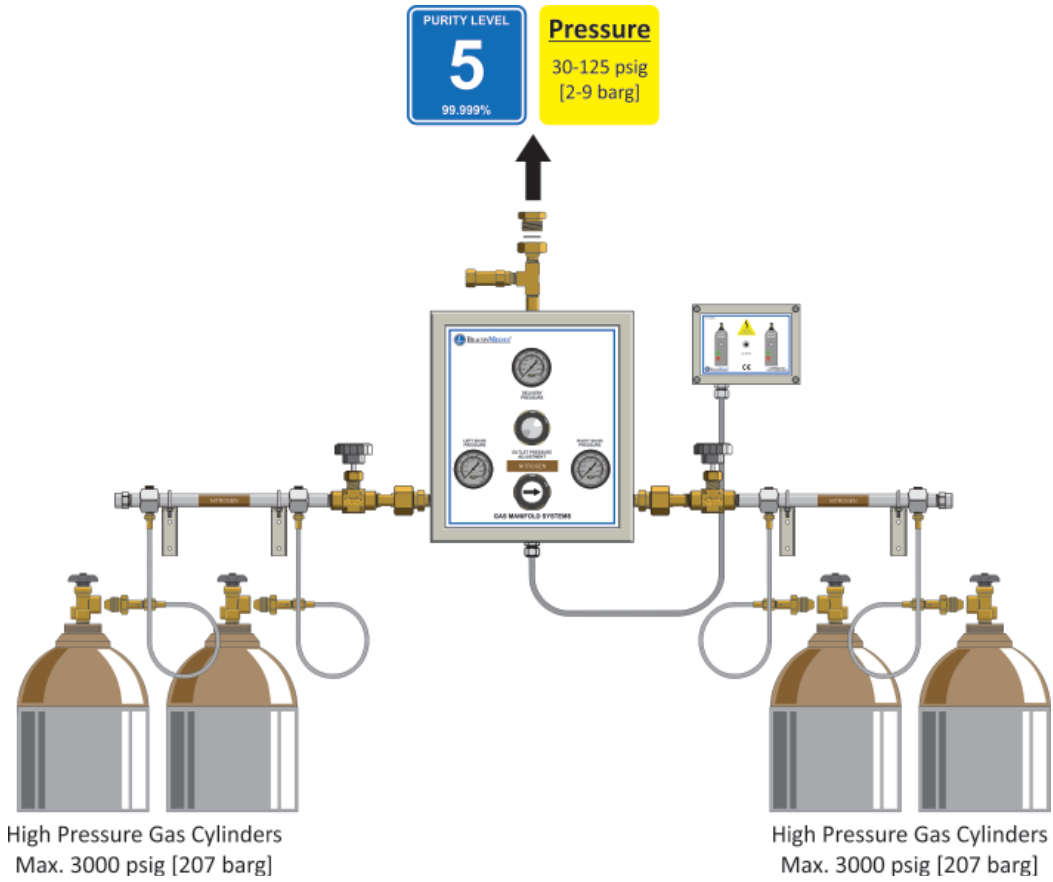
The manifold also includes an alarm box option with color coded LED visual indicators. NOTE: The alarm option is only available at the time of order and must be installed in the factory (no retrofitting available). The green LED's are illuminated if their respective cylinder bank pressures are satisfactory. The red LED illuminates when either cylinder bank is depleted. The alarm box contains an audible horn that alarms when a bank is depleted. The silence button stops the horn but the red LED remains illuminated until the cylinder bank is pressurized again. The alarm box includes dry contacts allowing for remote alarm connections for cylinder changeover. The alarm box operates with a 24VAC plug-in power transformer (provided with the manifold).

A bank regulator (one for each cylinder bank) is used to initially reduce the cylinder pressure to the line regulator

Standard Configuration - Brass Construction


- | | | |
|--------------------------------------------------------|-----------------------------------------------------|-----------------------------------------|
| 1 Gas Specific Cylinder Nut | 7 Priority Bank Selector Knob | 13 Header Bar |
| 2 Gas Specific Cylinder Nipple with Check Valve | 8 Outlet Union (1/2" F.NPT) | 14 Alarm Box Cable (5-ft long) |
| 3 Cylinder Lead | 9 Delivery Regulator Adjustment Knob | 15 Alarm Enclosure |
| 4 Inlet Pressure Gauge (0-4000 psi) | 10 Outlet Pressure Gauge (0-200 psi) | 16 Visual (LED) Status Indicator |
| 5 Header Bar Union | 11 Capped for Future Expansion | 17 Silence Push-button |
| 6 Needle Valve (Header Isolation) | 12 Outlet Pressure Relief Valve (1/2" F.NPT) | 18 Alarm Cable Cord Grip |

Materials	Enclosure	Steel, Powder Coated, Light Grey
	Header Bars	Brass Bar Stock, Nickel Plated
	Tubing	Copper, ASTM B75
	Fittings	Brass
	Flexible Hoses	TCH: Teflon Core, Brass Fittings, Stainless Steel Braiding SSH: Stainless Steel Core, Fittings and Braiding
	Relief Valves	Brass Body, Teflon Seat, Stainless Steel Spring
	Pressure Reducing Regulators	Brass Body, Stainless Steel Diaphragm, Teflon Seat
	Pressure Switches	Brass Connection, Stainless Steel Piston, Viton Seals

Use & Performance


Ordering Information

PDSM3000B - - - - - **WM** -
 A B C D E F G H

BeaconMedaes PDSM3000 Manifold Model Number Chart			
Variable	Definition	Allowable Value	Description
A	Inlet Pressure	3000	3000 PSIG [207 BARG]
B	Material	B	Brass
C	Gas	346 580A 580H 350H 580N 590 540	Air- Compressed Argon Helium Hydrogen Nitrogen Air-Industrial Oxygen
D	No. of Cylinders	2 4 6 8 10	1x1 2x2 3x3 4x4 5x5
E	Alarm	AB (leave blank)	Alarm Box No Alarm Box
E	Hose	TCH SSH SSHAG	Teflon Core Hose Stainless Steel Hose Stainless Steel Hose with Armour Guard
F	Configuration	10S 10V	Standard 10" Center Vertical Crossover 10" Center
G	Mounting	WM	Wall Mount
H	Option(s)	VV 3R*	Vent Valve Outside Installation
(H)	Cylinder Connection	CGA (leave blank) BS DIN NEN	CGA-United States BS341-Great Britain DIN 477-Germany NEN 3268-The Netherlands

Example: MANIFOLD PDSM, 3000 PSIG INLET, BRASS, ARGON, 3X3 CYLINDERS, ALARM, STAINLESS STEEL HOSES, USA

Example Model Number: PDSM3000B-580A-6-AB-SSH-10V-WM

***3R Option--Outside Installation**

PDSM Series Manifolds are designed for indoor installations. If outdoor installation is required, by selecting the "3R" option, all electrical devices (within the manifold and alarm) will be mounted with NEMA 4X enclosures. Please be aware that even with the 3R option selected, the PDSM enclosure, which is not NEMA 4X, will rust over time due to outdoor exposure as it is made out of steel.

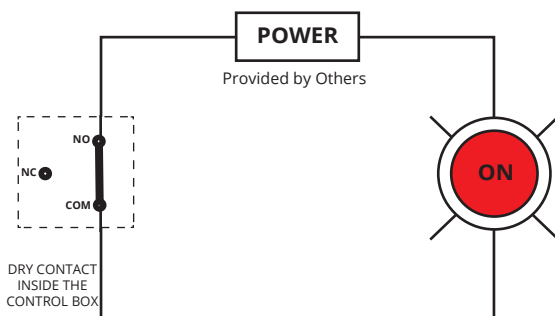
Technical Specifications	
Gas Service	Refer to Part Number Matrix
Maximum Inlet Pressure	3000 psig [207 barg]
Delivery Pressure Range	30-125 psig [2-9 barg]
Flow Coefficient	Cv = 0.4, Refer to Flow Chart
Operating Temperature	-40°F to 100°F [-40°C to 38°C]
Pipeline (Outlet) Relief Valve	150 psig [10 barg]
Inlet Connections	Gas Specific CGA Fittings
Manifold Outlet Connection	1/2" F.NPT
Wall Plug-In Power Transformer*	Primary: 120 VAC, Secondary: 24 VAC , 1.67 Amp.
Electrical Components	All Electrical Components are UL and CSA listed
Dry Signal Contact	Normally Open (3 Amp. @ 28 VDC/277 VAC when contact is in Close Position)
Cleaning	Cleaned for Oxygen Service as per CGA 4.1

* Wall plug-in power transformer provided by BeaconMedaes.

Remote Alarm Signal Circuitry

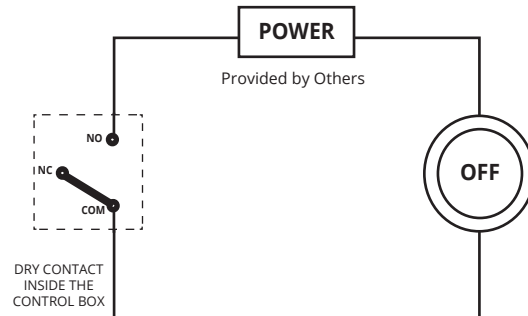
The Alarm/Control Box of the PDSM3000B Series Manifold has a dry contact available for remote alarm actuation. It is triggered each time any of the two cylinder banks are empty.

Alarm Condition



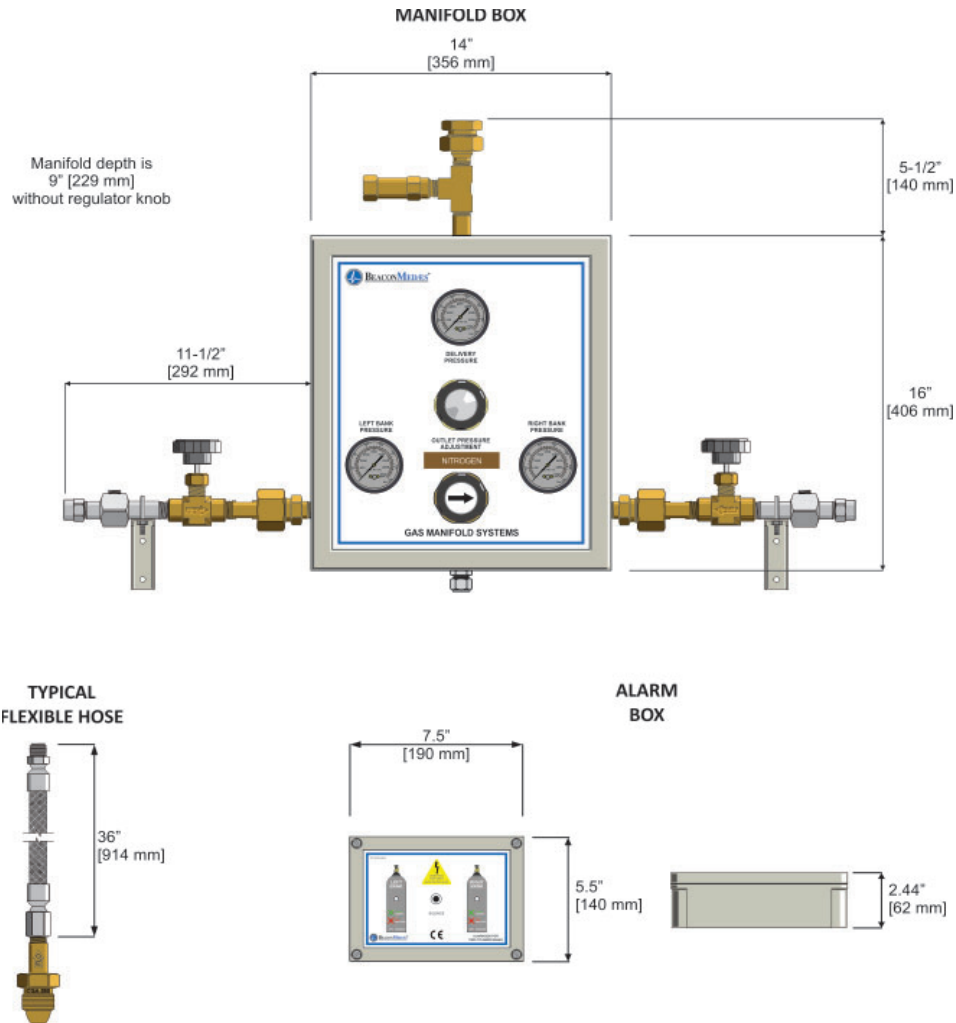
The content inside one of the gas cylinder banks is depleted (low pressure). The dry contact switches from the Normally Closed (NC) position to Normally Open (NO) position. The electrical circuit is closed and the alarm device is actuated.

No Alarm Condition



In this situation, both gas cylinder bank pressures are satisfactory (i.e. not empty). The dry contact inside the remote alarm box is in the Normally Closed position. The electrical circuit is open and the alarm device is NOT actuated.

Standard Configuration (1x1) in inches
 Numbers between [] are in millimeters



BeaconMedæS PDSM3000 Header Bar Length				
Cylinder Configuration	1x1 (10S)	2x2 (10S)	3x3 (10S)	4x4 (10S)
	2x2 (10V)	3x3 (10V)	5x5 (10V)	7x7 (10V)
		4x4 (10V)	6x6 (10V)	8x8 (10V)
Inches	37.50"	57.50"	79.25"	99.50"
Milimeters	952.5 mm	1460.5 mm	2012.95 mm	2527.3 mm