numatics®

UltraDry™ Membrane Dryers

We're everywhere you need us to be!

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The UltraDry™ membrane dryer has established itself as the modern alternative to refrigerant or adsorption drying of compressed air. From manufacturing or process industries to high technology and medical/surgical applications, UltraDry™ offers many advantages over traditional methods. UltraDry™'s capacity profile is suited perfectly for year-round dry and humidity control. The UltraDry™ membrane dryer adjusts to climatic conditions and always creates stable relative humidity and, as a result, acheives a constant drying rate.

UltraDry™ is therefore particularly attractive for applications where clean, very dry air is a must - i.e. coordinate measuring machines, blow molding, medical packaging, air gauging, leak testing, and many others. UltraDry™ insures the quality of the compressed air and protects the user regardless of application or season. Different relative humidity levels can be selected to match the user's site conditions and air flows - even providing less than 3% relative humidity for the most demanding application.

Features

UltraDry™ can be used anywhere that moisture occurs in a line network and end use points, where high quality compressed air, reliability, and operational user safety are required. UltraDry™ assures a complete solution of quality, performance, and extended operation.

Performance Spectrum

- For effective drying of volumetric flows from 2 to 45 SCFM
- For partial flow drying, point-of-use drying, high quality applications, or direct attachment to the compressor
- Uses a highly selective membrane, therefore no reduction in oxygen content of the compressed air
- Ideal for processing breathing air

Reliable Function, Dry Compressed Air Guaranteed

- Continuous process assures high quality compressed air
- Reliable pressure dewpoint lowering and maintenance of desired relative humidity
- No water in air lines

Minimum Space Requirements, No Electrical System

- Compact design, low weight
- Robust aluminum heads with corrosion resistant surface coating
- All controls are included
- No electrical connection necessary
- Suitable for hazardous areas, remote applications, or power-interrupted locations

Easy to Install - Everywhere

- Connection adapters enable vertical or horizontal installation
- Pivoting ports
- All installation positions possible
- Retrofits in existing space conditions of the compressed air system Immediately ready for operation, low energy consumption
- Dry compressed air is immediately available - anytime
- No start-up phase
- Low purge demand

Absolutely Environmentally Friendly and Maintenance Free

- Does not use CFCs/FCs or other potentially dangerous materials
- No dessicant to replace
- Low noise level (< 40 dBA)
- No maintenance required, only regular changing of Numatics prefilter and coalescing filter elements

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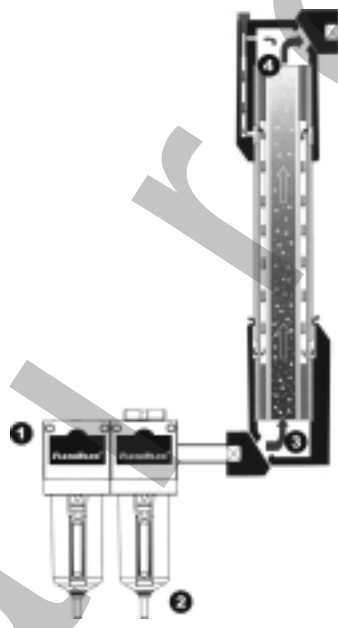
UltraDry™ Membrane Air Dryer

How UltraDry™ Works

The multi-step concept forms the basis for high quality compressed air created in a particularly economic way:

1. The Numatics particulate/coalescing filters capture dirt particles, oil mist and condensate before they reach the dryer.
2. The condensate (oil & water) is discharged from the filters using automatic float drain while dirt, rust, and scale are trapped in the filter element.
3. The filtered, moist compressed air enters the UltraDry™ membrane dryer and flows through a bundle of highly-selective, hollow fiber membranes (shown by a single hollow fiber in the figure). Only water vapor diffuses through the membranes while dry compressed air travels to the outlet end of the module.
4. At the outlet of the UltraDry™ module, a partial flow of the dried, compressed air is diverted through a nozzle and released. The relative humidity of this “sweep” air drops drastically as a result of the release. The sweep air flows over the outer surface of the hollow fibers. It then absorbs the condensate from the outside of the fiber and takes it away. The compressed air is dried and free of liquid condensate.



Specifications

Max. temperature compressed air	140ºF (60ºC)
Ambient temperature	35ºF (1.7ºC) to 140ºF (60ºC)
Max. pressure	185 PSI (12.8 bar)
Pressure differential	.7 - 4.4 PSI (0.05-0.30 bar)
Prefilter	5 micron
Coalescing filter	.3 micron
Noise level	< 45 dB (A)
Installation position	as desired

Purge air consumption (in %) at nominal capacity

“A” Efficiency: PDP - lowering to 50ºF (10ºC)	app. 13%
“B” Efficiency: PDP - lowering to 32ºF (0ºC)	app. 16%
“C” Efficiency: PDP - lowering to 20ºF (-6.7ºC)	app. 20%
“D” Efficiency: PDP - lowering to 0ºF (-17.8ºC)	app. 24%

Flow Data

MODEL	INLET SCFM BASED ON EFFICIENCY RATING*				WEIGHT, lbs (kg)
	A	B	C	D	
122	1.9	1.1	0.62	0.31	2.0 (0.75)
164	3.3	1.9	1.15	0.46	5.3 (2.0)
241	14.0	10.3	6.4	3.4	8.8 (3.3)
244	7.5	4.7	2.95	1.5	6.4 (2.4)
339	10.3	6.3	5.1	2.8	7.3 (2.7)
350	23.5	15.6	10.7	6.1	10.6 (4.0)
355	33.6	20.7	15.5	9.1	14.5 (5.4)
441	-	36.2	24.6	14.5	16.5 (6.2)
445	-	45.1	36.2	24.1	30.8 (11.5)

*Must deduct purge air consumption to get outlet flow.

How to Order

UAM 244 - B F

Model
122
164
241
244
339
350
355
441
445

Threads
- = NPTF
G = G Tap (BSPP)
R = PT (BSPT)

Filtration
F = Filtration Package (Includes 2 Year Warranty)

Efficiency
A = 50° F (28° C) Reduction
B = 68° F (38° C) Reduction
C = 80° F (45° C) Reduction
D = 100° F (56° C) Reduction

Notes:
• Efficiency, flows and purge rates based on 100 PSI inlet and pressure dew point of 100ºF (38ºC)

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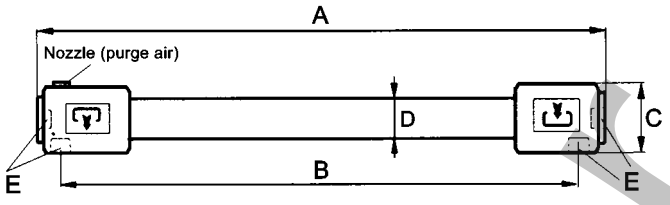
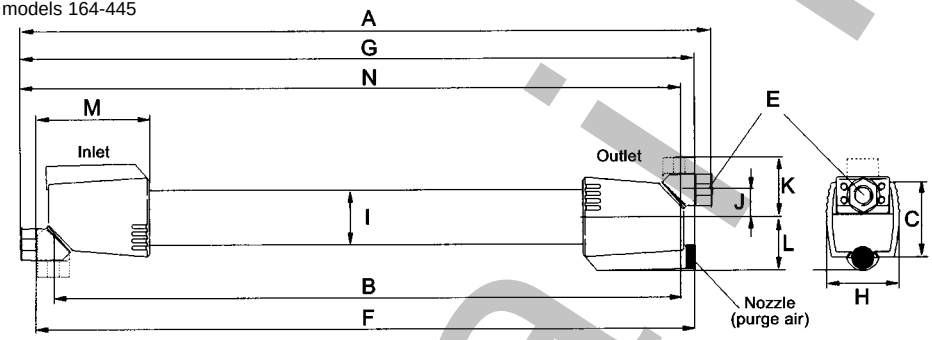
UltraDry Membrane Dryer – Dimensions in inches (millimeters in parenthesis)

model 122



models 164-445

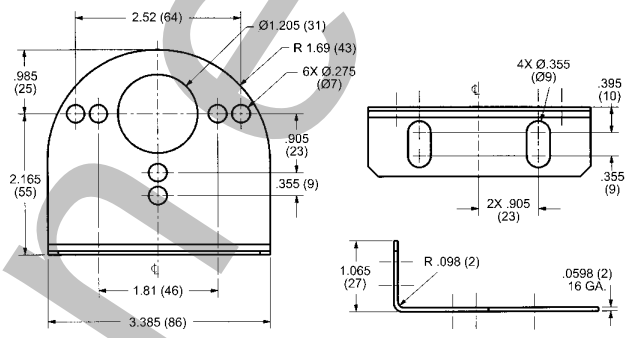


MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N
122	12.2 (310)	11.0 (279)	1.8 (46)	1.1 (28)	1/4	-	-	-	-	-	-	-	-	-
164	16.4 (417)	14.0 (356)	2.2 (56)	-	1/4	15.2 (386)	15.2 (401)	2.2 (56)	1.3 (33)	0.5 (13)	1.7 (43)	1.2 (30)	3.5 (89)	15.2 (386)
241	24.1 (610)	21.7(551)	2.8 (71)	-	1/2	22.8 (579)	23.5 (597)	2.4 (61)	1.9 (48)	0.8 (20)	2.0 (51)	1.6 (41)	4.0 (102)	22.9 (582)
244	24.4 (620)	22.0 (559)	2.2 (56)	-	1/4	23.1 (587)	23.8 (605)	2.2 (56)	1.3 (33)	0.5 (13)	1.7 (43)	1.2 (30)	3.5 (89)	23.2 (589)
339	33.9 (861)	31.5 (800)	2.2 (56)	-	1/4	32.6 (828)	33.3 (846)	2.2 (56)	1.3 (33)	0.5 (13)	1.7 (43)	1.2 (30)	3.5 (89)	32.7 (831)
350	35.0 (889)	32.7 (831)	2.8 (71)	-	1/2	33.8 (859)	34.4 (874)	2.4 (61)	1.9 (48)	0.8 (20)	2.0 (51)	1.6 (41)	4.0 (102)	33.9 (861)
355	35.5 (902)	33.1 (841)	3.3 (84)	-	1/2	34.3 (871)	35.7 (907)	3.0 (76)	2.4 (61)	1.0 (25)	2.2 (56)	1.8 (46)	4.2 (107)	34.3 (871)
441	44.1 (1120)	41.7 (1059)	3.3 (84)	-	1/2	42.9 (1090)	43.5 (1105)	3.0 (76)	2.4 (61)	1.0 (25)	2.2 (56)	1.8 (46)	4.2 (107)	43 (1092)
445	44.5 (1130)	42.0 (1066)	4.5 (114)	-	3/4	43.5 (1105)	44.0 (1118)	4.1 (104)	3.5 (89)	1.5 (38)	2.8 (71)	2.4 (61)	5.5 (140)	43.3 (1100)

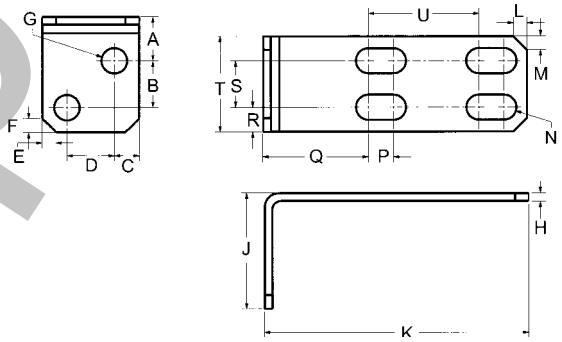
Mounting Brackets

Included with each membrane dryer (dimensions in inches; millimeters in parenthesis)

BRK122
for models UAM122



BRK164
for models UAM164, UAM244, and UAM339
and BRK350
for models UAM241, UAM350, UAM255, UAM441, and UAM445



	BRK164	BRK350
A	0.55 (14)	0.63 (16)
B	0.435 (11)	0.67 (17)
C	0.275 (6)	0.355 (9)
D	0.435 (11)	0.67 (17)
E	0.118 (3)	0.197 (5)
F	0.118 (3)	0.197 (5)
G	2X Ø .256 (7)	2X Ø .355 (9)
H	0.118 (3)	0.118 (3)
J	1.26 (32)	1.655 (42)
K	2.755 (70)	3.78 (96)
L	0.118 (3)	0.197 (5)
M	0.118 (3)	0.197 (5)
N	8X Ø .26 (7)	8X Ø .35 (9)
P	4X Ø.255 (7)	4X Ø .355 (9)
Q	0.98 (25)	1.515 (38)
R	0.28 (7)	3.55 (90)
S	0.43 (11)	0.67 (17)
T	0.985 (25)	1.38 (35)
U	1.26 (32)	1.575 (40)