F Series - Fluid Coils

1/4 to 30 tons

For: Fluid Coolers
Chilled Water Coils
Hot Water Coils
Special Fluids
Gases

Product Guide

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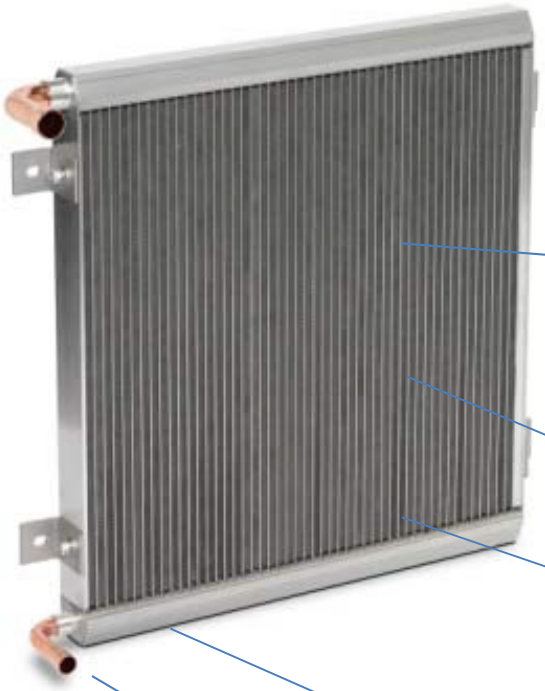
[REV -02]

F Series - Fluid Coils

MicroChannel Features (F Series)



Custom & Standard Sizes
Flexibility and variable dimensions are tailored to our OEM customer needs using MicroChannelSELECT Software. Custom and Quick Ship sizes are available from as small as 4" x 4" to over 80 x 144. Capacities range from ¼ tons to over 30 tons.

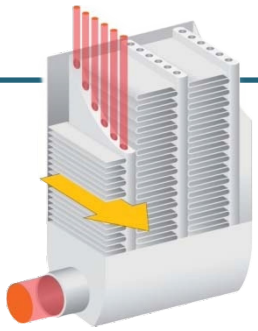
Easy OEM Mounting
The coil itself is a robust frame that provides air tight flush mounting, thereby eliminating unnecessary components and air bypass. Optional L brackets, ¼"-20 studs or ¼"-20 flush nuts are available for easy mounting.

High Performance Fins
A state of the art louvered fin design provides low airside pressure drop and high heat transfer.

Vertical MicroChannel Tubes
EVAPCO Alcoil's patented innovation incorporates vertical tubes that enhance fluid heat transfer, ensure predictable performance and low pressure drop. Tube wall thickness are greater than most automotive and import MicroChannel designs to assure long life operation.

Low Pressure Drop Headers
Unlike any HVAC/R coil, all units have ultra low pressure drop in the headers. This unique feature allows the coil to perform well many demanding applications.

Connections and More
Heat exchangers are available with MPT connections, copper sweat connections and custom orientations.



EVAPCO Alcoil's MicroChannel Coils are based on a Next Generation design that combines high performance flat tubes, state of the art airside fins and low PD headers. The tubes have numerous mini-ports that enhance fluid side performance, while the Airside achieves closer approach temperatures and lower airside pressure drops. The end result is higher overall heat transfer performance,

Typical Configurations

EVAPCO Alcoil's F Series is a multi-purpose coil designed for fluid to air applications, dry coolers, chilled water coils, heating coils, flooded and pumped loop evaporators, gas cooling/heating, special fluid heating/cooling and other applications. It is available as a 1.25V model and 1.25LV extra large header version. These two versions can be configured as F, 2F and 3F sizes.

The F Series differs from the Condenser , Evaporator and Heat Pump Series in that it has full flow pass-through and has application versatility in Medium to High Fluid flow rate applications. Designed with a low pressure drop tube, the F Series has high performance, while rated at 300psig working pressure.

F Models

F Models are Single Module models.

w/ Elbow Connections at 3 o'clock
w/ LBrackets

w/ Straight Connections w/ LBrackets

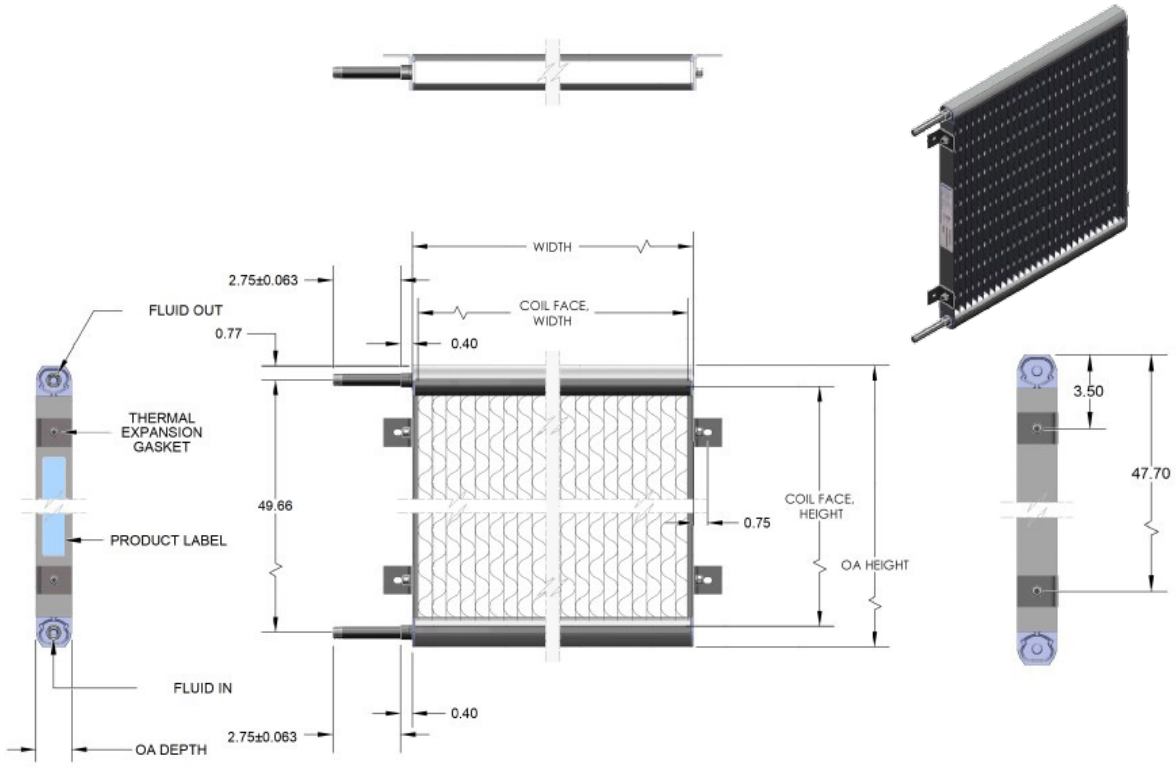
2F & 3F Models

"Multi-Module" versions are designated as 2F & 3F models. These models are typical for larger capacity coils and specialty coils, depending on actual design conditions, type refrigerant or gas, air flow rate and target performance.

w/ Elbow Connections
w/ LBrackets

w/ Elbow Connections
w/ LBrackets

F Series - Fluid Coil



Fluid & Gases		Water, Glycols, Oils, N2, He, Ar, and other Gases R134a and other low pressure refrigerants	
Design Working Pressure		300psig	
Design Working Temperature		250 °F	
Maximum Face Width (F model)		46.4"	
Maximum Face Width (3F model)		138" (up to 188")	
Maximum Face Height		77" (up to 96" upon request)	
Tube Size		1.25" F (Fluid)	1.9" O.A. Depth
Fins		16 FPI, high performance, louvered 24 FPI, high performance, louvered 10 FPI, low PD (optional), flat	
Connection Sizes	(1.25V model)	3/4" & 1" Aluminum MPT 3/8" , 1/2" , 5/8" , 7/8", 1-1/8" IDS Copper	Max 15 GPM
	(1.25LV model)	1" & 1-1/2" Aluminum MPT 1-1/2" Victaulic, 1-3/8"& 1-5/8" ODS Copper	Max 50 GPM
Mounting		L - Brackets, ¼"-20 x ½" Studs, or ¼"-20 Female Flush Nuts	
Testing		Per UL 207 at full pressure, Helium Leak tested	

Model Nomenclature **F24x36x1.25V-15H11-K2199C-01**

- F, 2F or 3F
- Face Width
- Face Height
- Tube Size
- V-Vertical Tubes & LV Vertical Tubes/Large Header
- Item# / Drawing#
- Revision Level
- Blank - No Coating
- C - Coating

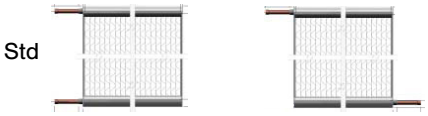
Connection Options

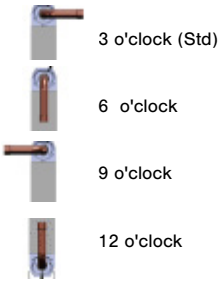
All F Series coils have options for EndCap connections for easy packaging, piping and fit-up. Standard MPT, Male Pipe Thread connections are available and including copper connections shown below. All connections options are available using MicroChannelSELECT™ software.

EndCap Connections

1.25V Models	3/4" Aluminum MPT, & 1" Aluminum MPT, 3/8", 1/2", 5/8", 7/8", & 1-1/8" IDS Copper
1.25LV Models	1" Aluminum MPT, & 1-1/2" Aluminum MPT, 1-1/2" Victaulic , 1-3/8" & 1-5/8" ODS Copper

Location	Same Side Connections (std) Opposite Side Connections
Straight Copper	Same Side Connections (std)
Copper Elbow	Same Side Connections (std) 3 o'clock, 6 o'clock, 9 o'clock, 12 o'clock Opposite Side Connections Custom angles (w/ volume production)
Aluminum MPT	Same Side Connections (std)
Specials	1.25V - ¾" & 1" Stainless Steel or Carbon Steel Pipe, Butt Weld 1.25LV - 1" & 1-1/2" Stainless Steel or Carbon Steel Pipe, Butt Weld



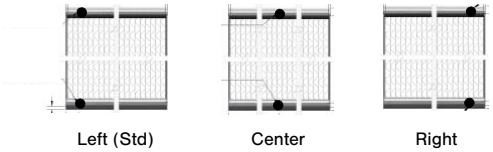


Face Connections

Face Connections are ideal for compact packaging where dimensions and space are critical. Standard location is Left side on the headers. Optional locations are header center or right side of headers. Straight and elbow connections, up to 7/8" IDS are available.

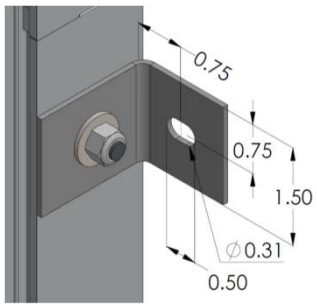
1.25V Models	3/8", 1/2", 5/8", 7/8" ID Solder
1.25LV Models	Not available

Location	Left, Same side (std) Center Right Opposite Sides, Left/Right, Right/Left
Copper Straight (Std)	Same side (Std)
Copper Elbow	3 o'clock, 6 o'clock, 9 o'clock, 12 o'clock Opposite Side Connections Custom angles (w/ volume production)
Aluminum MPT	Not Available
Specials	Not Available



Mounting Options

All models have four practical options for easy mounting and fit into OEM systems.

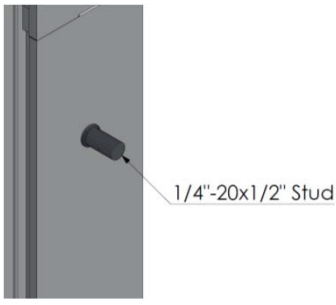


Mounting Bracket

1-1/2" x 1-1/2" with ¾" L Stud & Nut
2 Brackets, each side up to 53" models
3 Brackets, each side & center for 54" and taller models
Thermal expansion gaskets included under bracket

¼"-20 Threaded Flush Nut Insert

Located 3.5" from either end for compact mounting from side wall or strut, or use with customer supplied Bracket.
2 inserts, each side up to 53" models
3 inserts, each side & center for 54" and taller models
5/16" maximum thread depth



¼"-20 Studs

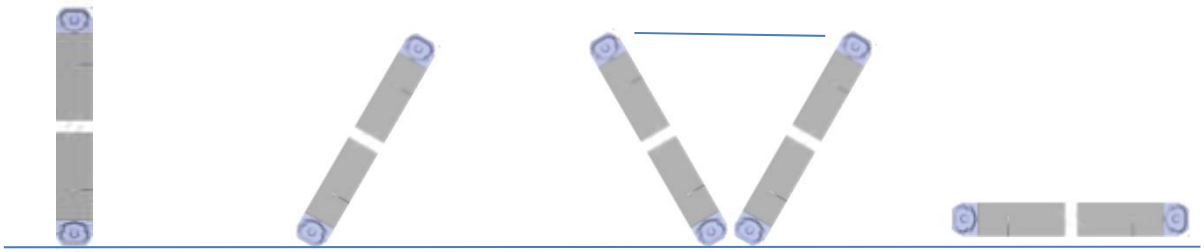
Located 3.5" from either end. For use with customer supplied Brackets or through-the-wall mounting.
2 Studs, each side up to 53" models
3 Studs, each side & center for 54" and taller models

None

Application Notes

Typical Configurations

There are several popular OEM configurations and orientations for the F Series Fluid Coils, depending upon equipment packaging requirements.



Vertical | Angled | "V" Bank | "Flat" – Contact the Factory

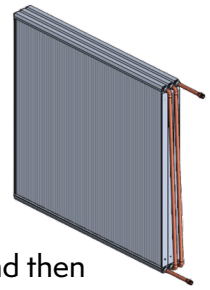
Coil Orientation

EVAPCO Alcoil models are based on a vertical tube design for high heat transfer efficiency. Vertical coil orientation is typical with good performance. Coil performance depends upon airside face velocity, moisture loading and tilt angle. Contact factory for horizontal tube designs.

Connections

In a vertical single pass model the inlet connection should be located at the bottom and outlet connection at the top of the coil. Feeding the coil from the bottom connection and exiting at the top ensures that all of the MicroChannel tubes receive the same amount of flow. If feeding from the top in low flow conditions, there is a possibility the coil can be short circuited. Contact factory for additional connection options.

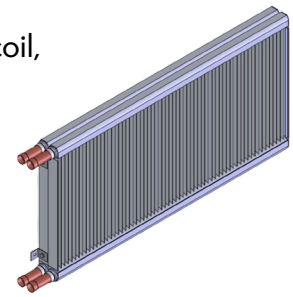
Multi-Row Configurations



Mult-row fluid coils are high performance coils intended to be equal or exceed a traditional 6 row fin/tube performance. Contact the factory for multi-row configurations.

As a high performance fluid coil, the fluid side is configured "in series", entering the first coil, and then the second coil. Air flow is typically counterflow, providing exceptional performance.

When requirements are above the maximum flow rate of 50 GPM (200 LPM) per coil, the fluid can be piped in parallel with the flow split into separate coils/rows.



Application Notes

Fluid Quality

- Maintain fluid pH between 7.0 and 8.5.
- Maintain chloride concentration below 200-ppm.
- All systems, new and existing, should be thoroughly cleaned and flushed using a neutral pH cleaner prior to the addition of heat transfer fluid. Rhomar Water's Hydro-Solv™ is an approved product.
- The fluid MUST contain a multi-metal corrosion inhibitor, which is safe for aluminum.
- If glycol is used, select a multi-metal inhibited glycol, and test concentration at least quarterly. Rhomar Water's RhoGard™ is an approved product.
- If glycol is not used, consult with your water treatment vendor to select a multi-metal corrosion inhibitor suitable for use with aluminum, brass, copper, and steel. Rhomar Water's PRO-TEK® AL is an approved product.
- Avoid Nitrite based corrosion inhibitors.
- Molybdate or Silica based inhibitors may be appropriate.
- Ensure the multi-metal corrosion inhibitor includes an azole in the formulation if any brass or copper components are in the loop.
- Check inhibitor residual and fluid pH at least monthly.
- The fluid loop must be closed to atmosphere.
- A strainer of 60 mesh size should be installed upstream of the heat exchanger to minimize internal fouling.

Corrosion

Due to the all aluminum construction, brazed aluminum heat exchangers are subject to significantly less galvanic corrosion than traditional fin/tube coils, in that there are no dissimilar metals. Normal installations should not require coatings, except in environments corrosive to aluminum. For applications with pollution, chemical emissions, exposure to moist air, or other corrosive environments an Epoxy Electrocoat can be applied to the exterior of the coil for corrosion protection.

Coil Cleaning

Coils may exhibit a build-up of dirt, grass, ragweed and many other airborne contaminants. Avoid pushing or driving materials deeper into the coil while cleaning. Use a soft bristle brush and/or a shop vac to remove as much debris as possible from the surface of the coil. If necessary, wash the face of the coil using a pressure washer with a maximum pressure of 600 psi at the spray tip. This should be done using a fan type spray nozzle, at a distance of 8"–16". The angle of the sprayer should always be perpendicular to the coil face. Follow up by applying commercial cleaner approved for MicroChannel coils and rinsing the coil with water depending on the cleaner instructions and manufacturer's recommendations

Coil Cleaning - Epoxy Coated

Apply CHLOR*RID DTS directly onto the substrate. Sufficient product must be applied uniformly across the substrate to thoroughly wet the surface, with no areas missed. This may be accomplished by various methods such as airless sprayer, roller, brush, pump-up sprayer, or conventional spray gun. The method does not matter if the entire area to be cleaned is wetted. For most applications, an application rate of approximately 300 sq. ft. per gallon is satisfactory. After the substrate has been thoroughly wetted, the salts will have been solubilized and now it is necessary to rinse them off. It is highly recommended that a pressure washer, max pressure 600 psi be used for the rinse off step, but a hose may be used if a pressure washer is not available. The water to be used for the rinse is recommended to be of potable quality. A dilution ratio of 50:1 is recommended for potable water, dependent upon water quality. Follow MSDS safety precautions prior to use.

MicroChannel Coil Family

EVAPCO Alcoil has a full line of MicroChannel coil models for cooling and heat rejection for HVAC/R systems for R410a, R134a, R404a, R717, and other refrigerants. Water and Glycol fluid models are available as both cooling coils and heating coils. Model sizes as small as 3"x 3" to 80" x 144" size.

Condensers ½ to 40 tons

EVAPCO Alcoil manufactures a full range of refrigerant condensers from ½ ton to 40 tons for the HVAC/R industry, rated for 450 psig and 650 psig applications. The C Series Condenser is a robust design with built-in mini-receiver and numerous design options.

Evaporator/Heat Pump ½ to 30 tons

E Series Evaporator and HP Series Heat Pump represent leading edge technology as a direct expansion (DX) cooling coil and/or reverse cycle heat pump coil. With a built-in refrigerant distributor and integrally high water condensate shedding, the E and HP Series provide high performance with all the advantages of MicroChannel technology.

Fluid Coils up to 50 gpm

For water and glycol systems, free cooling, heat recovery and other applications, EVAPCO Alcoil manufactures a high performance MicroChannel specifically for fluid to air featuring advanced water shedding as a cooling coil or high performance as a heating or cooling coil. Rated for 300psig.

Specialty Coils up to 40 tons

EVAPCO Alcoil can configure microchannel coils for other required HVAC/R applications, including:

Reheat & Desuperheater Coils
Flooded & Pumped Loop Evaporators.
Subcoolers

MicroCoils™ up to ¾ ton

For electronics, medical, computer and small appliance products, EVAPCO Alcoil has a family of MicroCoils™ as condensers, evaporators and fluid coils. The MicroCoil™ is lightweight and ultra small for specialty products from 20 to 2000 watts.

EVAPCO Alcoil products manufactured under Patent 8,662,148 and others pending in the U.S., Patents pending in other countries.

Sales Support

EVAPCO Alcoil Serves the U.S., Canada and Mexico With Independent Agents and Factory Sales Personnel to Assist Customers With Product Selection, Applications, and Delivery.

General Inquiries	**Email: Info@evapco-alcoil.com**
Production Lead-times	**Contact Factory**
Purchase Orders	**Email to: Orders@evapco-alcoil.com**
Expedited Orders	**Contact Factory**

EVAPCO Alcoil is the leading manufacturer of airside MicroChannel coils for the HVAC/R and process industries. Located in York, Pennsylvania, EVAPCO Alcoil employees take pride in workmanship, quality and customer Service. We sincerely appreciate the opportunity to be of service.

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