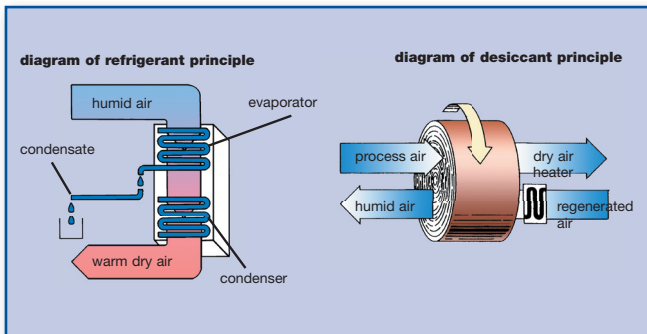


Dehumidification types



The operation of refrigerant dryers

Refrigerant dryers cool air intake considerably by means of an evaporator section in a closed refrigeration system. As a result of this cooling, the relative humidity of the air over the evaporator raises to above 100% and water vapour condenses. This water (or condensation) is either drained into a reservoir or through a hose to a drain, water container or a suitable outside location. The heat generated in the cooling system condenser is used to warm the returned air to a temperature above that of the original intake. Each time the room air is passed through the dryer a quantity of moisture is removed from the air, therefore the humidity within the room is reduced. Refrigerant dryers are typically positioned within the room to be dried and require little attention whilst in operation.

The operation of desiccant dryers

A desiccant dryer uses the hygroscopic properties of moisture-absorption materials such as silica gel or lithium chloride. These materials are impregnated within a rotating ceramic wheel, over which the humid air from the room is blown. The hygroscopic material absorbs a large percentage of the moisture from the air, therefore reducing the humidity in the area. The wheel is left very wet, it then continues to rotate slowly and the section which is saturated with moisture is heated with an electric heater, to vapourise the water. This warm and very humid air is then expelled outside through a length of flexible ducting. As well as being able to place a desiccant unit within a room that is to be dried, desiccant dryers are often used in applications where it is not possible to position a dryer, such as hazardous areas or areas with limited access such as pipes and tanks.