MULTISTACK



ARZ

AIR-TO-WATER MODULAR DHRC® W/ MULTI-MODE SOURCE/SINK

MULTISTACK.COM

2022 finds us on the brink of major changes in the built environment. The world is moving away from fossil fuels and HVAC design professionals everywhere are considering how they support and execute the mission of electrification. Refrigerants are evolving and being phased out in favor of those with substantially lower GWP. *It's time to lead...*

Geothermal bore fields, also called well fields, are the gold standard for high efficiency, sustainable, and net-zero system design. Well fields offer a temperature stable environment and the ability to use the earth to store thermal energy. Unfortunately, well fields are expensive, often costing millions of dollars, and because of that projects frequently do not move forward. Some projects, regardless of budget, aren't able to use a well field because of the geology of the site or simply the lack of available land.

The first priority of a highly efficient system must be to leverage the heat you already own. Using that owned heat first reduces the need to source or dispose of heat in the well field. The second priority must be to use the air as a source/sink whenever it is more efficient to do so. By running on the air-cooled source/sink for most of the year and only using the well field when it's the more efficient choice you can reduce the size of the well field by up to 70%. The new ARZ gives you the ability to do both in one chiller and puts "geothermal well field efficiency" well within reach of most budgets.

ARZ is a sophisticated design evolution of the field-tested and proven ARA. ARA is a 4-pipe air-cooled heat pump with integrated DHRC (Dedicated Heat Recovery Chiller) capability. Simultaneous load is handled by an integrated water-to-water heat exchanger. Unneeded heat is rejected to the atmosphere while needed heat not satisfied by simultaneous operation is acquired from the atmosphere. The ARA is essentially an air-to-water heat pump with an auxiliary water-to-water heat exchanger. It was the first of its kind.

VME II™ is the water-to-water analogue of the ARA. With VME™ unneeded heat is rejected to a geothermal bore field (any source/sink of adequate size really) and, if necessary, needed heat unavailable from simultaneous operation is acquired from the bore field. VME was also an industry first.

ARZ is a multi-mode source/sink heat pump that allows you to choose your source sink based on highest efficiency. It successfully combines the most desirable attributes of ARA and VME II. If the bore field has the most favorable temperatures use it to reject or acquire heat unavailable from simultaneous operation. If outdoor ambient is more favorable then use the ARZ in air-source mode. This is true Multi-Mode operation that gives you geothermal well field level efficiency for a fraction of the cost.

Today the ARZ is available in R-410A and will soon transition to R-454B. All ARA options are available for the ARZ including MultiPRO™ chiller plant optimization.

Reach out to your local **Multistack** design professional to discuss how we can help you realize your goals for electrification and sustainability.





The Multistack Group

Customer Driven Innovation℠

The right choice for the future... today.

OUR MISSION

To design and build reliable, energy-efficient equipment that fully supports the transition from fossil fuels to renewables through electrification.

OUR VISION

To create a world where environmentally sensitive design practice, reliability, and redundancy coexist and are embodied in the worlds most advanced HVAC equipment.

SUSTAINABLE CHOICES

At **Multistack**, we recognize and respect the importance of providing HVAC solutions that promote energy and water efficiency, utilize the best refrigerant choices available, and embrace the transition from fossil fuels to electrification.

Water and air-cooled **MagLev®** chiller platforms achieve superb efficiency across their full range of operation. Our unique **MagLev** chiller design and unrivaled Transitional Efficiency chiller control algorithms deliver outstanding part-load performance at all condenser-water or ambient temperature conditions. **MagLev** also offers refrigerant choices recognized worldwide as safer for the environment: R-1234ze, R-513A, and R-515B.

Our modular product's design allows you the freedom to use just enough energy to meet your current needs, while offering you the flexibility of incorporating additional modules as your operations grow. Minimizing embodied energy is an important design focus and we pride ourselves that our modular chillers deliver the industry's highest cooling and heating output per pound. If you're looking to cool and heat your building with as little environmental impact as possible, look no further than **Multistack**!

Reach out to your local Multistack design professional to discuss how we can help you realize your design goals for:

- Electrification
- Energy efficiency
- Water usage efficiency
- Energy & heat recovery
- Choosing sustainable refrigerants
- Minimizing refrigerant charge
- Minimizing embodied energy
- Minimizing environmental and physical footprint

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