Dry All®

Full Range of HVAC&R Line Products

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c UL us LISTED SA45127

CE

SUCTION LINE ACCUMULATOR WITH HEAT EXCHANGERS

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Introduction

An Accumulator Heat Exchanger is a specialized component used in refrigeration and air conditioning systems to enhance efficiency and reliability. It combines two essential functions: an accumulator and a heat exchanger. The accumulator stores excess refrigerant and prevents liquid refrigerant from entering the compressor, protecting it from damage caused by wet compression. The inner heat exchanger within the accumulator subcools the refrigerant, ensuring that it remains in liquid form before reaching the expansion valve. This prevents refrigerant flashing, which can occur in long piping systems, and helps maintain optimal refrigerant flow and system performance. The Accumulator Heat Exchanger is widely used in various systems, such as multi-split air conditioners, VRF systems, and heat pumps, where efficient refrigerant management is crucial. By combining these two functions in one compact unit, the Accumulator Heat Exchanger saves space and improves the overall operational stability and efficiency of the system.

Key Features

1. **Optimizing Sub-cooling:** Ensures refrigerant remains in liquid form before reaching the expansion device.
2. **Ensuring Superheating:** Prevents liquid refrigerant from entering the compressor, avoiding wet compression.
3. **Space-Saving Design:** Combines accumulator and heat exchanger functions into a single compact unit.
4. **Improved Efficiency:** Optimizes refrigerant flow, boosting system performance and reliability.
5. **Temperature Stability:** Maintains consistent refrigerant temperature, even in systems with long piping.
6. **Enhanced Refrigerant Management:** It stabilizes refrigerant flow and distribution in systems with long piping, ensuring optimal performance across multiple indoor units.
7. **Lower Maintenance:** With improved refrigerant management and protection for critical components, the Accumulator Heat Exchanger can lead to reduced wear and tear, lowering maintenance needs and extending system life.
8. **Cost Savings:** Enhanced efficiency and reduced risk of compressor damage can result in lower operational costs and longer service intervals, providing financial benefits over the system's lifetime.

Application

1. Heat Pumps
2. Variable Refrigerant Flow (VRF) Systems
3. Transport Refrigeration
4. Multi-Split Air Conditioners
5. Industrial Refrigeration Systems
6. Process Chillers
7. Marine HVAC Systems

Working Principle

- The inclusion of an Accumulator Heat Exchanger in the refrigeration system ensures that the refrigerant is properly subcooled before the expansion valve, improving efficiency and preventing liquid refrigerant from damaging the compressor.
- The refrigerant enters the compressor in a low-pressure vapor state. The compressor increases its pressure and temperature through compression, producing a high-pressure, superheated vapor, which is then discharged to the condenser.
- In the condenser, the superheated refrigerant vapor releases heat to the surrounding environment typically via air or water. As the refrigerant loses heat, it condenses into a high-pressure liquid.
- Upon exiting the condenser, the high-pressure liquid refrigerant flows through the inner heat exchanger within the accumulator. This process further subcools the refrigerant, ensuring it remains in a liquid state as it moves through long piping toward the expansion valve.
- The expansion valve significantly reduces the pressure of the subcooled liquid refrigerant, causing a rapid drop in temperature. As a result, the refrigerant partially evaporates, forming a mixture of cold liquid and vapor.
- This refrigerant mixture enters the evaporator, where it absorbs heat from the indoor air or the cooled medium. As the refrigerant absorbs heat, it fully evaporates, turning into a low-pressure vapor.
- The low-pressure vaporized refrigerant exits the evaporator and enters the accumulator. Any remaining liquid refrigerant is captured by the accumulator, preventing it from flowing to the compressor. By ensuring that only vapor is sent to the compressor, the accumulator protects it from wet compression and potential damage. The refrigerant vapor then returns to the compressor to complete the cycle.

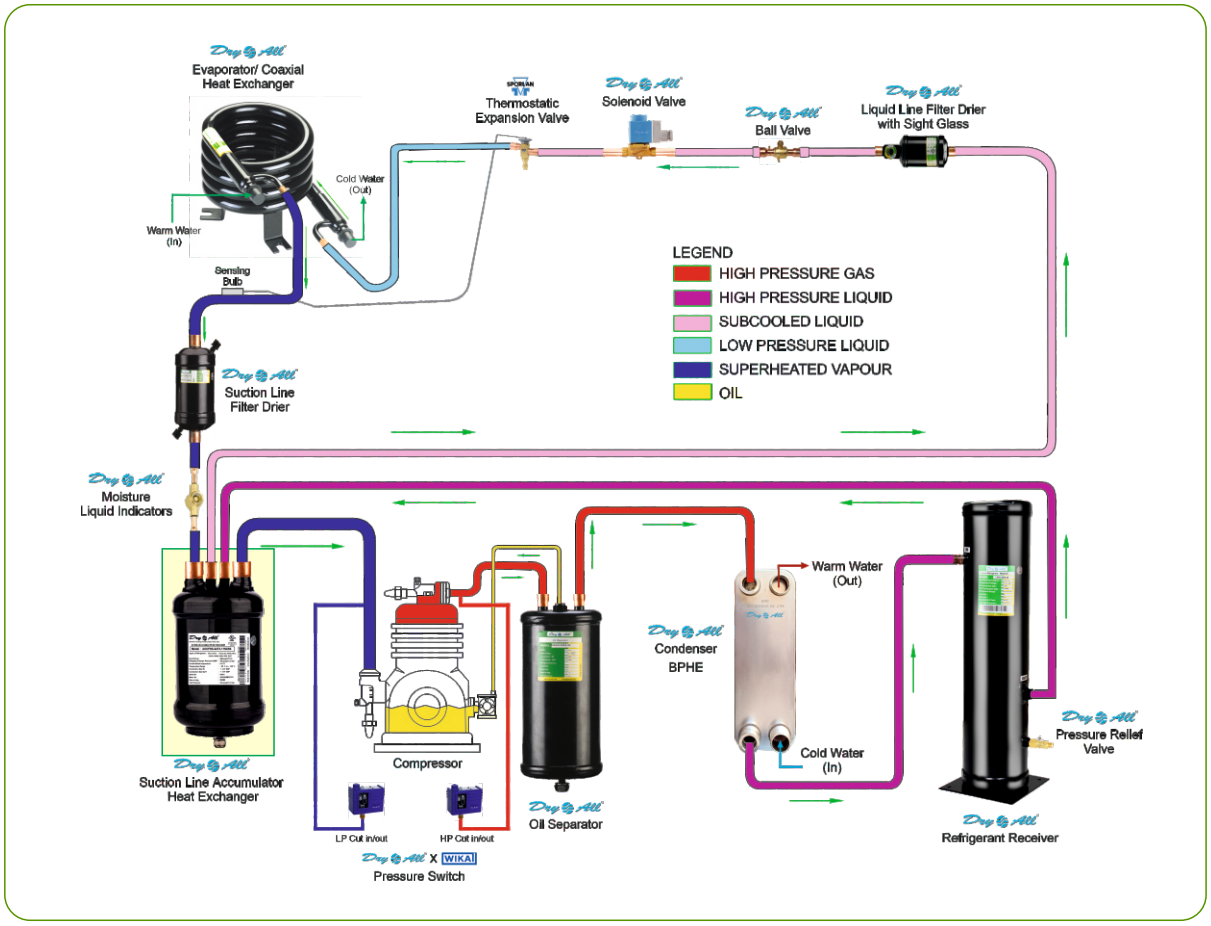
Technical Specifications

- Maximum working pressure 31 Bar (450 Psig.)
- Maximum working pressure heat exchanger coil side 45 Bar (653 Psig).
- Fusible plug available on specific model
- Allowable operating temperature = -40°C To +70°C

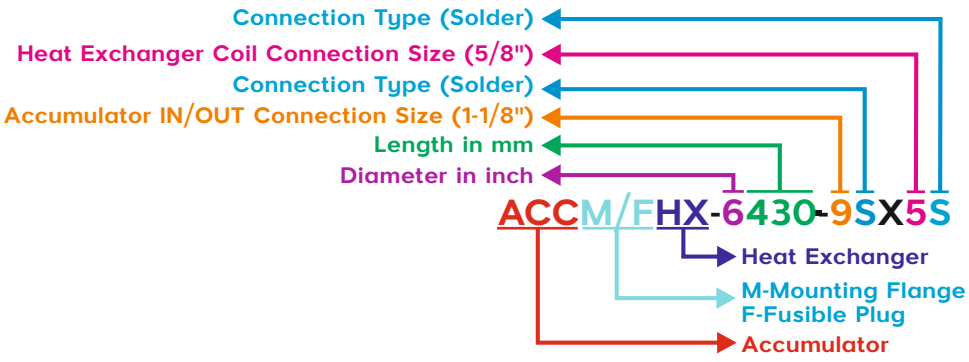
Certificate/Compliances

- UL listed File no. SA45127 [UL 207]
- RoHS Compliance [ROHS-3.0 2015/863/EU Directive]
- REACH Compliance [EC 1907/2006]
- CE Marking- SEP (A4P3)/CAT1/CAT2

Product Installed in Refrigeration Cycle



Nomenclature



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Model Table and Drawing

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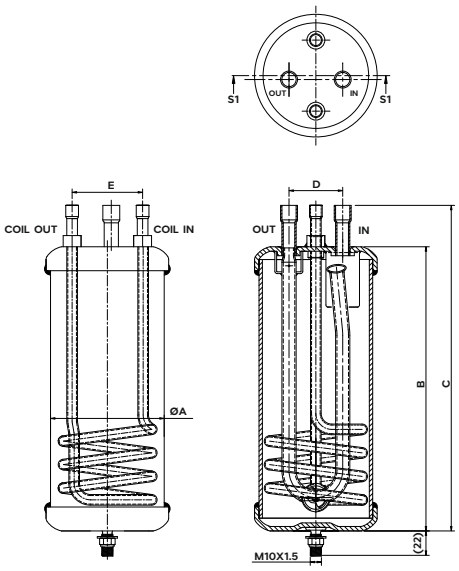
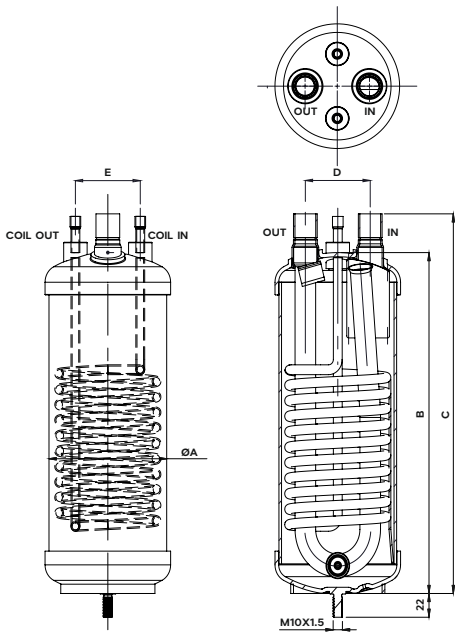
Image



Drawing - 1



Drawing - 2

c UL us LISTED & CE **Certifications are available on request.**

S/N	Dry All model	Dimensions												Mounting Option	Refer Drawing No.
		A		B		C		D		E		F			
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch		
Series - Ø4"															
1	ACCMHX-4160-4SX3S	101.6	4	160	6.30	196	7.72	48	1.89	63	2.48	NA		M10X1.5	1
2	ACCFHX-4254-4SX3S			254	10	292	11.50								
3	ACCFHX-4254-5SX3S			254	10	292	11.50								
4	ACCFHX-4275-5SX3S			275	10.83	311	12.24								
Series - Ø5"															
5	ACCFHX-5216-7SX3S	127	5	216	8.50	254	10	70	2.8	70	2.8	NA		M10X1.5	2
6	ACCMHX-5330-7SX3S			330	13	368	14.5								

S/N	Dry All model	Certification		Holding capacity at +40°F R410A Liquid		Approx Max. Ton. R-410A at +40°F Evaporating Temp	Accumulator In/Out Connection Size (inch)	Coil In/Out Connection Size (inch)
		UL	CE	LBS	KG			
Series - Ø4"								
1	ACCMHX-4160-4SX3S	Yes	NA	2.1	0.95	0.94	1/2" ODF	3/8" ODF
2	ACCFHX-4254-4SX3S	Yes		3.6	1.65			
3	ACCFHX-4254-5SX3S	Yes				2.1	5/8" ODF	
4	ACCFHX-4275-5SX3S	Yes		3.8	1.73			
Series - Ø5"								
5	ACCFHX-5216-7SX3S	Yes	CAT-I	4.5	2.03	4.2	7/8" ODF	3/8" ODF
6	ACCMHX-5330-7SX3S	Yes	CAT-I	7	3.16			

*Note-CE Categories are defined for refrigerant fluid group 2 (Non flammable refrigerants).

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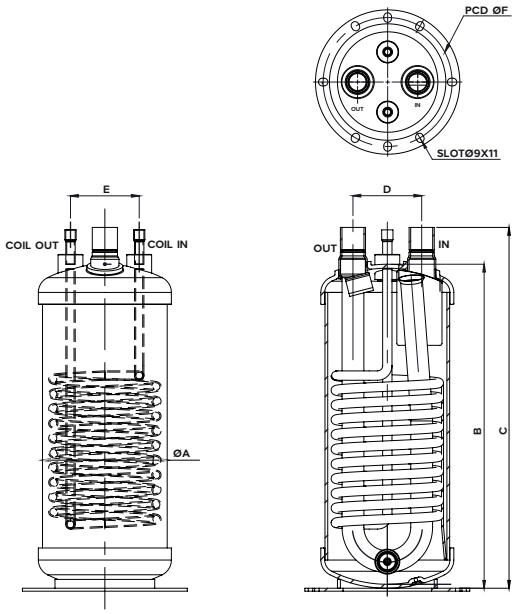
Image



Drawing - 3

& Certifications are available on request.

S/N	Dry All model	Dimensions												Mounting Option	Refer Drawing No.
		A		B		C		D		E		F			
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch		
Series - Ø6"															
1	ACCMHX-6330-9SX5S	152.4	6	330	13	370	14.6	70	2.8	70	2.8	172	6.8	Round Flange	3
2	ACCMHX-6430-9SX5S			430	17	473	18.6								
3	ACCMHX-6430-11SX5S			430	17	480	18.9								
4	ACCFHX-6473-11SX5S			473	18.62	517	20.33								
5	ACCMHX-6635-11SX5S			635	25	683	26.9			100	3.9				
6	ACCMHX-6635-13SX5S			635	25	698	27.5								
Series - Ø8"															
7	ACCMHX-8356-11SX5S	219	8	356	14	433	17.05	100	3.9	140	5.5	220	8.7	Round Flange	3

S/N	Dry All model	Certification		Holding capacity at +40°F R410A Liquid		Approx Max. Ton. R-410A at +40°F Evaporating Temp	Accumulator In/Out Connection Size (inch)	Coil In/Out Connection Size (inch)
		UL	CE	LBS	KG			
Series - Ø6"								
1	ACCMHX-6330-9SX5S	Yes	CAT-I	9.1	4.11	9.45	1-1/8" ODF	5/8" ODF
2	ACCMHX-6430-9SX5S	Yes	CAT-I	13	5.91			
3	ACCMHX-6430-11SX5S	Yes	CAT-I			17.8	1-3/8" ODF	
4	ACCFHX-6473-11SX5S	Yes	CAT-I	13.1	5.95			
5	ACCMHX-6635-11SX5S	Yes	CAT-II	20.3	9.22			
6	ACCMHX-6635-13SX5S	Yes	CAT-II			29.4	1-5/8" ODF	
Series - Ø8"								
7	ACCMHX-8356-11SX5S	NA	NA	23	10.45	-	1-3/8" ODF	5/8" ODF

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Genuine Product

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File No.: L/S&M/01
REV: 00