

Del-Monox[®] Breathing Air Purifiers

DM SERIES



Since 1961, Deltech has delivered products engineered to efficiently remove contaminants from compressed air systems across multiple applications. Moving forward our designs have advanced, employing the latest in filtration and dehydration technology. Today, Deltech prides itself on being a leader in the compressed air industry known for scope of product offering and superior performance capabilities.

Based in Charlotte, North Carolina, SPX FLOW is a leading global supplier of highly engineered flow components, process equipment and turn-key systems, along with the related aftermarket parts and services, into the food and beverage, power and energy and industrial end markets. SPX FLOW has more than \$2 billion in annual revenues and approximately 8,000 employees with operations in over 35 countries and sales in over 150 countries around the world. To learn more about SPX FLOW, please visit our website at www.spxflow.com

Del-Monox® Breathing Air Purifiers...

TIME-PROVEN RELIABILITY

In 1966, Deltech introduced the industry's first engineered, contaminant removing system to convert compressed air to safe breathing air. Over time, the designs have advanced employing the latest in filtration and dehydration technology. Today, Deltech is the most respected brand name in breathing air purification around the world.

SAFETY IN THE WORK PLACE

Maintain Health and Safety Requirements

The DM Series delivers breathing air quality in accordance to international standards.

OSHA: CFR1910.134 (Occupational Safety & Health Association)

CSA: Z180.1-13 (Canadian Standards Association)

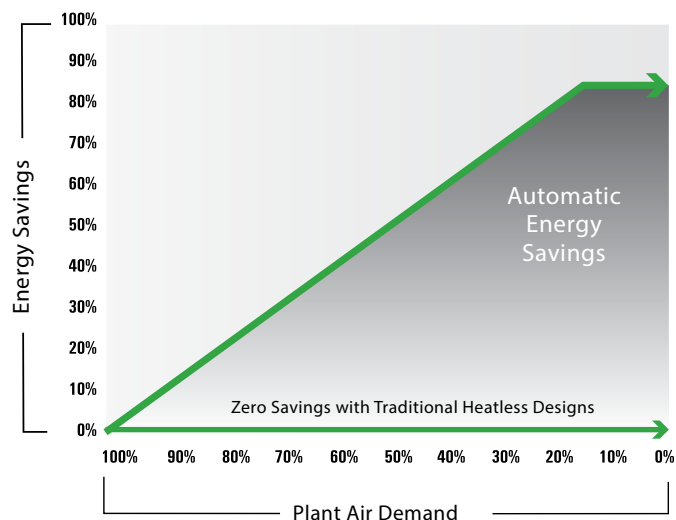
CGA: G-7 (Compressed Gas Association)

ANSI: Z88.2-1080 (American National Standards Institute)

Environmental safety standards mandate the need for a suitable air supply to ensure worker safety. Del-Monox Breathing Air Purifiers enable industries to meet required standards.

OPTIONAL ENERGY MANAGEMENT SYSTEM

The optional energy management system automatically matches purge air requirements to real time load on the dryer. When operating at reduced capacity, the on-line drying tower remains active until the full drying capacity of the desiccant material is utilized. Each tower is precisely controlled to manage drying times to reduce purge air consumption.



Applications

PETROCHEMICAL

The oil and gas industries select DM Series breathing air purifiers to protect workers from the inhalation of hazardous fumes, gases, and vapors inherent in the manufacturing process.

ASBESTOS ABATEMENT

Asbestos was a commonly used insulation material for old dwellings. DM Series Breathing Air Purifiers provide suitable breathing air to workers in asbestos abatement applications.

PAINT SPRAY

Automotive body shops utilize atomized paint to spray vehicles. Workers exposed to airborne paint emissions benefit from DM Series Breathing Air Purifiers.

PROTECTIVE COATINGS

Manufacturers utilize compressed air to apply protective coatings. Airborne compounds will not adversely affect workers when respiratory air is supplied with DM Series Breathing Air Purifiers.

CONFINED SPACES

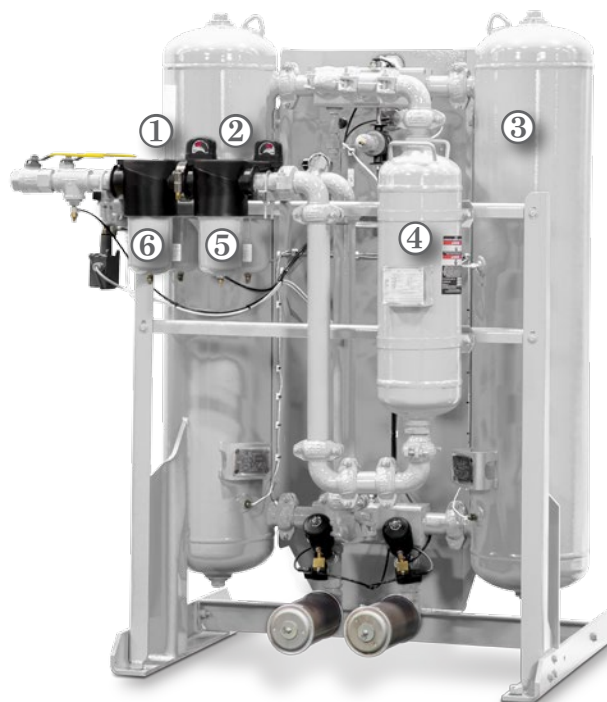
The quality of breathing is critical in confined space industries. Mining, vats, tanks, boilers, ships' hulls, and grain storage facilities are environments with stale, contaminated air that is unsuitable for breathing.



Optimal Performance and Operation...

SIX STAGE FILTRATION

- Stage 1** General purpose filter removes solid and liquid contaminants down to 1.0 micron
- Stage 2** High efficiency oil removal filter captures liquid aerosols and sub-micronic particles down 0.01 micron
- Stage 3** Pressure-swing regenerative desiccant dryer removes water vapor to ensure the effectiveness of the catalyst bed
- Stage 4** Dried air travels through a catalytic converter reducing CO concentrations by converting CO to CO₂
- Stage 5** Particulate removal filter collects contaminants 1.0 micron and larger from the purified air stream
- Stage 6** Activated carbon filter removes oil vapor, trace odors and other gases normally absorbable by activated carbon



For Quality Breathing Air...

PURIFICATION CAPABILITIES

Excessive contamination of compressor intake air will adversely affect performance of the purifier.

Del-Monox® Breathing Air Purifiers remove moisture, solid particles, oil aerosols and mists, carbon monoxide, and hydrocarbon vapors commonly present in compressed air. The resulting air can be safely used by supplied-air breathing devices such as masks, hoods and helmets.

| CONTAMINANTS | MAXIMUM ALLOWABLE CONCENTRATION ¹ | | PURIFIER OUTLET RATED CONDITIONS |
|---|--|-----|----------------------------------|
| | OSHA ¹ | CSA | |
| Carbon Monoxide (CO) | 10 | 5 | 95% Conversion ⁵ |
| Carbon Dioxide (CO₂) | 1000 | 600 | ² |
| Oil (Condensed Hydrocarbons) | 5 | 1 | 0 |
| Oil Vapor (Gaseous Hydrocarbons) | — | — | <.02 ³ |
| Odor | Lack of noticeable odor | | — ⁴ |

¹ OSHA Standard references CGA (Compressed Gas Association) pamphlet G-7.1, Grade D and is generally consistent with those published by ANSI

² CO is converted to CO₂ by the purifier and added to the concentration of CO₂ already present (normal atmospheric air contains 314 PPM of CO₂) Although some CO₂ is absorbed in the desiccant beds, high concentrations of CO in the system and/or high concentrations of CO₂ at the compressor intake could result in exceeding allowable CO₂ limits

³ Will remove only those gaseous hydrocarbons normally adsorbed by activated carbon. Outlet concentration is expressed as methane equivalent, activated carbon will not remove methane

⁴ Will remove only those odors normally adsorbed by activated carbon

⁵ 95% Conversion example (200 PPM @ inlet = 10 PPM @ outlet)

Features and Options

FILTRATION & MONITORING

- Pre-filtration removes solids and oils
- After-filters collect remaining particles and adsorb vapor
- CO catalyst converter
- Air sample ports for optional analyzer installation

MOISTURE INDICATOR

- Visual color change

PRESSURE GAUGES

- Left / right tower
- Inlet / outlet purifier
- Purge pressure

STANDARD CONTROLLER

- NEMA 4/4X with critical LED indicators
- Soft on / off switch with two power recovery modes
- Switching failure alarms
- Adjustable service indications
- Tower / valve status LEDs
- Voltage free common alarm contacts
- RS-232 communications port

OPTIONS

- Nema 7 electrical rating
- Copper, brass or stainless steel instrument tubing and fittings
- Breathing air analyzers
- Advanced Level -2 Controls:
 - Vacuum fluorescent text display
 - Automatic energy savings
 - Calibration-free temperature sensors
 - High inlet temperature & low inlet pressure alarms

Breathing Air Analyzers

OSHA maximum concentrations for breathing air:

- 10 PPM of Carbon Monoxide (CO)
- 1,000 PPM of Carbon Dioxide (CO₂)
- 5 mg/m³ Oil (Condensed Hydrocarbons)

Breathing air system performance is subject to excessive intake of air contaminants. It is important that breathing air systems are routinely monitored for proper operation. The DM Series Breathing Air Purifier can be monitored using several air analyzing options.

Carbon Monoxide (CO) Monitor

Recommended

- Digital readout of CO concentration
- Visual and audible alarm
- Contacts for remote alarm
- Push-to-test button
- Alarm silence switch
- Simple calibration
- Adjustable high & low alarms with indication



Analyzer Choices:

Additional Options

- Multiple alarm capabilities
 - » CO & oxygen
 - » CO & dew point
 - » CO, oxygen & dew point



DM Series Specifications...

OPTIMIZING CAPACITY

Breathing air produced by a Breathing Air Purifier system can supply various levels of use. To select a DM Series purifier, first determine the air pressure at the purifier inlet and the maximum breathing air flow required at a given time. The chart below illustrates an example of DM Series estimated capacities based on 6-15 scfm (10-25 m³/h) per hood, helmet or suits as calculated in the sizing table.

| MODELS | DM 15 | DM 25 | DM 35 | DM 50 | DM 75 | DM 95 | DM 135 | DM 205 | DM 305 | DM 375 | DM 625 | DM 775 | DM 940 |
|------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| Minimum Capacity | 1 | 2 | 2 | 3 | 5 | 6 | 9 | 14 | 20 | 25 | 42 | 52 | 63 |
| Maximum Capacity | 2 | 4 | 6 | 8 | 13 | 16 | 23 | 34 | 51 | 63 | 104 | 129 | 157 |

* Contact hood manufacturer for actual capacity before sizing purifier.

MODEL SPECIFICATIONS

| MODEL | INLET FLOW¹ | | OUTLET FLOW¹ | | VOLTAGES | IN/OUT CONNECTIONS | DIMENSIONS | | | | | | WEIGHT | |
|--------|-------------|-------|--------------|-------|---|--------------------|------------|------|----|------|----|------|--------|------|
| | SCFM | NM³/H | SCFM | NM³/H | | | H | | W | | D | | LBS | KG |
| | | | | | V/PH/HZ | IN | IN | MM | IN | MM | IN | MM | | |
| DM 15 | 18 | 31 | 15 | 26 | 85-264/1/ 47-63 AC 11.5-28 V DC | 1 NPT | 49 | 1244 | 42 | 1067 | 35 | 889 | 440 | 200 |
| DM 25 | 30 | 51 | 25 | 42 | | 1 NPT | 49 | 1244 | 42 | 1067 | 35 | 889 | 450 | 204 |
| DM 35 | 42 | 71 | 35 | 59 | | 1 NPT | 49 | 1244 | 42 | 1067 | 35 | 889 | 455 | 206 |
| DM 50 | 60 | 102 | 50 | 85 | | 1 NPT | 64 | 1615 | 43 | 1097 | 38 | 962 | 560 | 254 |
| DM 75 | 90 | 153 | 75 | 127 | | 1 NPT | 79 | 2006 | 43 | 1097 | 35 | 889 | 700 | 318 |
| DM 95 | 114 | 194 | 95 | 161 | | 1 NPT | 56 | 1443 | 50 | 1270 | 45 | 1137 | 820 | 372 |
| DM 135 | 162 | 275 | 135 | 229 | | 1 NPT | 56 | 1443 | 53 | 1356 | 43 | 1092 | 820 | 372 |
| DM 205 | 246 | 418 | 205 | 348 | | 1.5 NPT | 75 | 1905 | 62 | 1575 | 45 | 1143 | 1190 | 540 |
| DM 305 | 366 | 622 | 305 | 518 | | 2 NPT | 65 | 1651 | 66 | 1674 | 52 | 1327 | 1405 | 637 |
| DM 375 | 450 | 765 | 375 | 637 | | 2 NPT | 74 | 1871 | 67 | 1702 | 52 | 1330 | 1560 | 708 |
| DM 490 | 590 | 1002 | 490 | 833 | | 2 NPT | 103 | 2616 | 55 | 1397 | 69 | 1753 | 1650 | 748 |
| DM 625 | 750 | 1274 | 625 | 1062 | | 2 NPT | 107 | 2718 | 62 | 1575 | 75 | 1905 | 2800 | 1270 |
| DM 775 | 930 | 1580 | 775 | 1317 | | 3 FLG | 112 | 2845 | 62 | 1575 | 83 | 2108 | 3275 | 1486 |
| DM 940 | 1130 | 1920 | 940 | 1597 | | 3 FLG | 115 | 2921 | 66 | 1676 | 82 | 2083 | 3750 | 1701 |

¹ Flow capacity rated at CAGI conditions: 100 psig (7.0 bar) and 100°F (38°C) saturated inlet

REPLACEMENT FILTER ELEMENTS

| MODEL | PREFILTERS | | CATALYST | AFTERFILTERS | |
|--------|-------------|-------------|-----------|--------------|----------|
| | P3 | U3 | CARTRIDGE | P3 | C3 |
| DM 15 | 302-P3-DG1 | 302-U3-DG1 | CC0 | 302-P3-TG1 | 302-C3-T |
| DM 25 | 303-P3-DG1 | 303-U3-DG1 | CC0 | 303-P3-TG1 | 303-C3-T |
| DM 35 | 304-P3-DG1 | 304-U3-DG1 | CC0 | 304-P3-TG1 | 304-C3-T |
| DM 50 | 306-P3-DG1 | 306-U3-DG1 | CC1 | 306-P3-TG1 | 306-C3-T |
| DM 75 | 307-P3-DG1 | 307-U3-DG1 | CC1 | 307-P3-TG1 | 307-C3-T |
| DM 95 | 308-P3-DG1 | 308-U3-DG1 | CC2 | 308-P3-TG1 | 308-C3-T |
| DM 135 | 310-P3-DG1 | 310-U3-DG1 | CC2 | 310-P3-TG1 | 310-C3-T |
| DM 205 | 310-P3-DG1 | 310-U3-DG1 | CC3 | 310-P3-TG1 | 310-C3-T |
| DM 305 | 312-P3-DG1 | 312-U3-DG1 | CC4 | 312-P3-TG1 | 312-C3-T |
| DM 375 | 313-P3-DG1 | 313-U3-DG1 | CC5 | 313-P3-TG1 | 313-C3-T |
| DM 490 | 314-P3-Z2G1 | 314-U3-Z2G1 | CC6 | 314-P3-G1 | 314-C3 |
| DM 625 | 314-P3-Z2G1 | 314-U3-Z2G1 | CC7 | 314-P3-G1 | 314-C3 |
| DM 775 | 315-P3-Z2G1 | 315-U3-Z2G1 | CC8 | 315-P3-G1 | 315-C3 |
| DM 940 | 316-P3-Z2G1 | 316-U3-Z2G1 | CC9 | 316-P3-G1 | 316-C3 |

CAPACITY CORRECTION FACTORS

Inlet Pressure

| PSIG | BAR | 100°F 38°C | 105°F 40°C | 110°F 43°C | 115°F 46°C | 120°F 49°C |
|------|------|---------------|---------------|---------------|---------------|---------------|
| 60 | 4.2 | 0.65 | 0.64 | 0.62 | 0.6 | 0.58 |
| 70 | 4.9 | 0.74 | 0.73 | 0.71 | 0.69 | 0.66 |
| 80 | 5.6 | 0.83 | 0.81 | 0.8 | 0.77 | 0.74 |
| 90 | 6.3 | 0.91 | 0.89 | 0.87 | 0.85 | 0.81 |
| 100 | 7 | 1 | 0.98 | 0.96 | 0.93 | 0.89 |
| 110 | 7.7 | 1.04 | 1.02 | 1 | 0.97 | 0.93 |
| 120 | 8.4 | 1.08 | 1.06 | 1.04 | 1 | 0.96 |
| 130 | 9.1 | 1.12 | 1.1 | 1.08 | 1.04 | 1 |
| 140 | 9.8 | 1.16 | 1.14 | 1.11 | 1.08 | 1.03 |
| 150 | 10.5 | 1.2 | 1.18 | 1.15 | 1.12 | 1.07 |

CAPACITY CORRECTION FACTORS

To adjust capacity for conditions other than rated, use the correction factors (multipliers) for inlet air temperature and pressure shown below.

Example: What is the capacity of a 205 scfm (348 nm³/h) model when the compressed air at the inlet is 130 psig (9 bar) and 110°F (43°C)?

Answer: 205 scfm (348 nm³/h) (rated flow from Product Specifications Table) x 1.08 (correction factor for inlet air temperature and pressure) = 221 scfm (375 nm³/h)

DM SERIES

15 to 940 SCFM (26-1597 NM³/H)



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