



DryMAX

MINI-SPLIT AND SPLIT SYSTEM DEHUMIDIFIERS

Precise Control of Challenging and Humid Environments



Product Line and Accessory Catalog

Bulletin DM-1

Rev. 2.2



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DryMAX Product Line and Accessory Catalog

Introduction

DryMAX is a split system dehumidifier, space conditioning unit and heat recovery system, which removes latent energy (water vapor) from moisture-laden indoor air and either returns it as sensible energy to the space or rejects it to the outdoors (or to a water loop). It has been designed to deliver dehumidification without compromising comfort in heating, cooling and neutral air conditions. When both heating and cooling limits are satisfied, just enough of the heat is recovered to bring the air back to space neutral conditions while the remainder is rejected.

DryMAX mini-split dehumidifier systems are designed to provide humidity and temperature control for a wide variety of applications. The system can provide the dehumidification, space cooling and a portion* of the space heating requirement through the system's refrigeration system. The **DryMAX** thermostat also provides control for ancillary space heating. (*On a call for dehumidification and heating, the maximum contribution to the space will be the total heat of rejection, minus the cooling in the evaporator. Many applications will require supplemental heating to meet the design heating load. In such cases, some or all of the required auxiliary heat may be provided by the standard integral electric heating coil.)

DryMAX is subject to stringent quality control and factory test procedures. Each unit is hand built by our experienced technicians in order to provide years of trouble-free service. Due to our policy of continuous improvement, specifications are subject to change without notice. **DryMAX** is available exclusively with R-410A earth friendly refrigerant as of 1/1/2010.

DryMAX dehumidifier systems operate as a closed loop mechanical refrigeration system in a split system unit configuration consisting of an indoor unit containing an evaporator, reheat condenser, air filter, blower, blower motor and controls; and an outdoor condensing unit comprising the compressor, condenser, condenser fan and controls. Alternatively, the condensing unit may include the compressor and a water-cooled condenser and controls for water loop applications. All **DryMAX** units are constructed of a combination of galvanized and galvannealed steel. Outdoor condensing units and non-ducted air handlers are painted with a durable epoxy finish. This approach provides the familiar benefits of mini-split air conditioning systems (ease of installation, small footprint, quiet operation and flexibility) to more demanding indoor environmental control. The **DryMAX** unit is American engineered and manufactured. Each unit is assembled, piped, wired and tested in our Auburn, Maine factory prior to shipping.

Vital Technologies warrants the **DryMAX** dehumidifier to be free of defects in materials and workmanship for a period of one year from date of system startup or one year and ninety days from the date of shipment, whichever comes first. Please see the **DryMAX** Limited Warranty. Inquiries regarding warranty matters should be addressed to Vital Technologies.

Vital Technologies provides complete engineering and technical support to its representatives, distributors and their customers in an effort to ensure proper installation, use and maintenance of **DryMAX** dehumidifiers.



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Systems

A DryMAX system consists of an indoor unit, a condensing unit of matching capacity, refrigeration lines and controls. Indoor units are available as non-ducted, mini-split style cabinets or as ducted units for stand-alone application or integration with an existing air handler. Coated coils for swimming pool enclosures and other corrosive environments are standard. Second stage electric heat is also standard. Condensing units are available for air-cooled applications. A water-cooled condensing unit is also available for chiller, fluid cooler and cooling tower applications. DryMAX line sets are available in standard lengths of 25' and 50' to simplify installation. Systems are shipped with a complete R-410A refrigerant charge and provided with service valves; installation requires brazing and evacuation of line sets. A combination thermostat/dehumidistat (or separate thermostat and dehumidistat) must be installed with each system for control of room conditions. Include all required system components in your order.

2.5 Ton System Combinations

Air Cooled

HS-0025-CV-EH-4 / CA-0025-CV-4 Mini-split style indoor unit with coated coils, outdoor mounted air cooled condensing unit, coated coil. Supplied with service valves and brazing stubs; Pre-charged with R-410A, earth friendly refrigerant.

HD-0025-CV-EH-4 / CA-0025-CV-4 Ducted style indoor unit with coated coils, outdoor mounted air cooled condensing unit, coated coil. Supplied with service valves and brazing stubs; Pre-charged with R-410A, earth friendly refrigerant.

Water Cooled

HS-0025-CV-EH-4 / CW-0025-V-4 Mini-split style indoor unit with coated coils, water-cooled condensing unit. Supplied with service valves and brazing stubs; Pre-charged with R-410A, earth friendly refrigerant.

HD-0025-CV-EH-4 / CW-0025-V-4 Ducted style indoor unit with coated coils, water-cooled condensing unit. Supplied with service valves and brazing stubs; Pre-charged with R-410A, earth friendly refrigerant.

Control options

TH-0015/0025 Programmable electronic combination thermostat and humidistat.

or

Honeywell T7350 series combination thermostat and humidistat, available with a variety of sensing and communication options.

or

T-0015/0025 Electromechanical thermostat. Must be used with separate close-on-rise humidistat.

H-0015/0025 Electromechanical close-on-rise humidistat. Must be used with separate thermostat.

Line Sets*

LS-0025-25 Fully insulated, ½" liquid/discharge and 7/8" hot gas lines-25 foot length.

LS-0025-50 Fully insulated, ½" liquid/discharge and 7/8" hot gas lines-50 foot length.

*Custom line lengths available on special order, not to exceed 50 feet.

Disconnect option

ED-0015/0025 Disconnect

Condensate Pump option

CP-0015/0025 Required where gravity drain is not possible. 3 gallon/hour submersible pump sits in drain pan. 100 foot maximum tubing length.

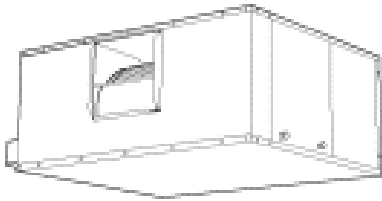


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Indoor Units

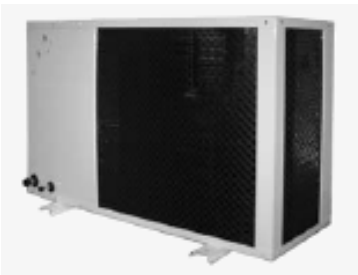


Mini-split style, non-ducted, wall mount air handler with low-noise blower, evaporator, reheat condenser, condensate drain, and electrical power and control terminals. Cabinet finish is off white powder coat baked enamel. Provided with double deflection supply register and 12" x 24" return filter grille.



Ducted style, ceiling mount air handler with low-noise blower, evaporator, reheat condenser, condensate drain, and electrical power and control terminals. Cabinet finish is galvanized. Provided with 12" x 24" return filter grille; grille may be mounted on unit for non-ducted return or at return duct termination in ceiling or wall. Suitable for stand-alone ducted application or integration with an

Condensing Units



Outdoor mount, air-cooled condensing unit featuring Copeland Compliant Scroll compressor technology, variable speed condenser fan standard. Coated coil standard, suitable for coastal applications. Separate service disconnect required.



Indoor mount, water-cooled condensing unit featuring Copeland Compliant Scroll compressor technology, brazed plate refrigerant to water heat exchanger and water flow modulation valve. Separate service disconnect required.



Controls



TH-0015/0025

Touchscreen programmable electronic combination thermostat and dehumidistat. 24 volt AC/DC system powered with integral back up.



H-0015/0025

Electromechanical human hair dehumidistat. 24 volt AC. The traditional industry workhorse by Regin. Recommended for difficult corrosive environments. Use with the T-0015/0025.



T-0015/0025

Electromechanical 2 heat/2 cool thermostat. 24 volt AC. Made by Honeywell. Use with the H-0015/0025.

Disconnect



ED-0015/0025

Non-fused disconnect 60 Amp / 240Vac max. Features a removable cover housing, which provides open area for easier mounting and installation. Galvanized steel enclosure with powder coat paint ensures long lasting corrosion protection. 4 convenient one-inch combination knockouts on back and bottom. Cover padlock provision. Made by Square D.

Condensate Pump



CP-0015/0025

3 gallon/hour submersible pump sits in drain pan. Efficient removal of condensate where gravity is not sufficient. Built in non-return valves. No mechanical floats to stick. All electrical components safely encapsulated against moisture ingress. Connects to fused condensate pump power terminals provided standard in the indoor unit. Use with ¼" I.D. tubing (maximum 100 feet in length, maximum 19 feet of head, not supplied).

Charcoal Filter



CF-0015/0025

An excellent odor-controlling component combined with a particulate remover. Carbon (Coconut shell based) impregnated synthetic media, containing eight grams of carbon per square foot. Frame is a die cut, rigid, water resistant board with the media attached directly with a cold glue application. Replaces standard 12"x24"x1" filter grille filter. Available singly, in cartons of 6 or in cartons of 12 for remediation of odors.

Line Sets



Line sets come paired, rolled and capped.

LS-0025-25V 2.5-ton line set, 25 foot length.
LS-0025-50V 2.5-ton line set, 50 foot length.

Top quality soft annealed copper tubing and neoprene foam rubber insulation. Both lines are insulated. All DryMAX line sets are supplied with dust caps, ready for brazing. 2.5-ton sets include ½" liquid/discharge and 7/8" hot gas lines.



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Specifications

Indoor Air Handling Units	HS-0025-CV-EH-4	HD-0025-CV-EH-4
Volts/Ph/Hz	120/1/60	120/1/60
Fan HP	0.5	0.5
Min. Cir. Amps	20	20
Max. Fuse Size	20	20
Min. Wire Size	#12	#12
Control Voltage	24 VAC	24 VAC
Fan CFM	650	650
Coil Finish	Phenolic	Phenolic
Cabinet Finish	Powder Coat Epoxy	Galvanized
Dimensions (" L x W x H)	32 x 17 x 26	36.5 x 32 x 14
Weight (lbs.)	125	125

Condensing Units	CA-0025-CV-4	CW-0025-V-4
Volts/Ph/Hz	208-230/1/60	208-230/1/60
Fan HP	1/4	N/A
Fan FLA	1.5	N/A
Compressor HP	2.5	2.5
Compressor FLA	15.7	15.7
Compressor LRA	77	77
Min. Cir. Amps	21.1	19.6
Max. Fuse Size	35	20
Min. Wire Size	#10	#12
Control Voltage	24 VAC	24 VAC
Coil Finish/Condenser Material	Phenolic	Stainless Steel
Cabinet Finish	Powder Coat Epoxy	Galvanized
Dimensions (" L x W x H)	39 x 19 x 25	24 x 24 x 24
Weight (lbs.)	150	140

Capacities

Entering Air Temperature/Relative Humidity

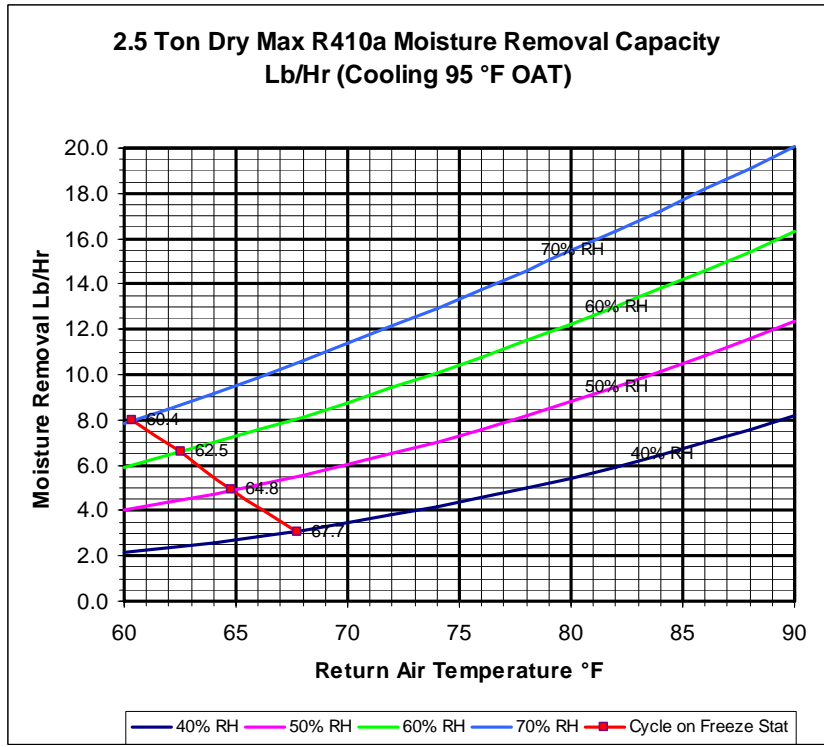
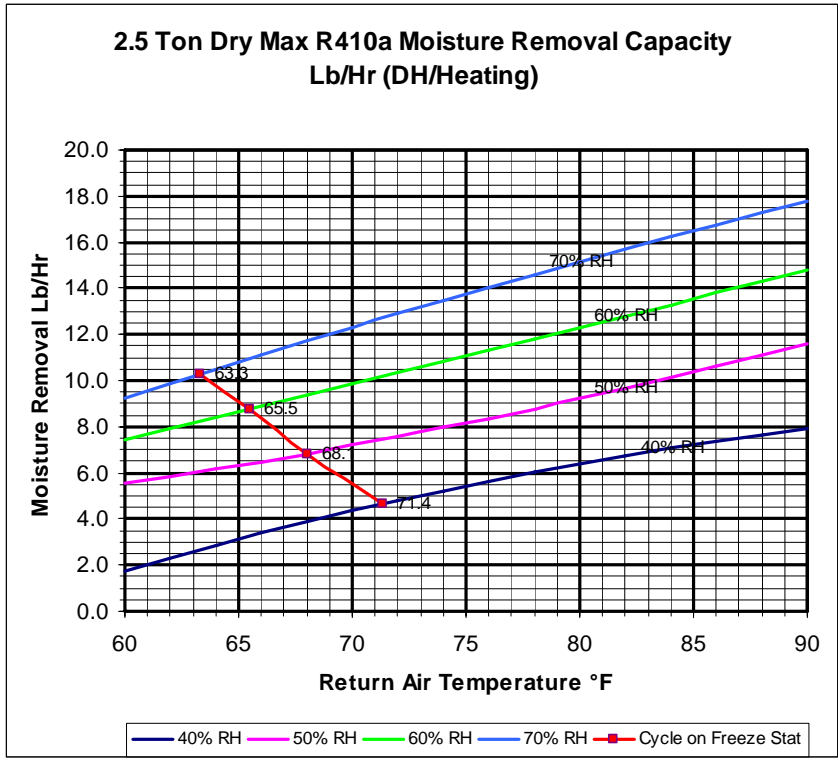
	66 °F		70 °F		82 °F		90	
	50%	60%	50%	60%	50%	60%	50%	60%
Moisture Removal, DH mode (LB/Hr)	6.5	8.9	7.2	9.8	9.7	12.8	11.6	14.8
Sensible Cooling 95°F ODT (MBH)	19.6	15.9	18.0	16.1	18.9	16.6	19.1	16.8
Total Cooling 95°F ODT (MBH)	23.0	23.8	24.3	25.4	28.9	30.3	32.2	34
Total Heat of Rejection, heating (MBH)	31.9	32.8	33.3	34.3	37.7	39.0	40.8	42.3
Space Heating, heating (MBH)	12.8	15.7	14.1	17.2	18.5	22.4	22.2	26.3

Please note: Due to Vital Technologies' policy of continuous improvement, specifications are subject to change without notice.



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Moisture Removal Capacity Curves DryMAX –0025 Series R410A



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Ordering Information

Determine the capacity required for the application. In some cases more than one unit may be required to provide full control. One example is the retrofit of an indoor pool enclosure with a load of 20 lbs./hour; normally this application would call for a 5-ton central system, but it may be served by two 2.5-ton **DryMAX** systems. Note that when multiple units are installed in a common space, offset control settings can provide staged operation, further reducing operating costs and increasing energy efficiency.

Each system must include an indoor unit, a condensing unit, a line set and control(s). A service disconnect will be required on the condensing unit to meet code in most jurisdictions. Consider if gravity will be sufficient for condensate drainage or if you will require a condensate pump. Charcoal filters are available to address unusual odor requirements.

Also note that **DryMAX** does not provide outside air and exhaust functions required in indoor pool environments. Industry guidance suggests providing 0.5 CFM outside air per square foot floor area. For smaller therapy and residential applications a continuous duty 100-200 CFM exhaust fan and transfer air will generally do an excellent job fulfilling these needs. A commercial application utilizing multiple **DryMAX** units should be provided with suitable exhaust and make-up air. In severe climates an energy recovery ventilator can be a useful means of meeting both exhaust and tempered make-up/outside air requirements.

Caution: Ensure that any exhaust fan(s) generating a negative pressure in the space will not interfere with atmospheric combustion appliances or other systems, creating a potentially hazardous condition.

Example: A 12'x20' basement exercise room at 78°F with a 6'x6' spa tub requires approximately 6.5 pounds/hour moisture removal to maintain conditions below 50% RH. From the performance specifications provided above, we determine that a single 2.5-ton **DryMAX** system will meet the load. Wall mount will minimize costs and provide more than adequate air distribution. Coated coils are suitable for the chlorine treated hot tub environment. There is a basement floor drain by the hot tub, so a condensate pump will not be needed. As this is a residential application with adjacent space for a pad, we will select an outdoor mounted air-cooled condensing unit. The indoor unit will be wall mounted on an outside wall in the vicinity of the pad for the condensing unit; a 25' line set will be sufficient. The homeowner is computer savvy and will like the convenience and features of the programmable electronic control. Order: 1 **HS-0025-CV-EH-4** Mini-split style indoor unit, 1 **CA-0025-CV-4** outdoor mounted air cooled condensing unit, 1 **ED-0015/0025** disconnect, 1 **LS-0025-25V** line set, and 1 **TH-0015/0025** programmable electronic combination thermostat and humidistat. In addition, a 120 CFM continuous duty, quiet bath fan may be specified to provide ½ CFM per square foot of ventilation make-up air while maintaining the room at a negative pressure relative to the home above. There are no atmospheric combustion appliances, open fireplaces or radon mitigation systems that will be negatively impacted by the exhaust fan in this basement.



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Industry Recognition for **DryMAX**:



Silver Medal, Indoor Air Quality Category, 2008 Dealer Design Awards



Honorable Mention, Indoor Air Quality Category, 2009 AHR Expo Innovation Awards

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