PE SERIES

Compressed Air Filters

PE Filter

Cross section of the Particulate Filter Elements

The PE Particle Filter Element removes the solid contaminants in gases as a prefilter or post filter.

Aircel PE elements contain highly porous sinter polyethylene filter media. Even the finest dust particles and other contaminants in compressed air and gases are being removed effectively on the surface and in the depth of the filter medium.

By utilizing various filtration mechanisms such as direct impaction and mechanical sieving, particles are retained 100% in gases related to the element pore size.

PE Series Features

- Filter surface 5.5 in2 (0205) up to 480 in2 3050)
- Void volume – porosity grade +45%
- Permanent temperature range -4°F up to +176°F
- Removal of contaminants down to 5 µm
- Regenerative

PE Series Benefits

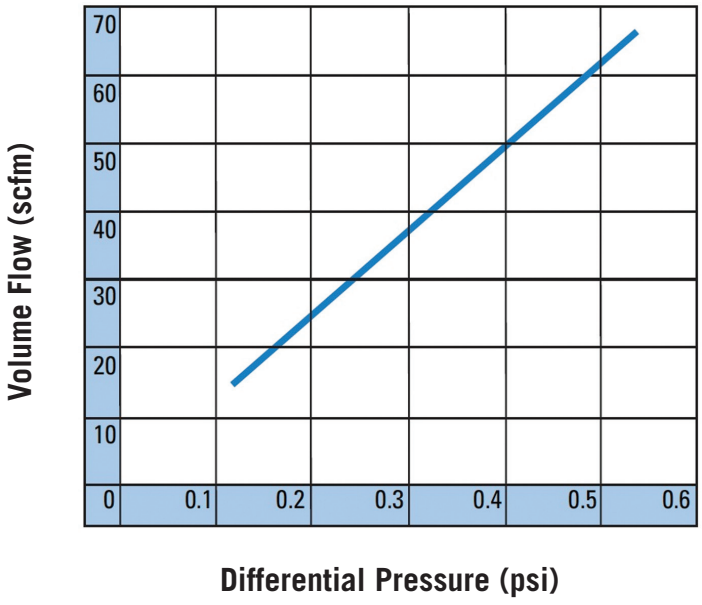
- Suitable for a wide range of applications and flow rates
- High dirt holding capacity; lower differential pressure
- Broad application range
- Guaranteed retention grade
- Economical, longer service lifetime

PE Series Applications

- Chemical
- Petrochemical
- Pharmaceutical
- Plastics
- Food
- Beverage
- General Machine Fabrication
- Instrumentation and Control Air

PE SERIES
Compressed Air Performance

These curves define the flow of a 1030 filter element at standard conditions (14.7 psia; 68°F; R.H.= 70%)



The performance curve is based on 1030 element, or one ten inch equivalent (TIE), and the correction factor for filter surface Cf for a 1030 = 1.00.

PE SERIES
TECHNICAL SPECIFICATIONS

PE Model Comparison

Specifications

Retention Rate: 100% in gases; defined rate of particles larger than the pore size
Maximum Differential Pressure: 30 psi at 68°F regardless of system pressure
Initial Differential Pressure at Nominal Flow: 0.44 psi

Materials

Filter Medium: Pure high molecular polyethylene
Bonding: Epoxy resin
End Caps: Aluminum
Two O-Rings: Perbunan – Siliconfree and free of parting compound (standard)

Pressure Drop Calculations

Element-Type	Correction factor Filter surface CF
0205	0.08
0305	0.10
0310	0.12
0410	0.17
0420	0.19
0520	0.25
0525	0.32
0725	0.47
0730	0.68
1030	1.00
1530	1.55
2030	2.10
3030	3.20
3050	5.65

Example 1: Low Flow Single Element

Given: • Flow rate = 12 scfm • Pressure = 80 psig
• Using AG0002 (1–0205 MF Element)
1. Convert flow given from standard cubic feet per minute to actual cubic feet per minute
   - 12 scfm x (14.7 psia / 94.7 psia) = 1.86 acfm (through the housing and element)
2. Divide by the correction factor
   - 1.86 / 0.08 = 23.25 acfm (through each TIE)
3. Pressure drop through this element = 0.29 psid

Example 2: High Flow Multiple Element

Given: • Flow rate = 15,000 scfm • Pressure = 150 psig
• Using SH2200 (27 - 3030 SMF Element)
1. Convert flow given from standard cubic feet per minute to actual cubic feet per minute
   - 15,500 scfm x (14.7 psia / 164.7 psia) = 1,383 acfm (through the housing)
2. Divide by number of elements
   - 1,383 / 27 = 51.2 acfm (through each element)
3. Divide by correction factor
   - 51.2 / 3.20 = 16 acfm (through each TIE)
4. Pressure drop through these elements = 0.125 psid

Due to a continuous program of product improvement, specification and dimensions are subject to change without notice.

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