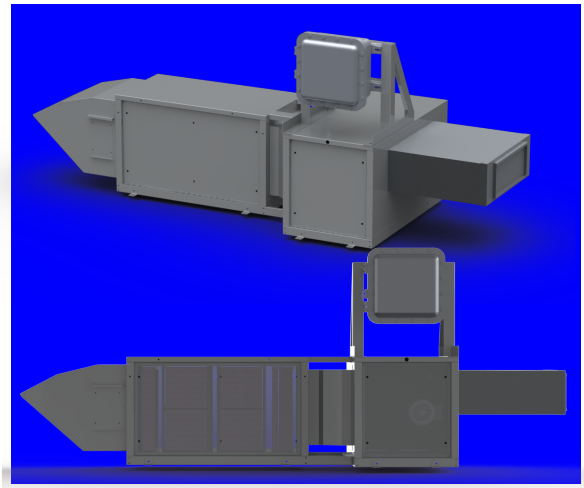
PB 15 Series

Pressurizing Blowers

with

Modular Filter Housings



APPLICATIONS

- Metal Smelters and Mills
- Pharmaceutical Plants
- Paper Plants
- Grain Transfer Silos
- Motor Control Centers
- Switchgear Buildings

FEATURES

- Automatic Building Pressure Control and Air Filtration in one Pre-assembled Module
- Pressure Adjustable from 0.025" to 0.50" w.c.
- Fully Automatic; Speed Modulated Blower Maintains Preset Pressure
- Eliminates Problems of Damper Systems
- Minimizes Heating and Cooling Losses
- Explosion Proof Class I, Groups B, C or D and Class II, Groups E, F and G in Div. 1 or 2(*)
- Blower Capacities to 6250 CFM
- Skid Mounted, Pretested System for Timesaving Installation and Start-Up
- Filters for Dust, Odor(*) and Corrosion(*) Control
- Control Panel with Pressure Readout, Pressure Loss Alarm, and Purge Controls(*)
- Smoke, Hydrocarbon or Specific Gas Detectors with Alarm and Automatic Shutdown(*)
- Full Redundancy with Automatic Switchover(*)
- Allows Component Isolation for Maintenance
- Corrosion Resistant Coatings and Coil Finish(*)

DESCRIPTION

Control and computer rooms, offices and manufacturing facilities in dusty, corrosive or hazardous locations require both pressurization and air filtration. Positive room pressures and minimum air flows across door openings are mandated by NFPA 496 and other industrial codes. **PB 15** units provide these functions automatically with one compact, pre-assembled and pretested system. Explosion proof models meet the requirements of Articles 500-503 of the National Electric Code (NEC) for Class I, Groups C and D or Class II, Groups E, F and G, Divisions 1 and 2.

A control panel in the conditioned space facilitates setting and monitoring the desired room pressure. This pressure is then automatically maintained by variable speed, low noise blowers. Only the amount of make-up air required to offset losses from building leakage and door openings is supplied. A choice of models provide air flow up to 6250 cu-ft per minute at standard or high static pressures. A built-in filter housing can be fitted with a choice of special filters including filters for particulate, corrosion or odor control. Deep bed carbon filters are available with either standard or modified carbon packings.

PB 15 systems provide significant savings in both initial equipment and long term operating costs. The automatic air flow control reduces the capacity requirements for both air conditioning equipment and for air filters. Gone are sluggish response, need for constant adjustments, and high maintenance of pressure controlled mechanical dampers. Options include an audible pressure loss alarm, time controlled air purge, filter alarm, and specific gas sensors.

(*) = Optional Feature

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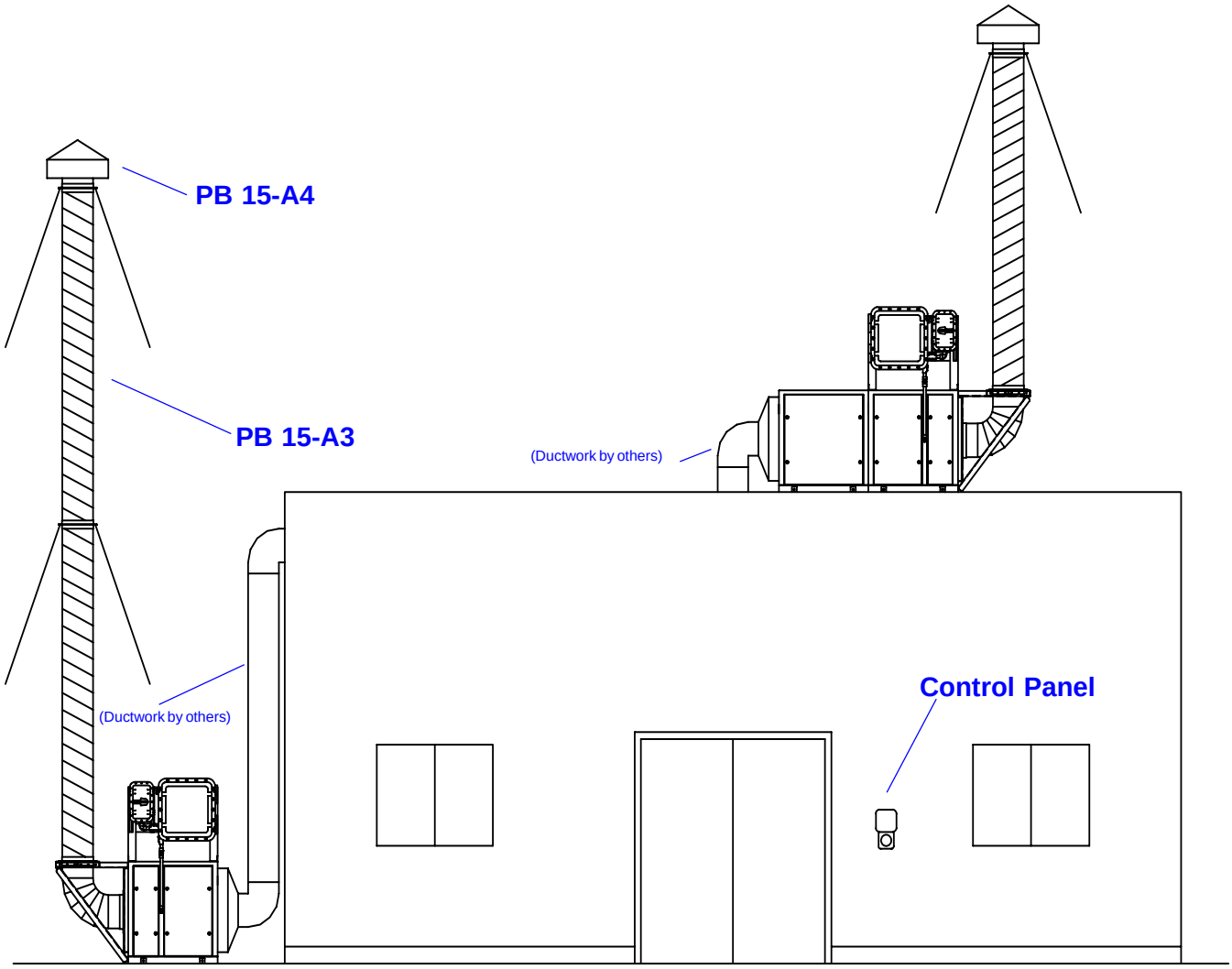
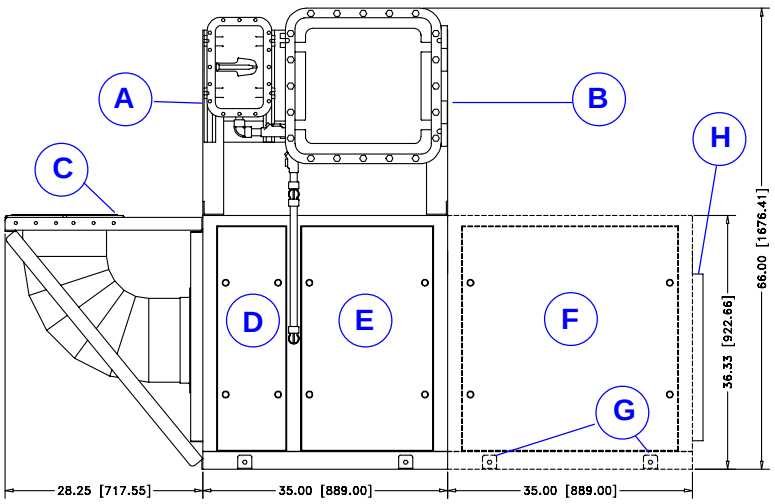
Ground Level or Roof Top Installations

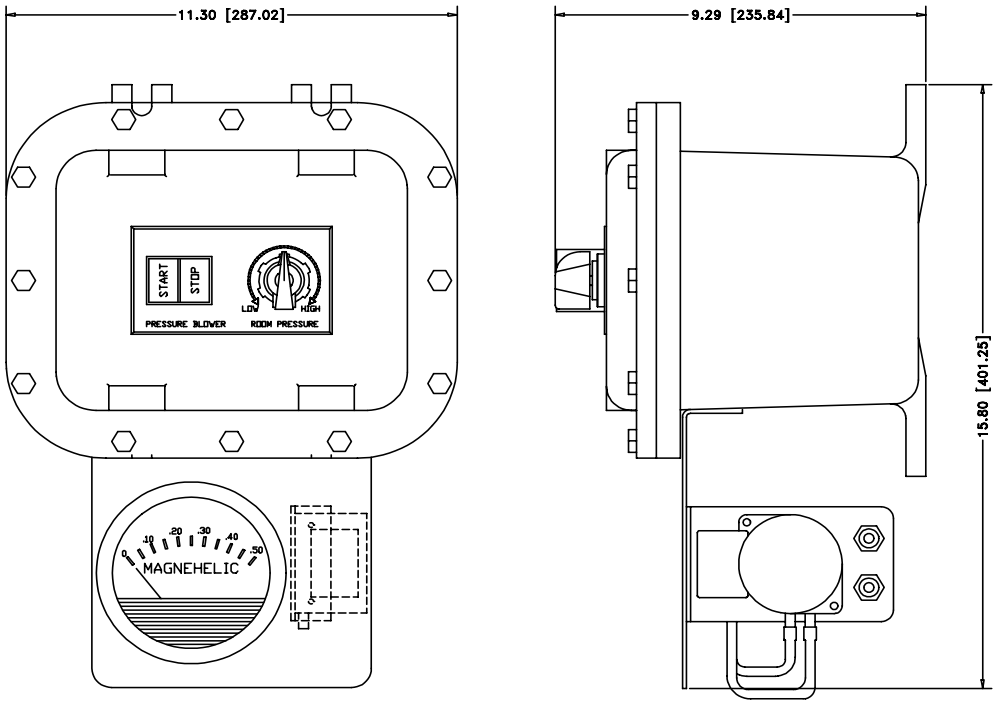




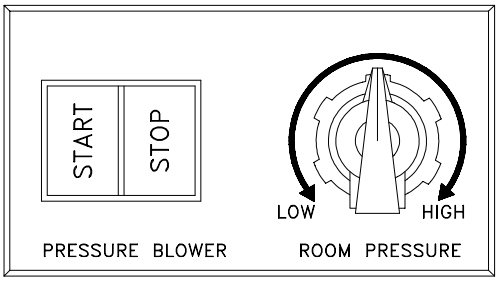
PB 15 Series Pressurize Blower with Filter Housing

A - Circuit Breaker Disconnect
B - Control Box
C.- Flanged Make-Up Air Stack Connection
D.- Prefilter Access Panel
E - Pressure Blower Access Panel
F - Modular Filter Housing for Carbon, HEPA or other Specialty Filters
G - Lifting Eyes
H.- Discharge Air Duct Flange

Preassembled Automatic Pressure Control System



The Control Housing is located inside the pressurized space. For explosion proof models the housing is NEMA 7, allowing safe purging of the conditioned space prior to initial room pressurization. Controls include a dual reference pressure sensor, a pressure indicating Magnehelic gauge, and start/stop controls for the blower. Pressure loss alarm contacts with adjustable alarm delay are standard. Contacts for computer control and monitoring are also available. An optional automatic switchover controller provides uninterrupted pressure maintenance in case of blower failure.



A Word About Filters for Corrosion, Odor and Dust Control

PB 15 Series Filter Housings can be supplied with a wide choice of specific filters for dust, odor and corrosion control. This includes particulate, carbon, modified carbon and oxidizing (permangenate) modules from several different suppliers. For specific requirements and recommendations please contact Applications Engineering for assistance.

Applying effective filter technology to achieve a desired level of air quality is one of our primary considerations. Unfortunately the process of selecting filter media has been plagued by a deluge of misinformation and sales "hype". In fact, several major manufacturers can supply excellent filter types and packings. The difference in filter material from various vendors often is only the name. It is therefore our policy that unless a customer expresses a preference for a specific filter vendor, we will select and incorporate the filter type and material we believe offers the best combination of performance and operating cost. Customers currently under contract to suppliers of carbon and modified carbon filters and corrosion monitoring services can continue to use their current suppliers. For best economy, customers and designers are cautioned not to specify filter modules available from only a single supplier.

PB 15 Series

Preassembled and Pretested
Pressurizing Blowers with Filter Housings

General

The system shall be Scientific Systems Corporation: Model No: _____ and shall be specifically designed for air pressurization and filtration in pressurized building spaces. The equipment shall conform to the requirements of NFPA 496, AMCA and the U.S. National Electric Code (NEC) and be suitable for service in hazardous locations under NEC Class _____, Group _____, Division _____. All mechanical items including the pressurizing blower(s), air filter(s) and filter housing(s) shall be preassembled as a unitized structure fabricated of 14 ga CRS (Optional: Type 316 stainless steel). Any carbon steel shall be protected by two-part epoxy paint primer followed by urethane topcoat (Optional: two-part epoxy with exterior urethane topcoat) coating. Paint systems shall be applied per manufacturer's recommendation. Any interconnecting ductwork shall be 18 Ga. galvanized (Optional: Type 316 stainless steel). Any electrical control components that are part of the assembly shall be inside electrical housings rated NEMA 4. Housings for explosion proof models shall also be rated NEMA 7(*). Explosion proof housing covers shall be hinged. All housings shall be installed for convenient access.

Indoor Controls

A separate control housing shall be supplied for installation inside the pressure controlled building . This housing shall be rated NEMA 7 (Optional: NEMA 2, NEMA 12). The control panel shall be preassembled, prewired and pretested with a room pressure sensor, pressure setting control, Magneheli pressure indicator, and Start/Stop Controls for the blower system. The controlled, positive pressure shall be adjustable over the range of 0.025 to 0.5" w.c. An optional additional selector switch shall allow the selection of "Cooling", "Fan Only", and (Optional: "Heating") modes.

Wiring

All wiring shall conform to the National Electric Code. Wire terminations shall have shrink type, machine imprinted wire markers. Identifying numbers and letters shall correspond with identification on wiring diagrams. All wiring shall be brought to terminal boards. Terminations shall have spade type connectors.

Blowers

The pressure blower shall be centrifugal, belt-driven type with variable pitch pulley. Blower housings on explosion proof models shall be spark proof, continuously heli-arc welded aluminum and shall have a corrosion protective finish per MIL-C-5541. Blower shall provide no less than 2600 CFM (Optional: _____CFM) @ 0.3" w.c. (Optional: _____"w.c.) user available external static pressure. A spare fan belt shall be provided. Blower speed shall be continuously modulated as a function of room pressure. The make-up air inlet side of the blower shall be equipped with a nominal 30" x 30" opening. (Optional: A fresh air duct adapter for connecting to a 12" o.d. (Optional: 18"o.d.) make-up air duct shall be provided. Adapter shall be structurally braced and suitable for supporting a minimum of 20' of supply duct).

Air Filter(s) **

A side access prefilter housing shall be an integral part of the assembly. Filter service shall not require any tools. Inlet side of filter assembly shall have 4" extended surface pleated panel filter(s) rated UL. Class I. (Optional: The following additional filters shall be installed in a modular filter housing located on the outlet side of the blower assembly. Housing shall be equipped with Filter Options: (A) 2" High Dust Loading with minimum 80% arrestance; (B) 4" 90-95% Average Efficiency (C) Type _____ Activated Carbon 2" Panel Filters with Particulate Post filters (D) Deep Bed _____ lb. Carbon Filter with Particulate Post filter. Access to all filters shall be by removal of cover plates equipped with quick opening compression latches.

Electrical

All equipment shall be rated for service under NEC Class __, Group _____, Division __. (Optional: An explosion proof circuit breaker / disconnect switch shall be factory installed and wired on the PBX module.) Electrical service of _____Volts _____Phase _____Hz and interconnections between Control Panel and Blower / Filter Assembly shall be by others.

Documentation

Vendor shall furnish detailed electrical, mechanical and dimensional CAD drawings. All wiring connections shall be numbered and cross referenced to wiring terminations. All components shall be clearly identified and cross referenced to computerized, priced parts list. A separate manual shall include all of the above documentation along with installation, operating and maintenance instructions. For models rated for hazardous service under Article 500 of the National Electric Code vendor shall provide a signed "Certificate of Conformance" attesting to compliance with the specified electrical classification.

(*) For NEC Class II equipment this rating is NEMA 9.
(**) Contact Applications Engineering Department for assistance and details.

EXPLOSION-PROOF BLOWERS

PB 15 Pressurizing Blowers with Filter Housings

How to Order

1.- Determine the **maximum** air flow required by the PB or PBX (explosion proof) pressure blower. NFPA 496 requires a **minimum of 60 feet per minute** across all door and other room openings
2.- Determine hazard classification outside of the pressurized structure, e.g. NEC Class I, Group D, Division 2.
3.- Determine the model number following the description below.
4.- Select additional options and accessories that may be required. Order these items separately. For systems requiring special particulate, chemical or carbon filters contact factory for computer sizing.
5.- For technical or pricing information contact your local representative or Sales Engineering at (800) 654-3857.

Model Number Description

PB(X) 15 - 2600 - VS - 12 - V - S - 1.1 - S - D - I D 2

Pressure Blower
Air Flow, CFM
(D) = Dual Blowers

Type Pressure Control
VS = Variable Speed
DC = Damper Controlled

Make Up Air Duct Flange
12 = Round, 12" OD
18 = Round, 18" OD
NA = Adapter Field Supplied
RS = Rain Shield only

Make-Up Air Duct
V = Vertical Access
H = Horizontal Access

Filter Type(s)
S = Standard
D = High Dirt
C = Carbon (Panels)
R = Carbon (Deep Bed)
H = HEPA
X = Special

Static Pressure
" W.C.

Control Option
S = Stand'd
X = Special

Voltage
B = 230/1/60
C = 208-230/3/60
D = 460V/3/60
X = Other (Specify)

Class
N = Not Expl. Proof
I = Class I
II = Class II

Group
N = Not Expl. Proof
C = Group C (Class I)
D = Group D (Class I)
E = Group E (Class II)
F = Group F (Class II)
G = Group G (Class II)

Division
N = Not Expl. Proof
1 = Division 1
2 = Division 2

Options and Accessories

Model	Description
PB 15-PFA	Modular Filter Housing Assembly, including initial filter charge (Contact Applications Engineering for Details)
PB EH(kw)	Electric Heat, (specify kw), with pressure interlock, available for Division 2 only
PB SH(BTUH)	Steam Heate, (specify BTUH), less trap or control solenoid (specify steam pressure)
PB 15-DSI	Disconnect Switch with Circuit Breaker, installed
PB 15-ASC-1	Automatic Switchover, Dual (redundant) Pressure Blowers only, w/disconnect and circuit breaker, installed
PB 15-A2	Replacement Dust Filters, 4" Pleated, for Inlet Air Filter Housing, Box of 3
PB 15-A9	Make-Up Air Stack Adapter, 90°, for connecting PB 20-A3 to make-up air inlet
PB 15-A3(__")	Make-up Air Duct, 12" or 18" O.D. (specify), flanged 10 ft section, with flange bolts
PB 15-A4	Rain cap Protective Air Inlet Cover, with bird screen and hardware, for connection to PB 20-A3
PB 15-A5	Alarm Horn, connects to built-in alarm contacts to signal pressure loss
PB 15-A6	Automatic Purge Control, timed purge provides adjustable delay period
PB 15-A7	Barometric Control Damper, wall mount, for use with 'DC' pressure control option
PB 15-11	Full Corrosion Protection: Sheet Metal Parts Protected with Epoxy Paint
PB-15-98	Smoke Detector, Explosion Proof, installed with system interlock
PB 15-99	Gas Detector (specify gas and concentration), installed with system interlock

Your Representative is:

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