

DISCLAIMER

The performance characteristics of the products described in this catalog are only examples of measurements and are not guaranteed. If using our products in operating conditions outside those given in this catalog, determining suitability is the responsibility of the user, notwithstanding examples of test results or data obtained under similar operating conditions provided by AGC ENGINEERING. Any material provided by AGC ENGINEERING is for reference only, and application is subject to the user's own judgment and responsibility.

AGC

Warranty and Limited Warranty Terms and Conditions

AGC ENGINEERING Co., Ltd. warrants all of its products to be free from defects in materials and workmanship for a period of one year after the date of delivery, provided the use, installation, application, maintenance, and storage of the products are in accordance with the specifications and description in the instruction manuals and catalogs provided by AGC ENGINEERING.

Under this warranty, the obligation of AGC ENGINEERING to provide compensation for any defect is limited only to repairing or replacing the defective product at the discretion of AGC ENGINEERING, and only if the defective product is returned unaltered to AGC ENGINEERING and the defect can be verified by AGC ENGINEERING.

Any claim shall be presented to and processed by AGC ENGINEERING's established claim procedure.

AGC ENGINEERING reserves the right to discontinue manufacturing any products, or to change materials, design, and specifications without prior notice.

Except for the above warranty, AGC ENGINEERING makes no warranties written, expressed or implied.

Warning to System Designers and End Users

To prevent danger or injury resulting from improper use of our products, system designers and end users must read the following precautions carefully before designing, installing, and using the system into which our products are being incorporated. All of our products must be designed, installed, and used to comply with the specifications and the description in the instruction manuals and catalogs. System designers and end users must read the warnings described in the instruction manual shipped with our product carefully. System designers are obliged to provide information on our products and warnings to end users, to help them properly understand how to use our products safely.

Under certain circumstances, normal operation of a device is prevented by improper use, malfunction, or the device's life span. Users of our products should take this into consideration in application, intended use, system design, installation, and operation, and should provide an adequate safeguard to protect life and property even in the event of a malfunction or deterioration of product fluid.

In the instruction manual of the system, the system designer should provide all end users with a warning that malfunction is still possible even if the system is carefully designed.

Under no circumstances should our products be used for life support devices, vehicle control devices, aircraft, or other devices that have the potential to pose a serious hazard to life and property.

Before attempting to connect, disconnect, replace, or repair our product, all system lines supplying fluid or energy to our products must be shut off or removed. Repair is subject to the procedures previously recommended by AGC ENGINEERING.

Our products are designed for industrial systems. For nonindustrial applications and other applications beyond AGC ENGINEERING specifications with respect to temperature, pressure, flow rate, and fluid, please consult your distributor.

The specifications published in this catalog are subject to change without notification and the data published in this catalog are for reference purposes only and do not represent a guarantee of product performance. The formal specification sheets will be submitted on request.

- 本カタログ記載の仕様は改良のため予告なく変更される場合がありますので、あらかじめご了承下さい。
又、本カタログ記載データはあくまでも参考値であり製品を保証するものではありません。
ご要望により正規仕様書を提出致します。

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⚠ 安全に関するご注意 Safety Warning

ご使用にあたっては、本製品に付属する取扱説明書の注意事項を必ず守ってください。

Please be sure to read and observe the cautions printed in the instruction brochures supplied with these products when you use them.

ENVIRONMAINTENANCE Company

AGC

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AGC ENGINEERING CO., LTD.

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MEMBRANE TYPE DRYER 膜式ドライヤー

SUNSEP™

サンセップ®



SUNSEP™

膜式ドライヤー MEMBRANE TYPE DRYER

サンセップ®はAGC旭硝子が開発したフッ素系高分子樹脂 "フレミオン®" を用いた製品です。
 sunsep™ utilizes Flemion™, a fluorine-containing polymer developed by Asahi Glass Company (AGC).

水と空気 地球になくてはならない大切なものです。しかし、水は扱い次第で災いのもとにもなります。サンセップ®はさまざまな産業分野において、水分トラブルでお困りのお客様へ優れた解決策を提供し、浪費コストの低減をお約束します。

Both water and air are precious resources, but humidity can occasionally cause problems. sunsep™ offers an outstanding solution for this problem in a range of industrial applications and helps to reduce the costs of waste.

"フレミオン®"はAGC 旭硝子の登録商標です。
 Flemion™ is a registered trademark of AGC.

FEATURES

電源不要
No Power Source


- 配線の必要なし
No wiring
- 防爆エリアへ
Explosion proof

簡単なパージ流量調整
Easy adjusting of the flow rate

- パージ流量調整回路内蔵(SWCシリーズ)
The SWC series is equipped with a purge flow rate adjusting valve for easy adjusting of the flow rate.

メンテナンスフリー
Maintenance Free

- 機械的/電気的なメンテナンス不要
No mechanical/electrical parts to wear out and replace.



環境に優しい
Eco friendly

- 吸着剤・フロン・冷媒は使用していません
No desiccant, CFC gas, or refrigerants
- 吸着剤のようなダストの発生なし
Desiccant dust free

高い水蒸気選択性
High Water Vapor Selectivity

- 非多孔質膜
Non-porous membrane
- 水蒸気以外の透過は殆どなし
Almost no penetration of gases other than moisture

ドレン発生なし
No drain generation

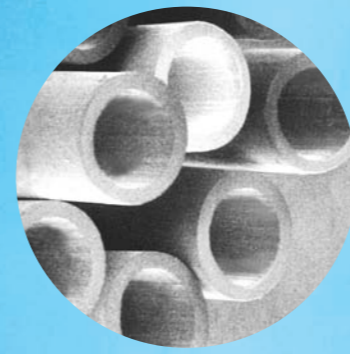
- パージガスは水蒸気として排出されます
Purge gas is emitted as water vapor

アプリケーション
Broad Application

- 空気以外のガスや加湿用途としても使用可能
Suitable for gases other than air and idea for humidifying use

小型・軽量
Small and Light

- 取付姿勢に制限はありません
No installation limitations

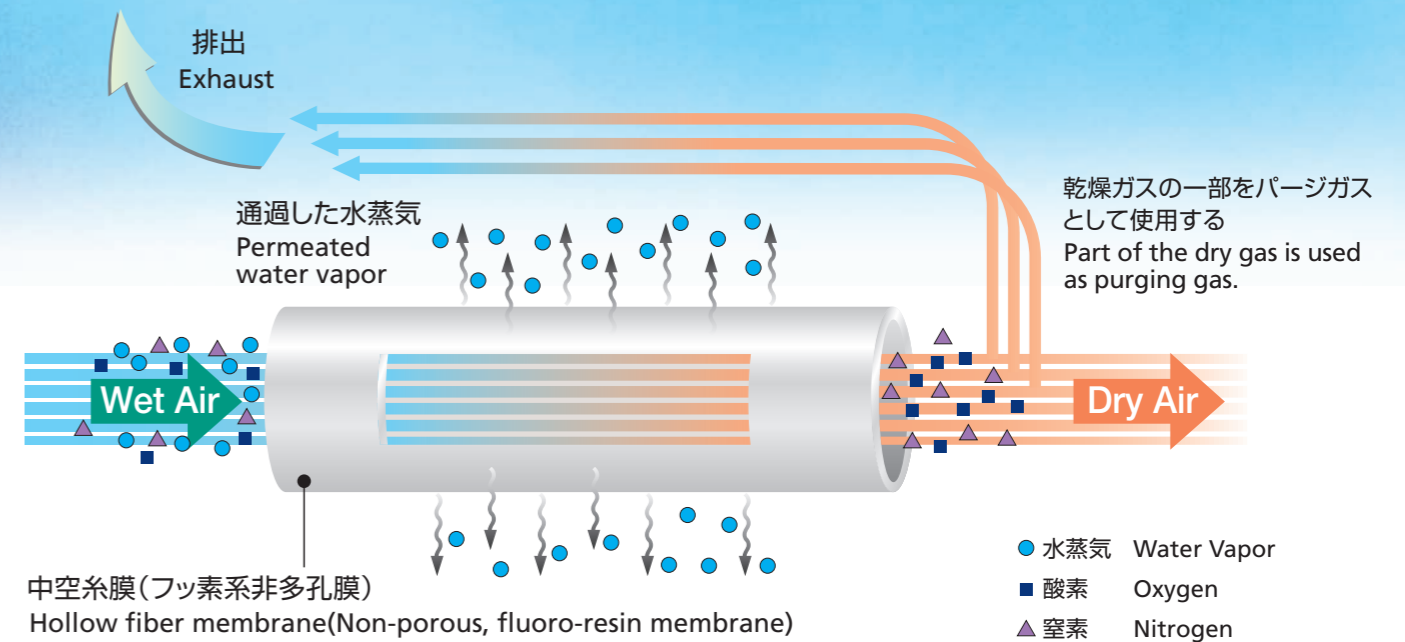


中空糸膜・拡大写真
Hollow Fiber Membranes
SEM Image

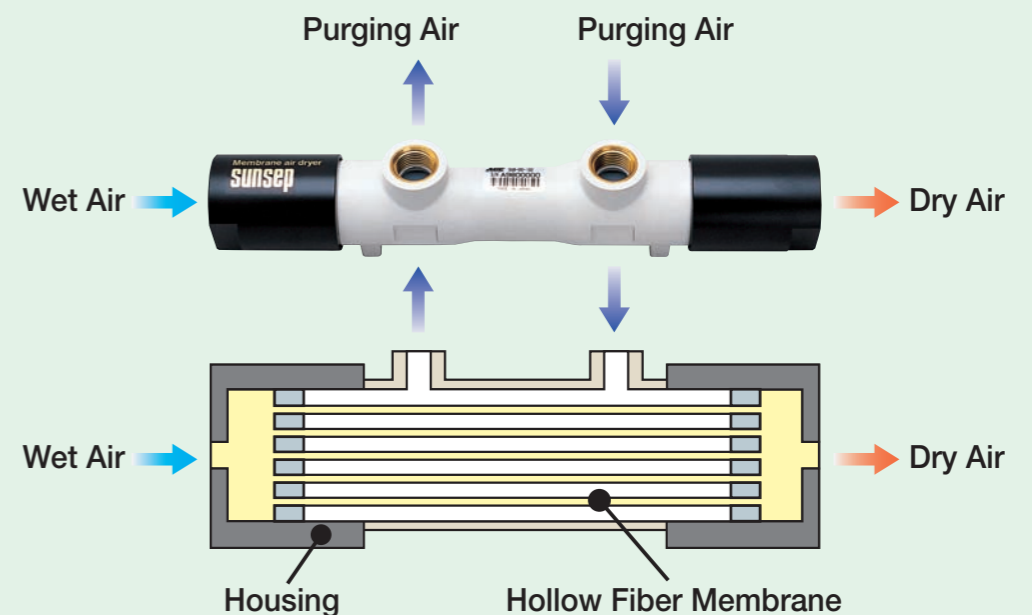
THE sunsep™ PRINCIPLES

“フレミオン®”は、水分子との親和力を有するフッ素系イオン交換膜です。中空糸膜の内側と外側に水分濃度差が生じると、その濃度差を均等にしようとする力が発生します。水分はこの発生した力をドライビングフォースとして、低い水分濃度の方へ膜を透過し移動します。

Flemion™ is a fluorine-containing, ion-exchange membrane which has a high affinity for water molecules. When differences in moisture concentration between the inside and outside of a hollow fiber membrane arise, sunsep™ will act to make the concentrations uniform, continuously transferring moisture through the membrane in the direction of the lower moisture concentration.

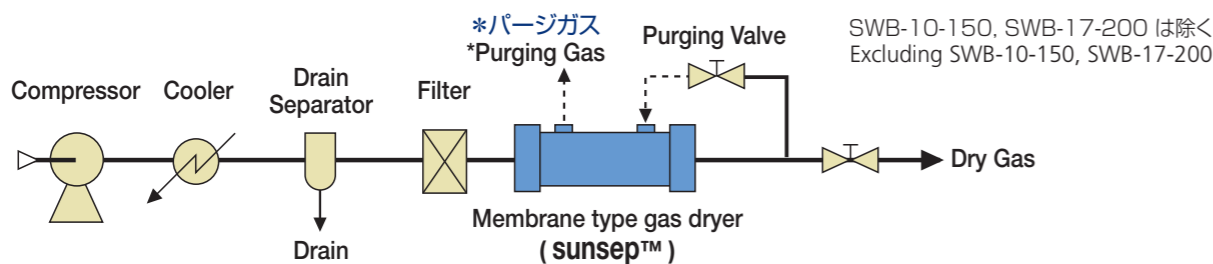


sunsep™ Module Example (SWB-05-100)

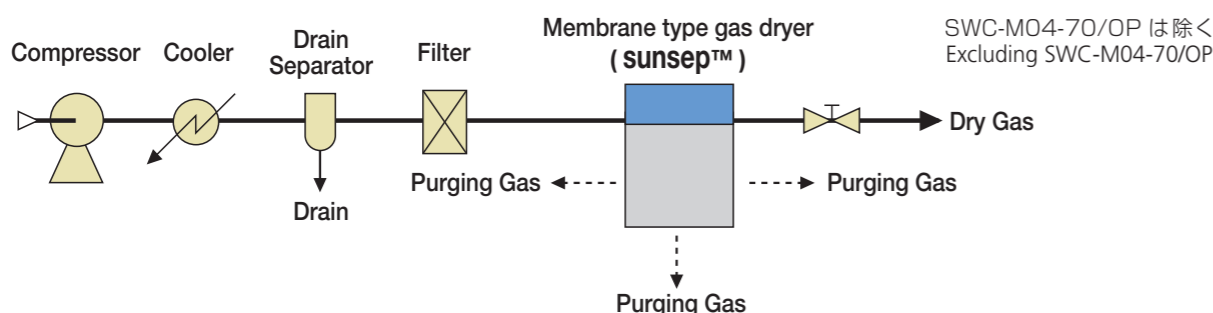


BASIC FLOW

SWB & SWF Series



SWC Series



● **パージガスとは**：中空糸膜を透過した水蒸気を排出するために、生成した乾燥ガスの一部を中空糸外側に流します。このガスをパージガスといいます。

***Purging Gas**: Part of the dry gas produced returns to the outside of the hollow fiber membranes as purging gas which exhausts the water vapor.

● **パージ率とは**：供給ガス流量に対するパージガス流量の割合をパージ率といいます

$$\text{パージ率 (\%)} = \frac{\text{パージガス流量}}{\text{供給ガス流量}} \times 100$$

サンセップ®の標準パージ流量比率は、供給ガス流量の10~20%程度です。すなわち除湿されたガスの生成比率は供給ガス流量の80~90%となります。

***Purging Gas**: The purging gas flow rate is defined as follows:

$$\text{Flow Ratio} \quad \text{Purging Gas Flow Ratio (\%)} = \frac{\text{Flow Rate of Purging Gas}}{\text{Flow Rate of Supply Gas}} \times 100$$

The typical purging gas flow ratio for the sunsep™ is about 10-20% of the flow rate of the supply gas. In other words, the production ratio of dehumidified gas is 80-90% the rate of supply gas.

● **パージ回路内蔵モデル**：

SWB-10-150, SWB-17-200, SWCシリーズ(SWC-M04-70/OPを除く)は、パージ回路を内蔵しておりますので、ドライヤーの外側にパージ配管を設ける必要がなく簡便にご使用いただけます。(14ページのパージ空気流量表をご参照下さい。)パージガスはハウジングの下部若しくはパージガス出口より排出されます。パージガスはパージガス出口に配管接続することにより、別の場所へ排出することも可能です。

又、パージガス入口に別のガスを配管接続することにより、外部パージ方式としてもご使用いただけます。

ご検討の際には、お近くの販売店へご相談ください。

Model with Built-In Purging Circuits

The SWB-10-150, SWB-17-200, SWC series (excluding SWC-M04-70/OP) are equipped with built-in purging circuits, allowing ease of use without the purging line outside the unit. (Please refer to the table of Flow Rates of Purging Air on page 14.) Purging gas exhaust is from the slit at the lower part of the housing or from the purging gas outlet. It is also possible to exhaust purging gas into a separate location by connecting a pipeline to the purging gas outlet. In addition, an external purging system can be used, connecting a pipe line of another gas to the purging gas inlet. Please consult your distributor if required.

SWB/SWC/SWF Series

圧縮ガス除湿用ドライヤー Line-Up of Products for Drying Compression Gas

COMMON SPECIFICATIONS

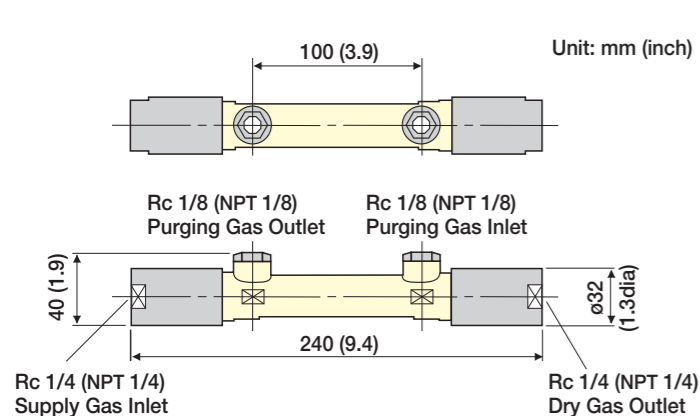
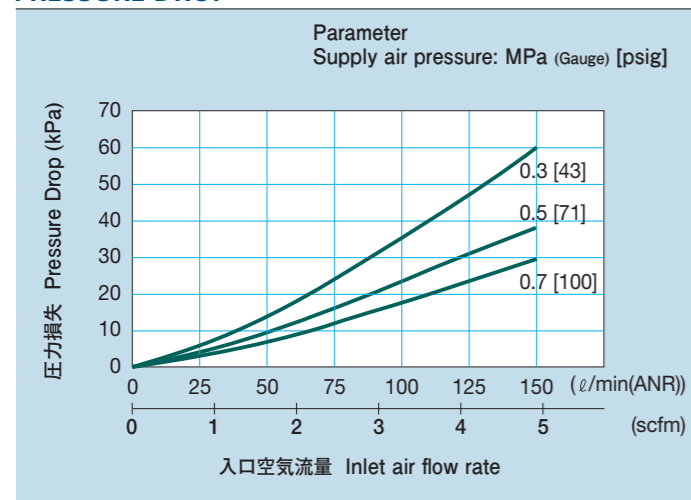
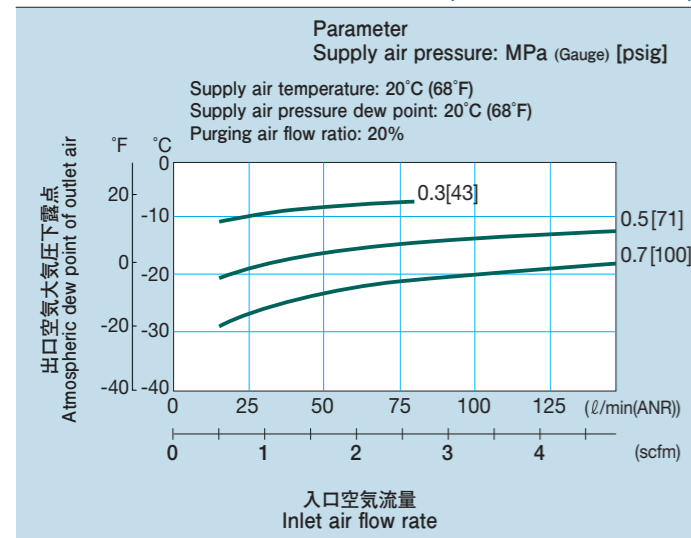
使用及び適用 Use and Applicable Fluid	非腐食ガスの除湿 Dehumidification of Compressed Non-Corrosive Gas	備考 Notes
流体温度(Tin) Fluid Temp. (min. to max.)	-20 ~ +55℃ (凍結なきこと) -4 to +131°F (Not frozen)	除湿性能を維持する為に、流体温度(Tin)を低くし次の範囲でご使用を推奨します。 Tin-Tamb ≤5℃ To maintain satisfactory dehumidifying performance, we recommend use at the lower Tin value and within the following range: Tin-Tamb ≤41°F
周囲温度(Tamb) Ambient Temp. (min. to max.)	-20 ~ +55℃ (凍結なきこと) -4 to +131°F (Not frozen)	
圧力範囲 Pressure Range. (min. to max.)	圧縮ガス入口-出口：0 MPa(Gauge)~0.85MPa(Gauge) Compressed Gas Inlet to Outlet: 0 to 120 psig パージガス入口-出口：0 MPa(Gauge)~0.05MPa(Gauge) Purging Gas Inlet to Outlet: 0 to 7 psig	

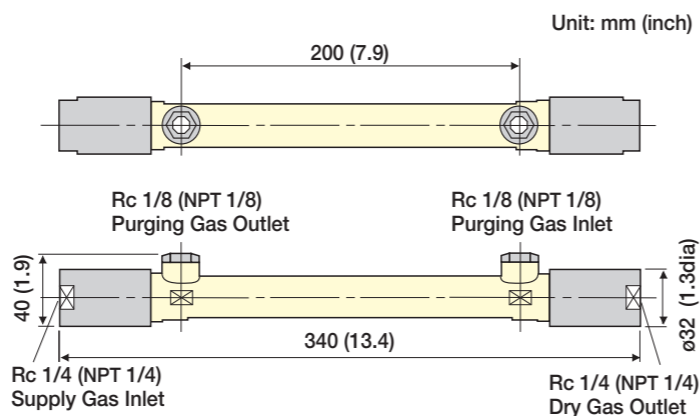
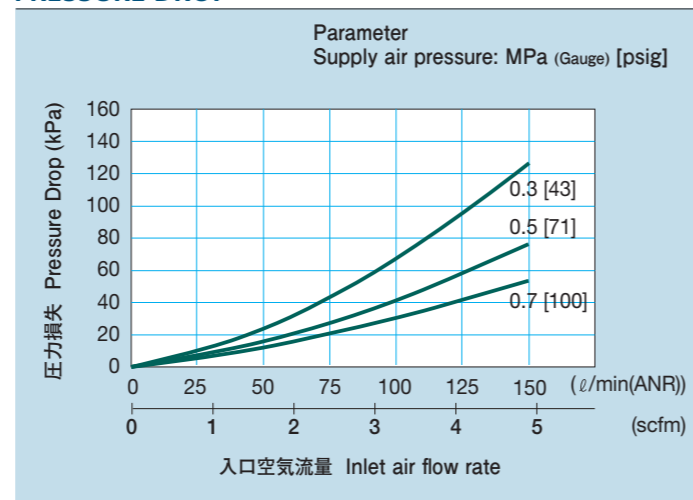
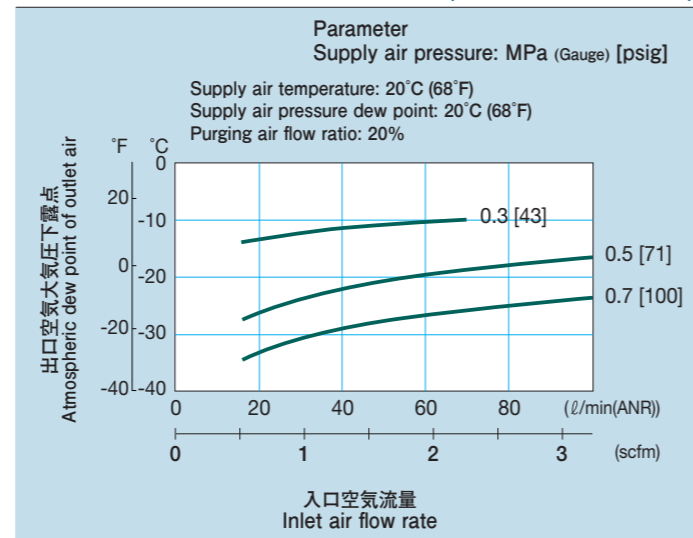
STANDARD SPECIFICATIONS

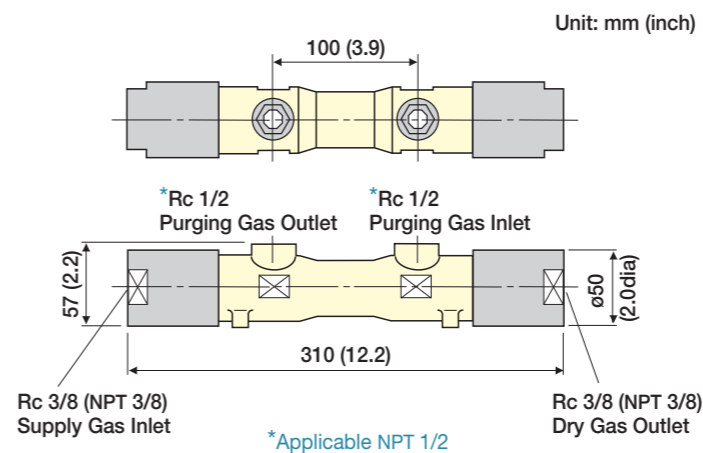
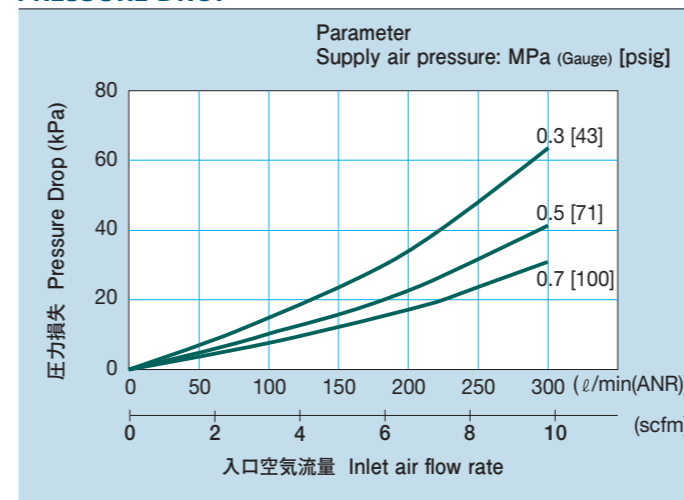
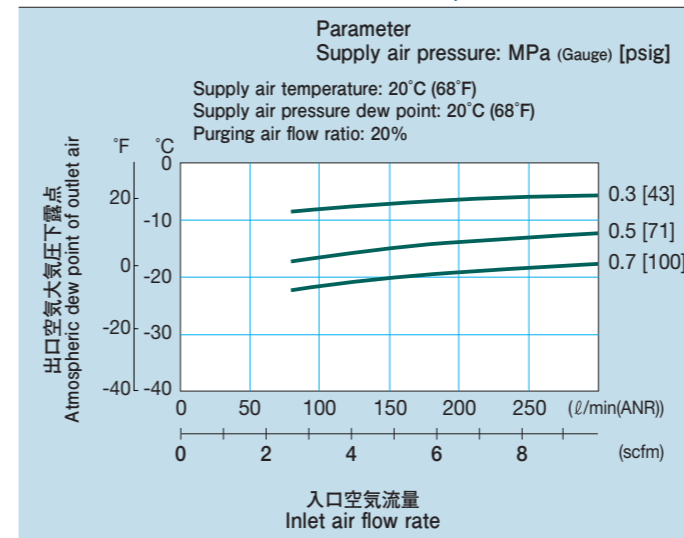
型式 Model	供給空気流量 Supply Air Flow Rate ℓ/min(ANR) (scfm)	寸法 Dimensions mm (inch)		継手サイズ Connector Size		質量 Weight kgf (lbs)	パージ方式 Purging System
				供給ガス入口/出口 Supply Gas Inlet / Outlet	パージガス入口/出口 Purging Gas Inlet / Outlet		
SWB-01-100	~150 (~5.3)	Dia.=32 (1.3)	L=240 (9.4)	Rc1/4 (NPT1/4)	Rc1/8 (NPT1/8)	0.22 (0.49)	—
SWB-01-200	~100 (~3.5)	Dia.=32 (1.3)	L=340 (13.4)	Rc1/4 (NPT1/4)	Rc1/8 (NPT1/8)	0.26 (0.57)	—
SWB-02-100	~300 (~10.6)	Dia.=50 (2.0)	L=310 (12.2)	Rc3/8 (NPT3/8)	Rc1/2 (Applicable to NPT1/2)	0.63 (1.39)	—
SWB-05-100	~600 (~21.2)	Dia.=50 (2.0)	L=310 (12.2)	Rc3/8 (NPT3/8)	Rc1/2 (Applicable to NPT1/2)	0.66 (1.46)	—
SWB-10-150	~1200 (~42.4)	Dia.=75 (3.0)	L=340 (13.4)	Rc1/2 (NPT1/2)	—	1.32 (2.91)	Built-in purging circuit
SWB-17-200	~1800 (~63.6)	Dia.=110 (4.3)	L=370 (14.6)	Rc1 (NPT1)	—	4.81 (10.6)	Built-in purging circuit
SWC-M04-70/OP	~15 (~0.5)	W=36 (1.4)	H=75 (3.0)	D=15 (0.6)	M5(Female)	0.05 (0.11)	—
SWC-M04-70/IP					—		Built-in purging circuit
SWC-M08-100	~50 (~1.8)	W=61 (2.4)	H=112 (4.4)	D=31 (1.2)	Rc1/8 (NPT1/8)	0.26 (0.58)	Built-in purging circuit
SWC-M15-100	~80 (~2.8)	W=61 (2.4)	H=112 (4.4)	D=31 (1.2)	Rc1/8 (NPT1/8)	0.27 (0.60)	Built-in purging circuit
SWC-M15-100/H*1					—		Built-in purging circuit
SWC-01-150	~150 (~5.3)	W=70 (2.8)	H=150 (5.9)	D=40 (1.6)	Rc1/4 (NPT1/4)	0.39 (0.86)	Built-in purging circuits
SWC-02-250	~300 (~10.6)					0.69 (1.53)	Built-in purging circuits
SWC-03-250	~450 (~15.9)	W=100 (3.9)	H=200 (7.9)	D=50 (2.0)	Rc3/8 (NPT3/8)	0.71 (1.57)	Built-in purging circuits
SWC-03-250/H*1					—		Built-in purging circuits
SWF-M06-400*2	~30 (~1.1)	Dia=25 (1.0)	L=516 (20.3)	Rc1/4 (NPT1/4)	Rc1/8 (NPT1/8)	0.12 (0.26)	—

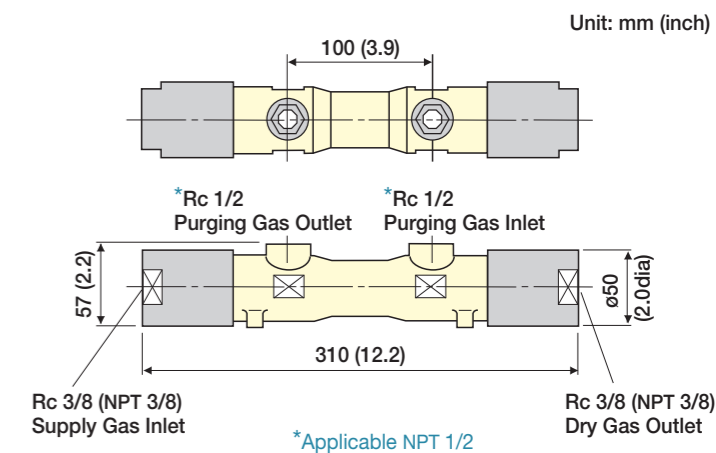
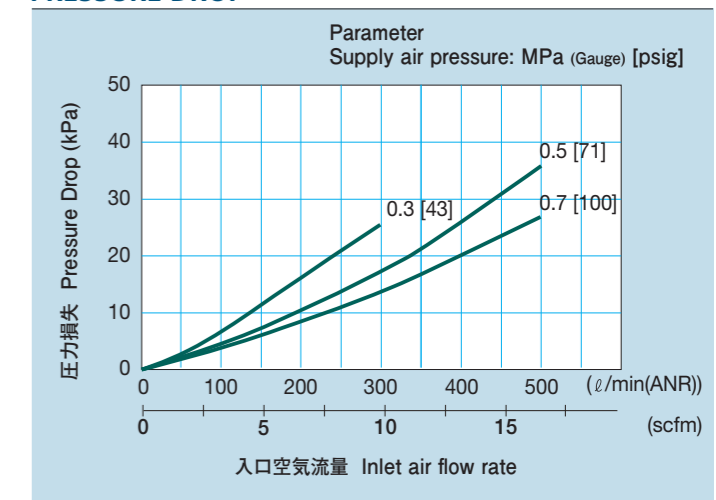
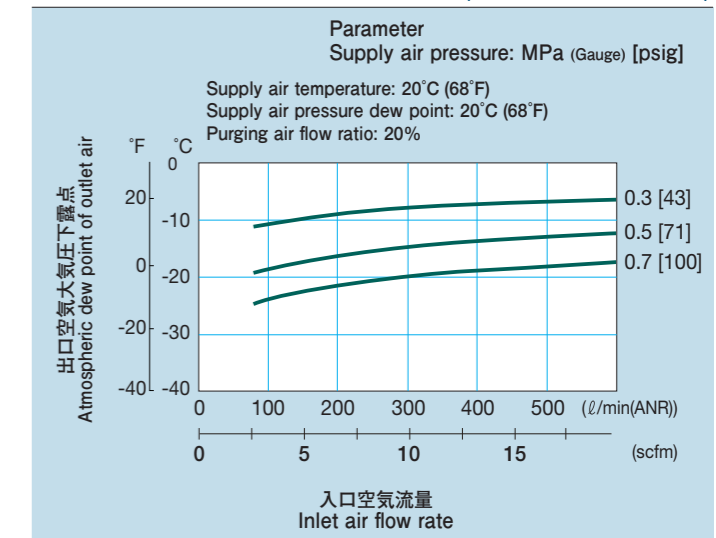
*1 低パージ仕様です。 These products are of the low purge type. *2 SWF-M06-400型 中央部分は柔軟性のあるケーシング材料で構成されており、U字型(最小曲げ半径35mm)に曲げても使用できますので、機器組込み等の省スペース用途に最適です。 Since the casing is constructed with a flexible material, the middle part of the casing can be bent into a U-shape with a minimum inner radius of curvature of 35mm (1.4 inch), thus allowing installation in a narrow space.

SWB-01-100

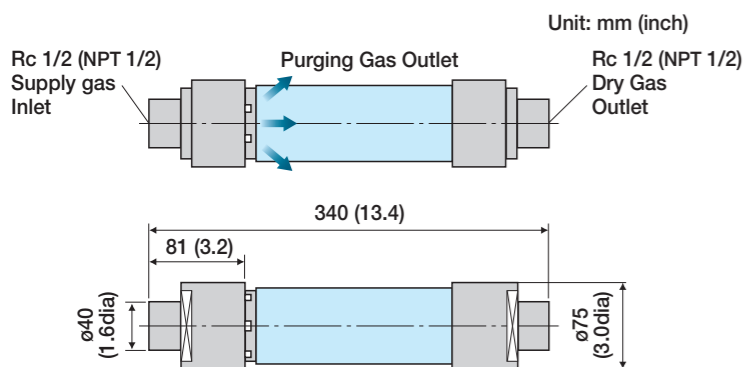
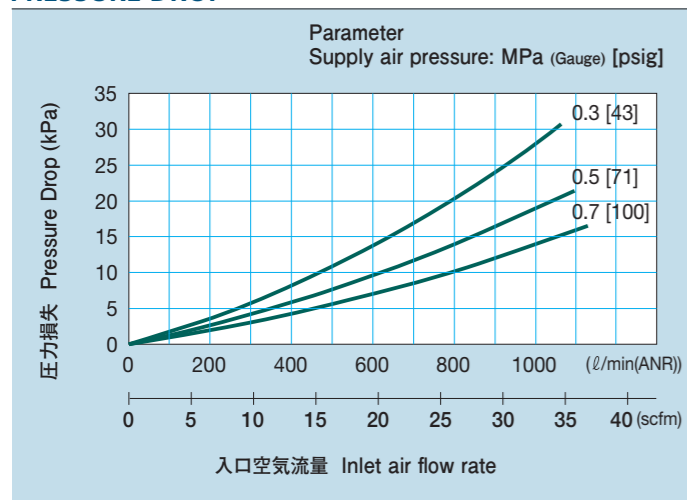
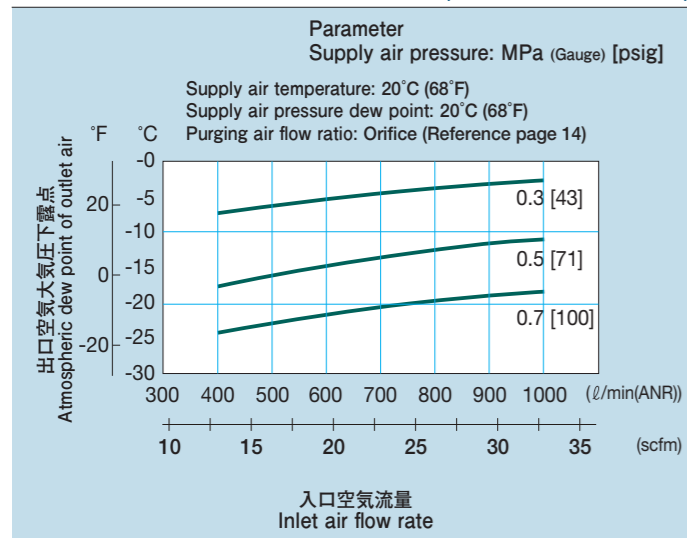
DIMENSIONS (APPROX.)

PRESSURE DROP

DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)

SWB-01-200

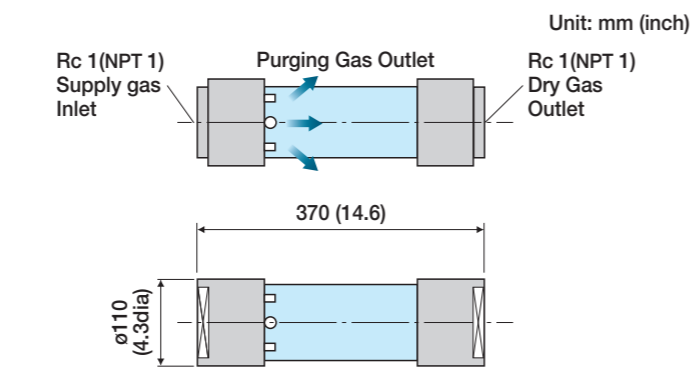
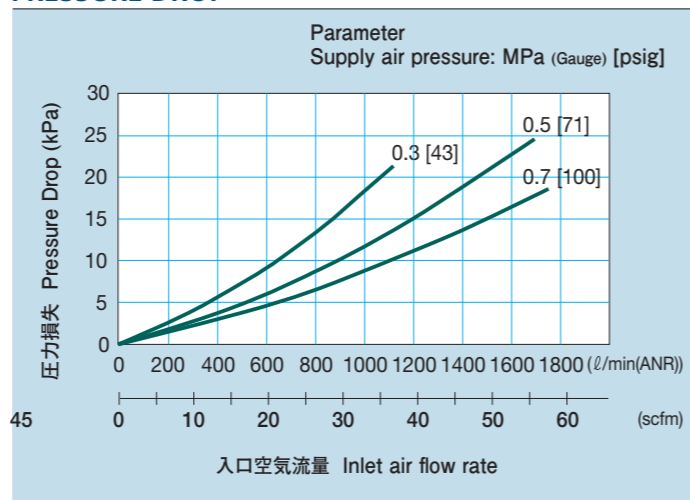
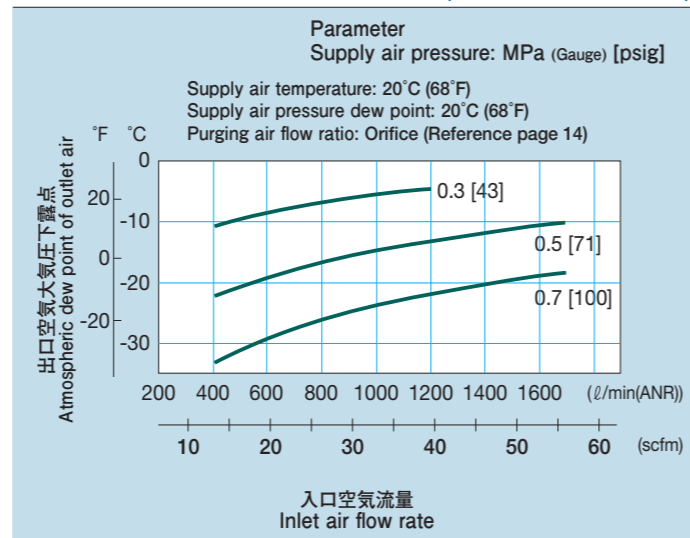
DIMENSIONS (APPROX.)

PRESSURE DROP

DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)

SWB-02-100

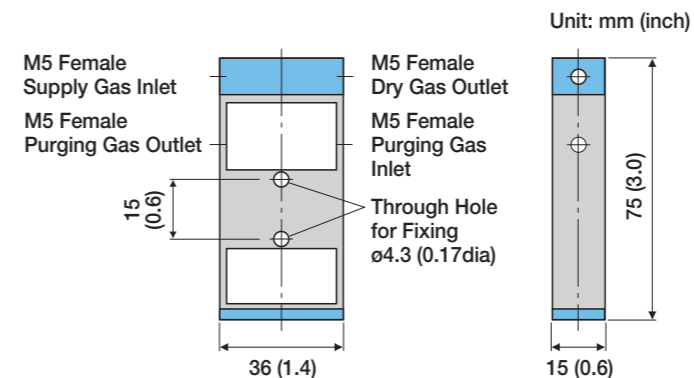
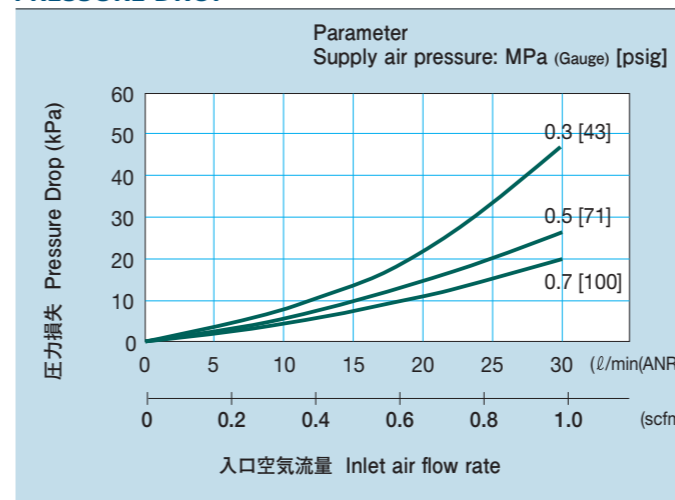
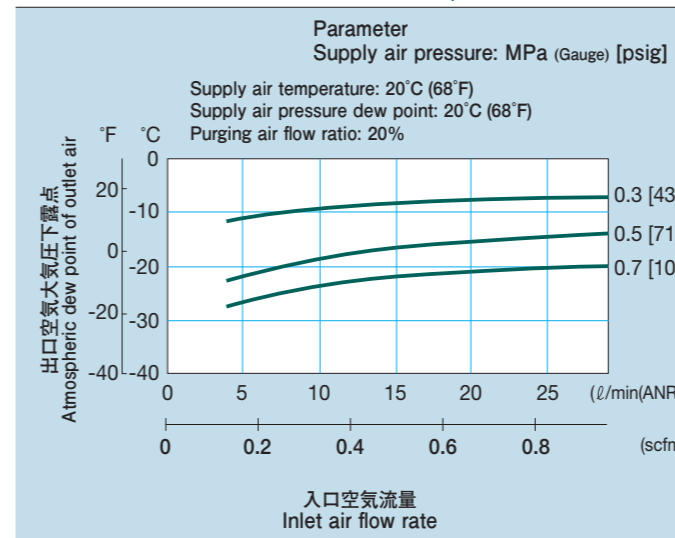
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PRESSURE DROP

DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)

SWB-05-100

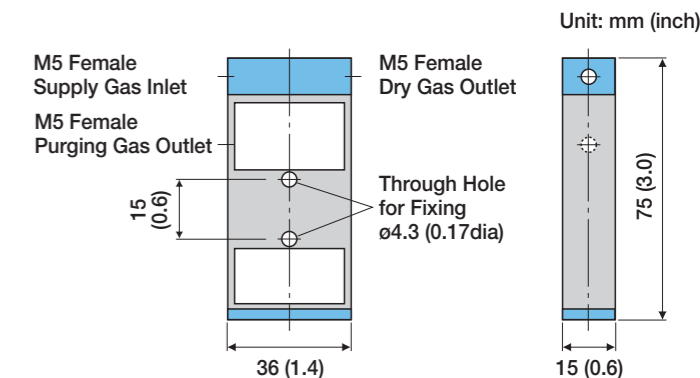
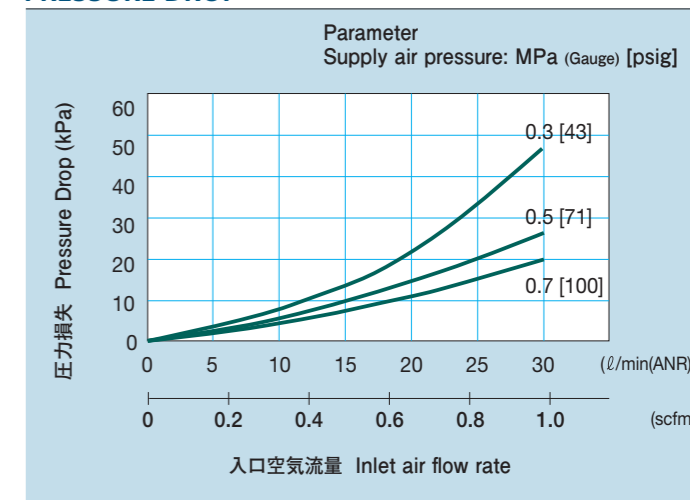
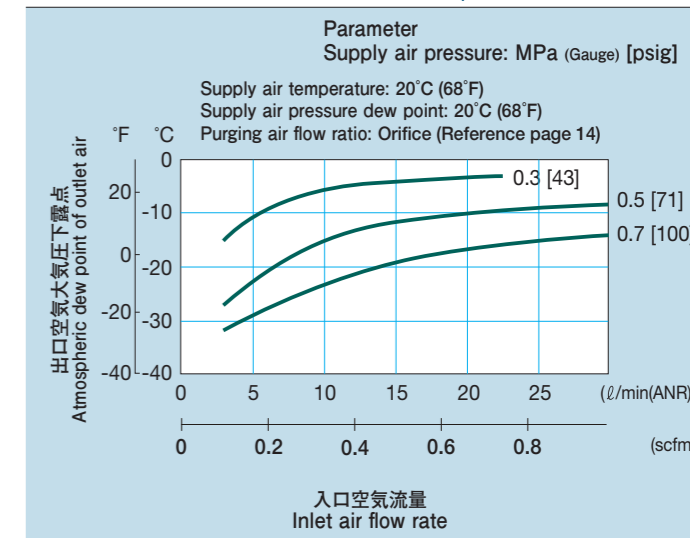
DIMENSIONS (APPROX.)

PRESSURE DROP

DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)


SWB-10-150

DIMENSIONS (APPROX.)

PRESSURE DROP

DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)

SWB-17-200

DIMENSIONS (APPROX.)

PRESSURE DROP

DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)

SWC-M04-70/OP

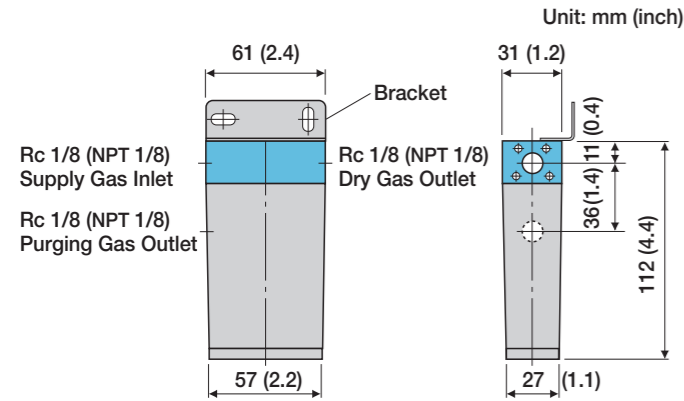
DIMENSIONS (APPROX.)

PRESSURE DROP

DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)

SWC-M04-70/IP

DIMENSIONS (APPROX.)

PRESSURE DROP

DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)


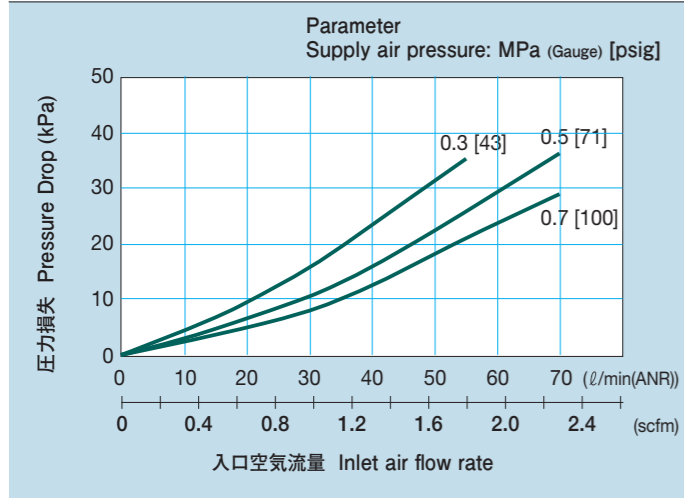
SWC-M08-100



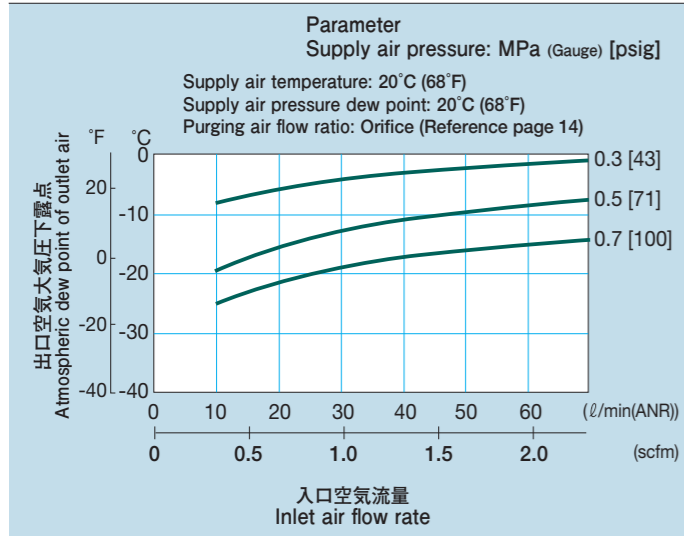
DIMENSIONS (APPROX.)



PRESSURE DROP



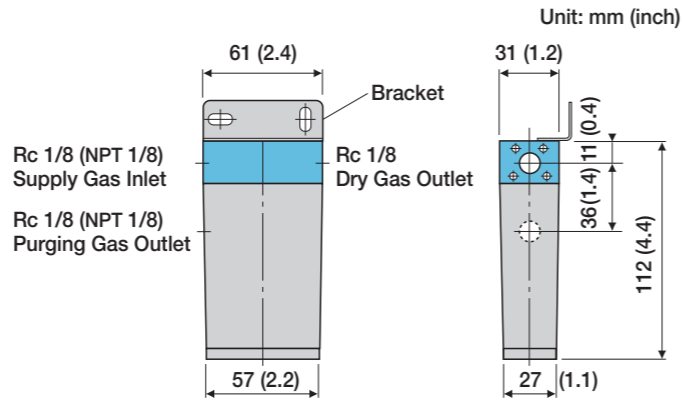
DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)



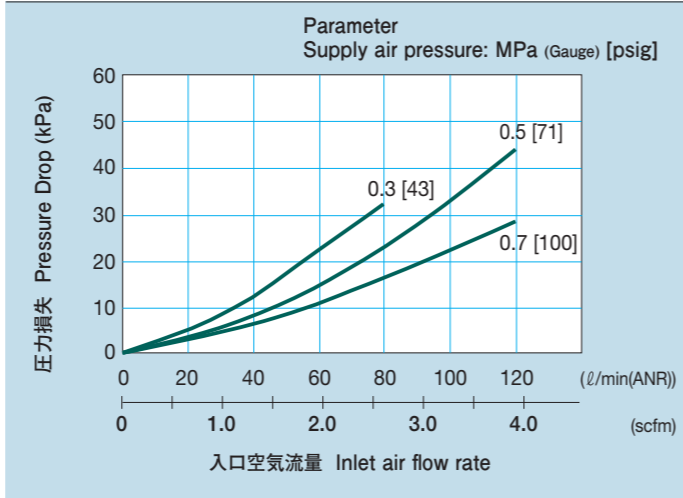
SWC-M15-100



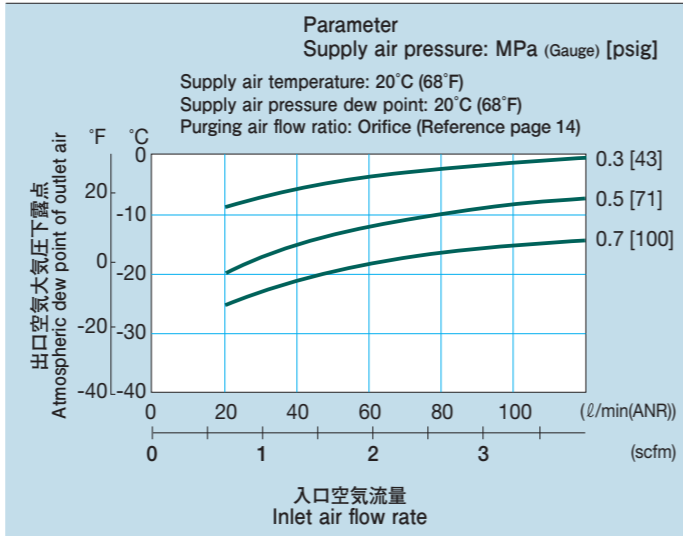
DIMENSIONS (APPROX.)



PRESSURE DROP



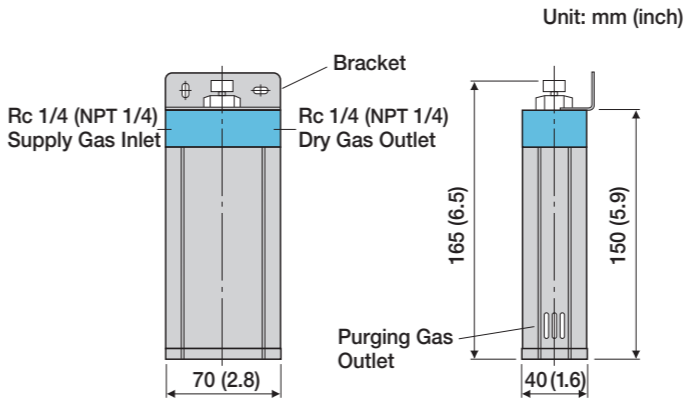
DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)



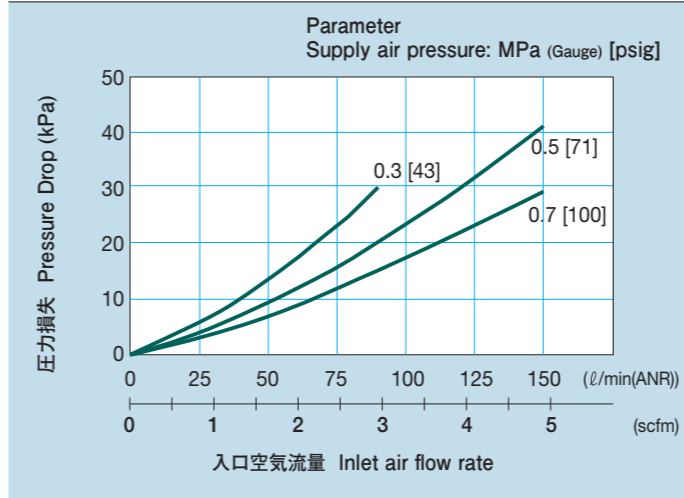
SWC-01-150



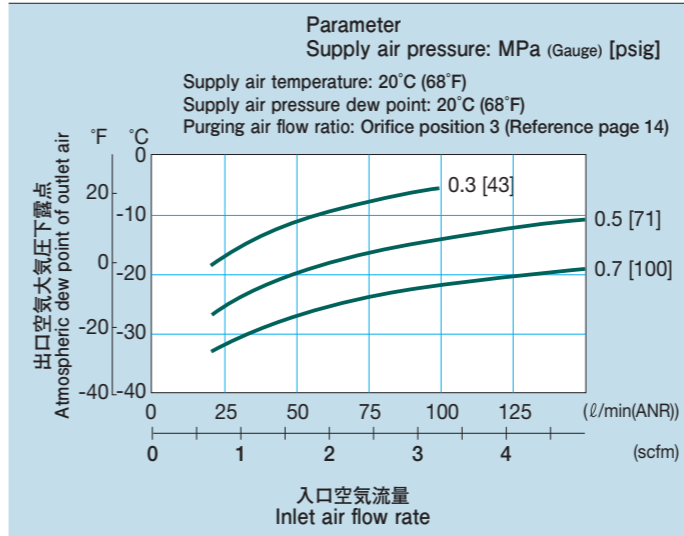
DIMENSIONS (APPROX.)



PRESSURE DROP



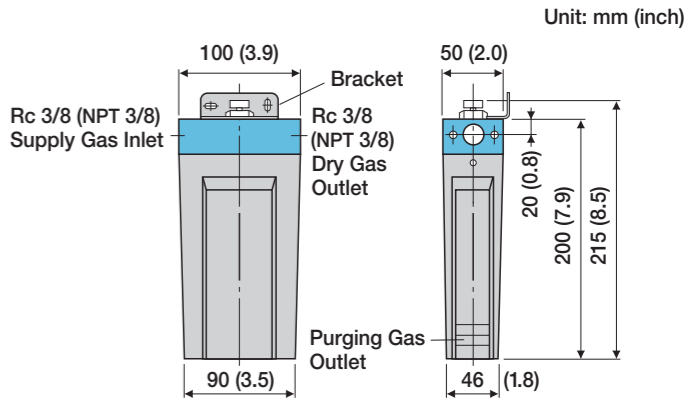
DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)



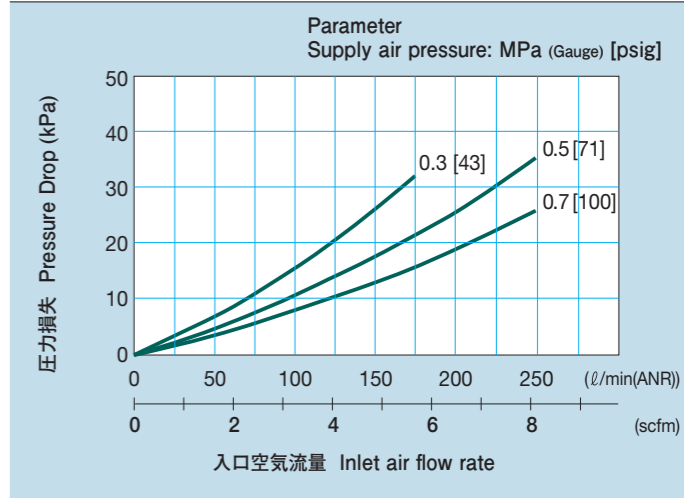
SWC-02-250



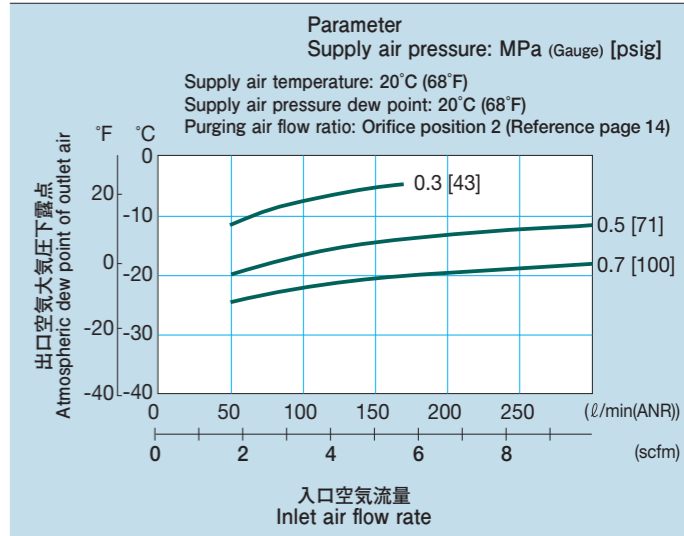
DIMENSIONS (APPROX.)



PRESSURE DROP



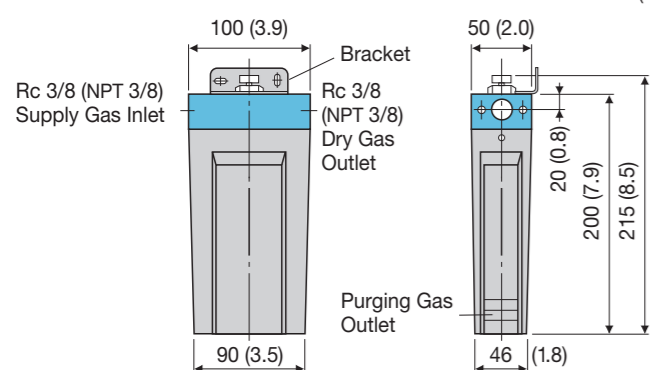
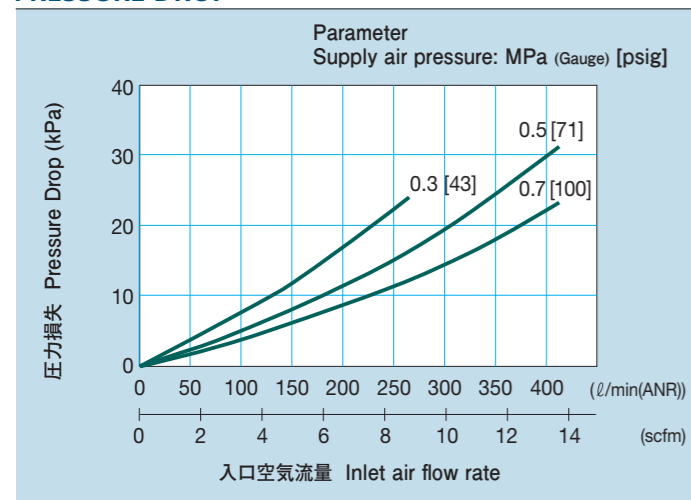
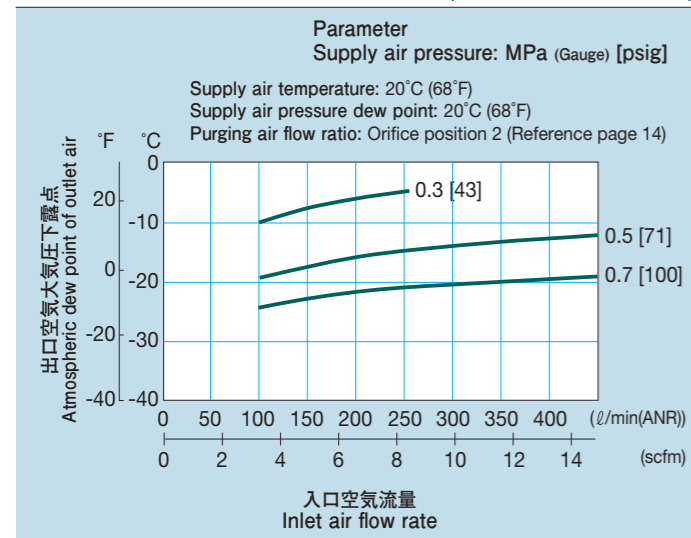
DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)



SWC-03-250

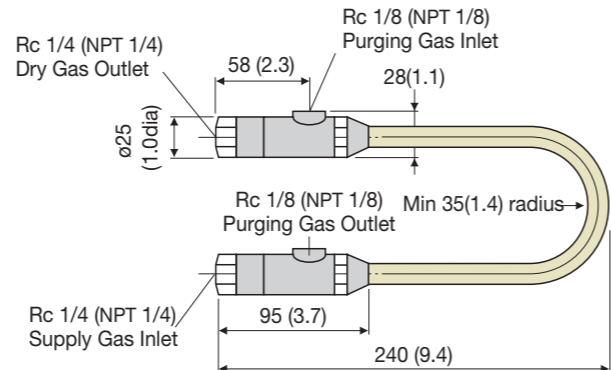
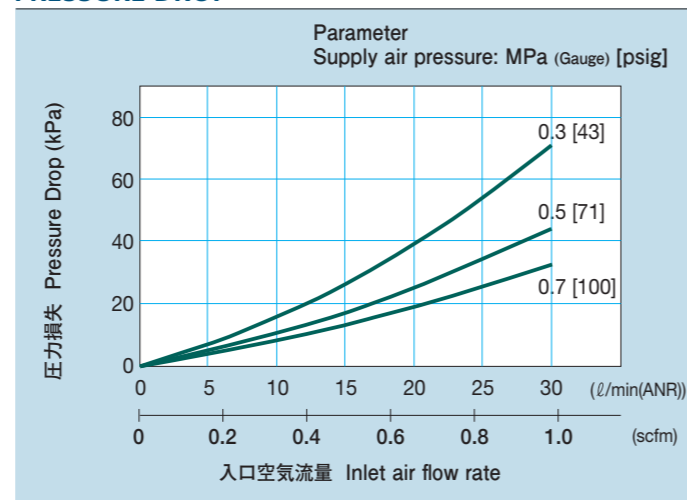
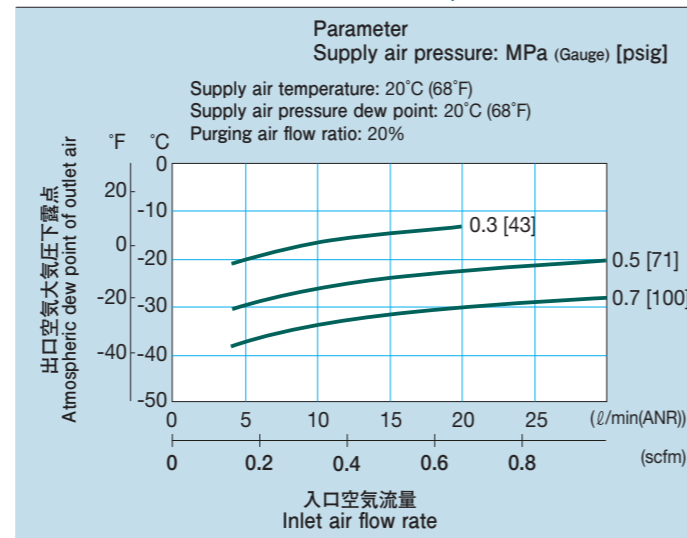
DIMENSIONS (APPROX.)

Unit: mm (inch)


PRESSURE DROP

DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)

SWF-M06-400

DIMENSIONS (APPROX.)

Unit: mm (inch)


PRESSURE DROP

DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)

SWG Series
ガス分析計へのサンプルガス除湿用ドライヤー Line-Up of Products for Drying Sample Gas for Gas Analyzers
COMMON SPECIFICATIONS

使用及び適用 Use and Applicable Fluid	ガス分析用サンプルガスの除湿 Dehumidification of Sample Gas for Gas Analyzers		備考 Notes
SWG-A01 Series			
流体温度(Tin) Fluid Temp. (min. to max.)	PP Series	-15 ~ +80°C (凍結なきこと) 5 to +176°F (Not frozen)	除湿性能を維持する為に、流体温度(Tin)を低くし次の範囲でご使用を推奨します。 Tin-Tamb ≤5°C To maintain satisfactory dehumidifying performance, we recommend use at a lower Tin value and within the following range: Tin-Tamb ≤9°F
	KF Series	-15 ~ +100°C (凍結なきこと) 5 to +212°F (Not frozen)	
周囲温度(Tamb) Ambient Temp. (min. to max.)	PP Series	-15 ~ +80°C (凍結なきこと) 5 to +176°F (Not frozen)	
	KF Series	-15 ~ +100°C (凍結なきこと) 5 to +212°F (Not frozen)	
SWG-035, 100 Series			
流体温度(Tin) Fluid Temp. (min. to max.)	PP Series	-15 ~ +60°C (凍結なきこと) 5 to +140°F (Not frozen)	
	PS Series		
SS Series			
周囲温度(Tamb) Ambient Temp. (min. to max.)	PP Series		
	SS Series		
圧力範囲 Pressure Range. (min. to max.)	* 圧縮ガス入口-出口: -0.04MPa(Gauge)~0.5MPa(Gauge) at 25°C (中空糸乾燥状態) * Compressed Gas Inlet to Outlet: -6.0 to 72psig at 25°C (In dry conditions.)		
	* パージガス入口-出口: -0.04MPa(Gauge)~0.05MPa(Gauge) at 25°C (中空糸乾燥状態) * Purging Gas Inlet to Outlet: -6.0 to 7.1psig at 25°C (In dry conditions.)		

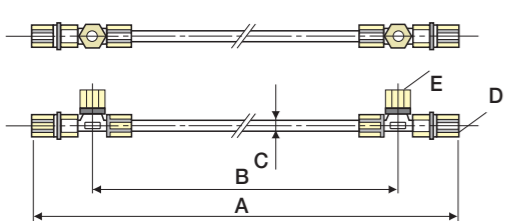
*上記圧力範囲は中空糸の湿潤状態やご使用温度により変化します。

* The above pressure range changes according to the wet condition of the hollow fiber and the operating temperature.

STANDARD SPECIFICATIONS

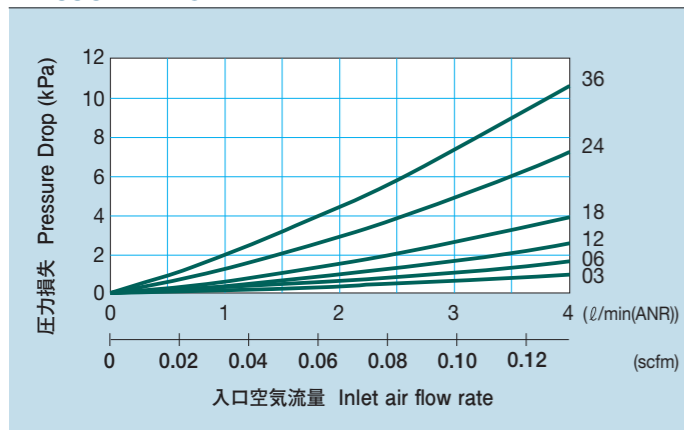
型式 Model	継手材質 Connector Material	標準流量 Standard Supply Flow Rate l/min(ANR) (scfm)	長さ Length		継手サイズ Connector Size		質量 Weight gf (lbs)
			全長 Total mm (inch)	パージ口間 Purging Gas Port from inlet to outlet mm (inch)	供給ガス入口 / 出口 Supply Gas Inlet / Outlet	パージガス入口 / 出口 Purging Gas Inlet / Outlet	
SWG-A01-03/PP	PP	~ 2 (~0.07)	390 (15.4)	300 (11.8)	ø6.35mm (ø1/4inch)	ø6.35mm (ø1/4inch)	30 (0.07)
SWG-A01-03/KF	PVDF		45 (0.10)				
SWG-A01-06/PP	PP		690 (27.2)	600 (23.6)			40 (0.09)
SWG-A01-06/KF	PVDF		55 (0.12)				
SWG-A01-12/PP	PP		1290 (50.8)	1200 (47.2)			65 (0.14)
SWG-A01-12/KF	PVDF		80 (0.18)				
SWG-A01-18/PP	PP		1890 (74.4)	1800 (70.9)			90 (0.20)
SWG-A01-18/KF	PVDF		105 (0.23)				
SWG-A01-24/PP	PP		2490 (98.0)	2400 (94.5)			115 (0.25)
SWG-A01-24/KF	PVDF		130 (0.29)				
SWG-A01-36/PP	PP		3690 (145.3)	3600 (141.8)			165 (0.36)
SWG-A01-36/KF	PVDF		180 (0.40)				
SWG-035-06/PP	PP	~ 4 (~0.14)	714 (28.1)	600 (23.6)	Rc1/4 (NPT1/4)	Rc1/8 (NPT1/8)	240 (0.53)
SWG-035-12/PP	PP		1314 (51.7)	1200 (47.2)			350 (0.77)
SWG-100-06/PS	PP	~ 12 (~0.42)	700 (27.6)	600 (23.6)	Rc1/4 (NPT1/4)	Rc1/8 (NPT1/8)	1200(2.65)
SWG-100-06/SS	SUS316		1450 (3.20)				
SWG-100-12/PS	PP		1300 (51.2)	1200 (47.2)			1680(3.70)
SWG-100-12/SS	SUS316		1930 (4.25)				

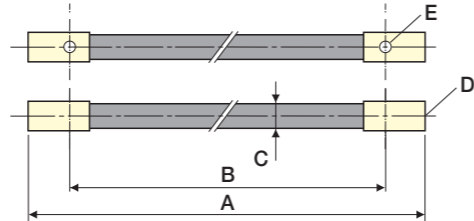
SWG-A01-Series

DIMENSIONS (APPROX.)


Unit: mm (inch)

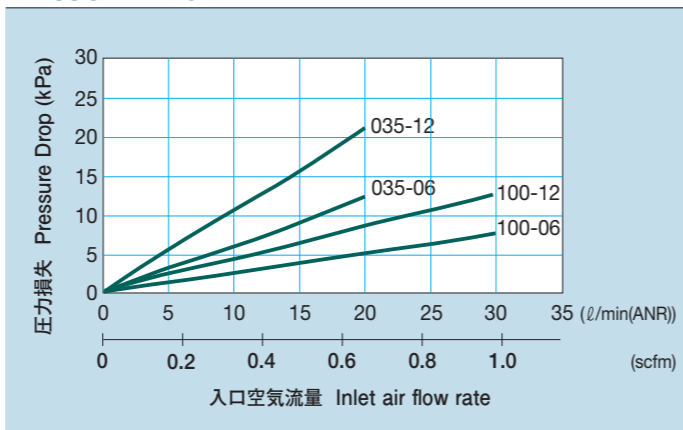
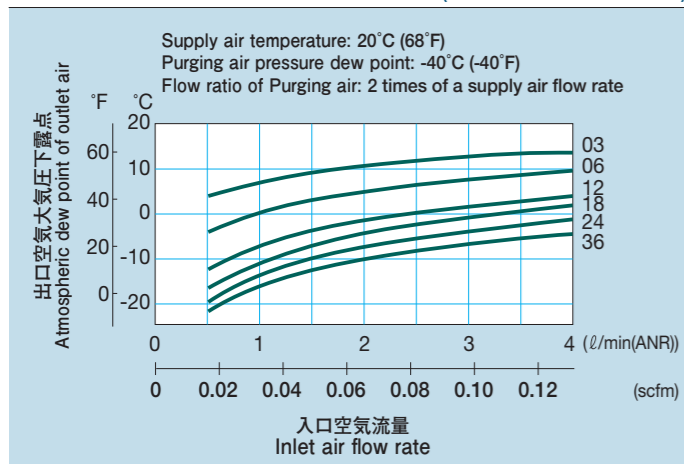
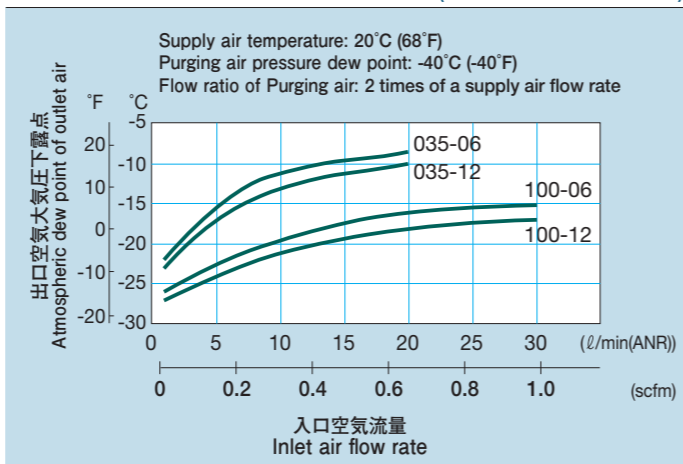
Model	Dimensions			Connector Size		
	A	B	C	D	E	
-03	390(15.4)	300(11.8)	ø6.35 (0.25dia)	ø6.35 (0.25dia)	ø6.35 (0.25dia)	
-06	690(27.2)	600(23.6)				
-12	1290(50.8)	1200(47.2)				
-18	1890(74.4)	1800(70.9)				
-24	2490(98.0)	2400(94.5)				
-36	3690(145.3)	3600(141.7)				

PRESSURE DROP

SWG-035, 100-Series

DIMENSIONS (APPROX.)


Unit: mm (inch)

Model	Dimensions			Connector Size	
	A	B	C	D	E
-035-06	714(28.1)	600(23.6)	20(0.8)	Rc1/4 (NPT1/4)	Rc1/8 (NPT1/8)
-035-12	1314(51.7)	1200(47.2)			
-100-06	700(27.6)	600(23.6)	22(0.9)		
-100-12	1300(51.2)	1200(47.2)			

PRESSURE DROP

DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)

DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)

アクアドライブ® AQUADRIVE™
SWT-SERIES

SWTシリーズは、フレミオン®チューブを樹脂製ネットで被覆したものです。本構造により、フレミオン®チューブを保護しながら、周囲環境と自由に湿度交換することができます。パージガスを必要とせず周囲環境湿度差を利用して300mℓ/min以下の微小流量サンプルガスの除湿や加湿を可能とします。

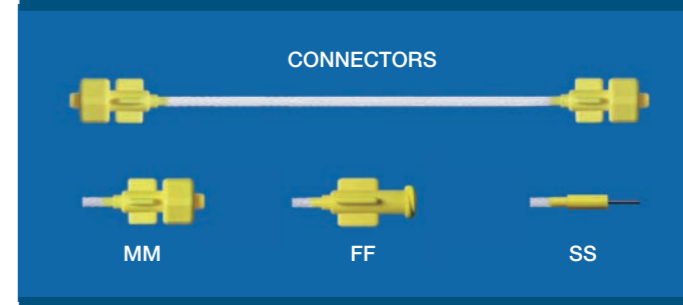
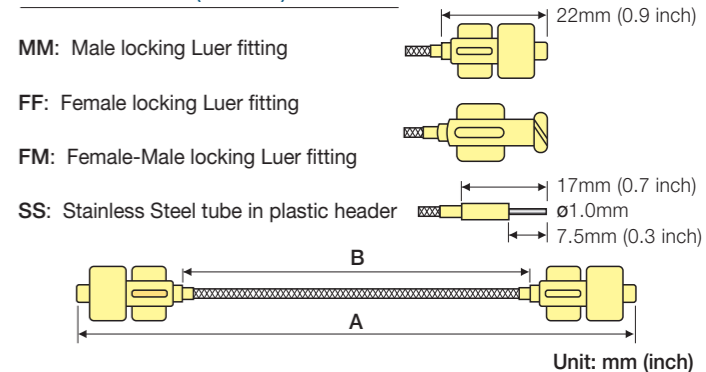
呼吸ガス分析装置や新陳代謝測定装置などへ適用されます。

The SWT series surrounds a Flemion™ tube with plastic braided net. The braid net offers free humidity exchange with the ambient air, protecting the Flemion™ tube from damage. This enables the product to dry and humidify micro-flow sample gas of less than 300 mL/min, by utilizing the difference in ambient humidity without purging gas. To expiration gas analyzer and metabolism analyzer, etc.

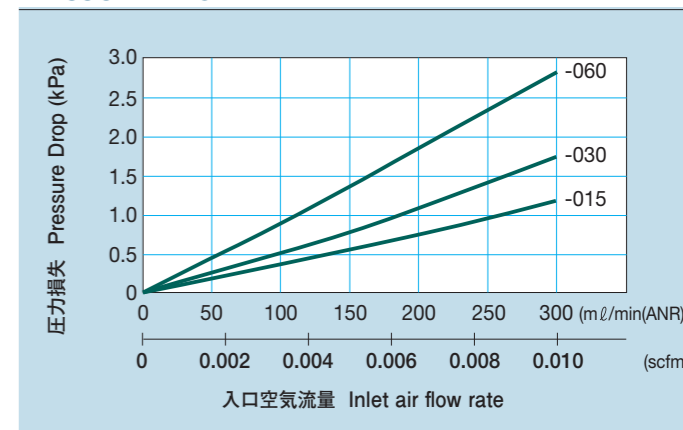
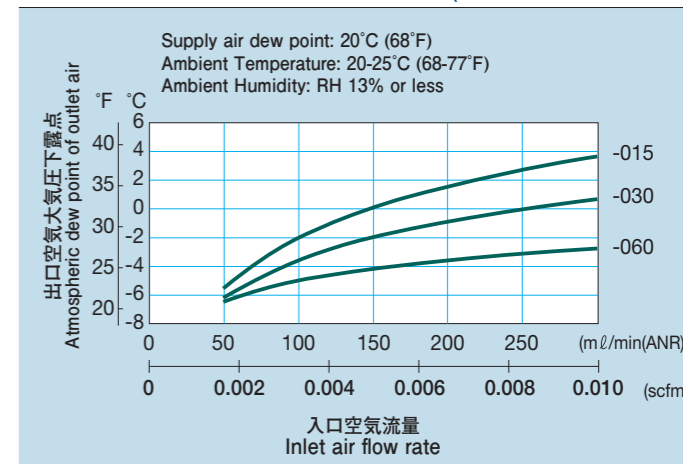
- 小型・軽量
Small and Light
- パージガス不要
No Purge Gas
- 周囲湿度との調整
Adjusts to ambient humidity

用途 Applications

- 呼吸ガス分析計
Expiration gas analyzer
- 代謝分析計
Metabolism analyzer
- 微小流量サンプルガスの除加湿など
Drying or Humidifying for minute flux of a sample gas, etc.

SWT Series

DIMENSIONS (APPROX.)


Model	Dimensions				
	A				B
	MM	FF	FM	SS	
SWT-1.3-015	194(7.6)	194(7.6)	194(7.6)	184(7.2)	150(5.9)
SWT-1.3-030	344(13.5)	344(13.5)	344(13.5)	334(13.1)	300(11.8)
SWT-1.3-060	644(25.4)	644(25.4)	644(25.4)	634(25.0)	600(23.6)

PRESSURE DROP

DEHUMIDIFYING PERFORMANCE (MEASUREMENT EXAMPLE)


INSTRUCTIONS FOR USE

- 供給ガス中のドレンや異物などを取除くために、供給ガス入口配管に濾過度5 μm 以下のフィルターを設置して下さい。
To remove drainage, dust, etc., we recommend that a filter (filtering capacity of less than 5 μm) be installed at the inlet line of supply gas. Dehumidifying efficiency may decrease if drainage is mixed into the inlet line. We therefore recommend that an automatic drain system be installed at the supply gas inlet.
- 給油式圧縮機ラインに使用するには、供給ガス入口配管に濾過度0.3 μm 以下(95%捕集粒径)のオイルミスト分離器を設置し、オイルミスト濃度を1mgf/Nm³として下さい。
When a sunsep™ unit is used for the line from a lubricating type compressor, we recommend that an automatic oil mist separator be installed at the supply gas inlet line. The oil mist-separator must have an oil filterability capability of less than 0.3 μm (95% collection capability of dust diameter) and should also have an oil-mist concentration of less than 1 mgf/Nm³.
- 供給ガスは清浄なものとし、ゴミ、腐食性ガス、有機溶剤、化学薬品などが混入しないようにして下さい。
Supply gas should be clean and free of dust, corrosive gas, organic solvent and chemicals.
- パージガス入口/出口に過度な圧力を加えないようにして下さい。(max.0.05MPa(Gauge))
Excessive pressure should not be applied to the purging gas inlet and outlet(max.7.1 psig).
- パージガスを10 ℓ/min (ANR)以下の少量で使用するには、ニードル弁よりも固定オリフィスを使用されることをお勧めします。
For operation with a small amount of purging gas, not more than 0.35 scfm. We recommend that a small aperture be used instead of a needle valve.
- 減圧弁をご使用になる場合には除湿効率を高めるために、乾燥ガス出口側に設置することをお勧めします。
When installing a pressure reducing valve, we recommend that the valve be installed at the outlet line of dry gas, which will increase dehumidifying efficiency.

● Flow Rate of Purging Gas

Pressure	MPa(Gauge) [psig]	0.3 [43]		0.5 [71]		0.7 [100]	
		Purging Gas Flow Rate					
Model	Position	ℓ/min (ANR)		scfm		ℓ/min (ANR)	
	No.	ℓ/min (ANR)	scfm	ℓ/min (ANR)	scfm	ℓ/min (ANR)	scfm
SWB-10-150	-	80	2.82	120	4.24	150	5.65
SWB-17-200	-	136	4.80	203	7.17	270	9.53
SWC-M04-70/IP	-	1	0.04	1.5	0.05	2	0.07
SWC-M08-100	-	3	0.11	5	0.18	6	0.21
SWC-M08-100/H*1	-	1.5	0.05	2	0.07	3	0.11
SWC-M15-100	-	6	0.21	9	0.32	12	0.42
SWC-M15-100/H*1	-	3	0.11	5	0.18	6	0.21
SWC-01-150	1	3	0.11	5	0.18	6	0.21
	2	6	0.21	9	0.32	12	0.42
	3	12	0.42	19	0.67	25	0.88
SWC-02-250	1	12	0.42	19	0.67	25	0.88
	2	25	0.88	38	1.34	50	1.77
	3	37	1.31	56	1.98	75	2.65
SWC-03-250	1	25	0.88	38	1.34	50	1.77
	2	37	1.31	56	1.98	75	2.65
	3	63	2.22	94	3.32	125	4.41
SWC-03-250/H*1	1	12	0.42	19	0.67	25	0.88
	2	25	0.88	38	1.34	50	1.77
	3	37	1.31	56	1.98	75	2.65

*1 低パージ仕様です。These products are low purge type.

NOTE

- 露点とは?
結露水が生じ始める温度のことで、ガスの乾燥度の尺度として、よく使用されます。露点が高いほど水蒸気含有量が少なく、乾燥度が高いことを意味します。
What does "Dew point" mean?
Dew point is defined as the temperature at which air including water vapor begins to dew. The term is often used as an indicator of the degree of dryness of wet gas. The lower the dew point is, the less water vapor is included, which means a higher degree of dryness.
- 露点を下げるには?
サンセップ®を使用して乾燥ガスの乾燥度を上げる(露点を下げる)ためには、以下の方法があります。
 - 供給ガス入口温度を下げる。(水蒸気負荷低減)
 - 供給ガス圧力を上げる。
 - 供給ガス流量(処理ガス流量)を下げる。
 - 生成乾燥ガス流量を下げる。
 - パージガス流量を上げる。**How is the dew point decreased?**
The methods to lower the dew point, or increase the dryness of dehumidified air with the use of the sunsep™ module, is as follows:
 - Lower the temperature of supply gas at the inlet. (Reduce the load of water vapor against the modules.)
 - Increase the pressure of supply gas.
 - Lower the flow rate of supply gas.
 - Decrease the product dry gas flow rate.
 - Increase the purging gas flow rate.
- 供給ガス流量が変動する場合のパージガス流量について
サンセップ®の特長として、膜素材に含水性があるので相当大きな負荷変動がある場合でも、その周期が比較的短い場合には除湿性能は平均化されます。
Decision on the Purging Gas Flow Rate with Fluctuating Dehumidified Gas Flow?
The sunsep™ membrane has a specific characteristic of retaining water in its material, absorbs even large load fluctuations, and averages its dehumidifying performance if the fluctuation cycle is comparatively short. The flow rate of purging gas can therefore be selected using an average load of product gas flow rate.
- クリーンな加湿用途について
サンセップ®に使用している膜素材は高い水蒸気(水分子)選択透過性をもっているため、他のガス成分の透過は殆どありません。中空糸膜の内側と外側に水分濃度差が生じると、その濃度差を均等にしようとする力が発生します。水分はこの発生した力をドライビングフォースとして、低い水分濃度の方へ膜を透過し移動します。このように、サンセップ®はクリーン加湿器としてもお使い頂けます。中空糸膜内外のガスや流体が異なる場合でも使用が可能です。
Use of Clean Humidification
The material used for the sunsep™ membrane has high selectivity and high permeability of water vapor (water molecules), so permeation of other gases is virtually non-existent.
When differences in moisture concentration between the inside and the outside of a hollow fiber membrane arise, sunsep™ will act to make the concentrations uniform, transferring moisture through the membrane in the direction of the lower moisture concentration. Thus the sunsep™ modules can be used for clean humidification if required.
The modules are also applicable if different kinds of gases or liquid are used on both sides of the membrane.

特別仕様・OEMも承りますので、ご相談下さい。
Please consult your distributor when special specifications and an OEM contract are required.

APPLICATIONS

計装用圧縮空気 Compressed Air for Measuring Devices	空気圧式測定器 自動弁 電/空変換器 ノズルフラッパ エアパージ	Measuring Devices Using Compressed Air Automatic Valve Electric / Pneumatic Converter Nozzle Flapper Air Purging
空気圧制御機器 Air pressure Regulating Devices	圧縮機 エアシリンダ 電磁弁 流体制御素子 エアマイクロメータ エアタービン エアモータ エアベアリング エアオペレートバルブ エアオペレートポンプ 真空ポンプ	Air Compressor Air Cylinder Magnetic Valve Fluid Control Element Air Micrometer Air Turbine Air Motor Air Bearing Air-operated Valve Air-operated Pump Vacuum Pump
自動化機械他 Automation Devices	ロボット ゲーム機 自動販売機 自動包装機器 印刷機械 静電気防止 静電塗装機 乾燥シール 繊維機械 製紙機械 樹脂成形機 半導体製造装置 プリント基板実装機械 光学器械 精密機械 電子機器 船舶補機 オゾン発生機 水素ガス発生機 吸着剤式ドライヤ前処理 ガス吸着前処理	Robot Game Machine Vending Machine Automatic Wrapping Machine Printing Machine Anti-Electrostatic Device Electrostatic Painting / Coating Machine Dry Sealing Textile Machine Paper-Manufacturing Machine Plastic-Molding Machine Semiconductor-Manufacturing Machine Printed Board Processing Machine Optical Instrument Precision Instrument Electronic Device Ship-Building Machine Ozone Generator Hydrogen Gas Generator Preprocessing of Absorption Type Dryer Processing of Gas Absorption
乾燥雰囲気生成 Drying Atmosphere	真空乾燥 凍結乾燥 合成樹脂ペレット 乾燥熟成保存 織物 ゴム 薬品 食品 包装 インク 同軸ケーブル マイクロウェーブ レーダー 導波管 通信 樹脂重合 噴霧乾燥 冷媒ガス 溶接密閉 放電加工 焼鈍 焼結 アーク炉 粉体輸送/保管	Vacuum Drying Freeze-Drying Plastic Pellet Dry-Ripening Storage Textile Rubber Chemicals Foods Packing Ink Coaxial Cable Microwave Radar Waveguide Telecommunication Resin Polymerization Spray Drying Refrigerant Gas Vacuum Welding Electric Discharge Processing Annealing Sintering Arc Furnace Storage and Transportation of powder

湿度調整 Humidity Control	印刷 織物 タバコ 製紙 精密機器 光学機器 電子機器 半導体 農林水産物 鑑賞用植物 写真 博物館 図書館 微生物 細菌培養 湿度計測器	Printing Textile Tobacco Paper Manufacturing Precision Instrument Optical Instrument Electronic Device Semiconductor Agricultural and Marine Products Decorative Plant Photograph Museum Library Microorganism Bacteria Cultivation Hygrometer
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試験研究開発部門 Experiment, Research & Development Field

ガス分析計用サンプルガス除湿	Dehumidification of Sample Gas for Gas Analysis
FIDガスクロマトグラフ支燃用空気除湿	Dehumidification of Air for FID Gas Chromatograph
赤外線吸収ガス分析計	Infrared Absorption Type Gas Analyzer
紫外線ガス吸収分析計	Ultraviolet Absorption Type Gas Analyzer
核磁気共鳴装置	Magnetic Resonance Imager
水分分析計	Water Analyzer
電量分析計	Colorimetric Analyzer
質量分析計	Mass Spectrometer
X線分析装置	X-Ray Analyzer
放射線関連分析計	Radiation Related Analyzer
屈折計	Refractometer
蛍光分光光度計	Fluorescent Spectrophotometer
炎光光度計	Flame Photometer
電子スピン共鳴装置	Electron Spin Resonance Imager
環境試験	Environmental Measuring Device
クリーン加湿	Clean Humidification
無菌加湿	Aseptic Humidification
ラマン分光器	Raman Spectrometer
偏光計	Polarimeter
電気泳動装置	Electrophoresis Device
乾燥保管	Dry Storage
真空乾燥	Vacuum Drying