

DOUBLE SKIN AIR HANDLING UNIT MODEL: DE SERIES

ISO 9001



Double Skin Air Handling Unit Engineered for Performance, Efficiency & Durability

- **Superior Air Quality** Optimized airflow for a healthier environment
- Enery-Efficient Insulation Advanced thermal & Acoustic protection
- Heavy-Duty & Leak-Proof
 Durable construction with
 minimal leakage
- Easy Maintenance Hinged access doors with viewports for quick servicing
- Flexible Design Modular system with multiple blower orientations



The structural framework is the foundation of every Star Aire

internal components. Constructed from extruded aluminum

longevity even in harsh conditions. Each aluminum section is securely connected with reinforced ABS plastic, effectively

preventing condensation at the corners for enhanced

profiles, the frame offers superior corrosion resistance, ensuring

unit, providing strength and durability to house essential





Beyond the Frame

Sandwich Paneling

Our double-skin panels are designed for durability, easy maintenance, and superior air quality. Featuring fiber glass insulation (40kg/m³ density) with a 'K' value of 0.68 W/m³K, they minimize heat transfer while reducing the risk of dirt accumulation and internal insulation erosion.

Beyond the Fram

performance and reliability.

Each panel consists of a pre-painted 0.7mm outer sheet and a zinc-coated 0.5mm inner sheet, available in 50mm, 45mm, or 25mm thicknesses. Panels are securely fixed with self-drilling, selftapping screws for easy removal and servicing. Optional polyurethane foam insulation and custom panel specifications are available upon request.



Sandwich Paneling



Base Frame

The base frame of each AHU section is constructed from 1.6mm thick galvanized steel (GI) sheet metal, bolted together using high-strength GI bolts to ensure structural stability and ease of transport, lifting, and positioning on site.

For efficient and airtight assembly, gaskets and sealing materials are integrated at sectional joints, along with connection clamps to facilitate quick and secure installation.

Base Frame





Fan Section

Motor & Drive

Fan Section

Each unit is equipped with a high-performance centrifugal fan driven by a single motor and certified to meet the highest industry standards. The fan is of Double Inlet Double Width (DIDW) type, available in forward or backward curved blades, and constructed from galvanized steel for enhanced durability. To ensure quiet and stable operation, the fan is mounted on antivibration spring isolators, effectively minimizing both static and dynamic vibrations. Additionally, flexible connections between the fan discharge and casing further reduce vibration transmission to the unit structure, significantly lowering noise levels.

Each unit is equipped with a carefully selected motor and drive package to ensure optimal performance and efficiency. The motor is a TEFC (Totally Enclosed Fan Cooled) model, featuring Class 'F' insulation and IP55 protection, making it suitable for demanding operating environments.

The motor and fan assembly is mounted on a dedicated base frame, isolated from the main structure using rubber mounts to minimize vibration transmission. Motion is transferred through fixed pulleys as standard.

Optional upgrades include variable pitch pulleys and Variable Frequency Drive (VFD) for enhanced control and energy efficiency.



Motor & Drive



Cooling Coils

Cooling Coils

Our high-performance cooling coils are crafted with seamless copper tubes and die-formed end plates for strong brazed joints, paired with corrugated plate fins that ensure maximum heat transfer efficiency. Built from durable 16-gauge material with 1" flanged edges, the coils are easy to stack and mount, and come with standard 1/8" brass FPT vent and drain connections for easy maintenance. Each coil is leak-tested at 315 psig and can operate at temperatures up to 300°F. Options include copper or aluminum fins, epoxy coating for corrosion resistance, and DX coil configurations upon request. All coils are certified to ARI Standard 410 for guaranteed performance.





Moisture Eliminator

Moisture Eliminator

To prevent water carryover at high air velocities (above 500 FPM or 2.5 m/s), our AHUs are equipped with a Droplet Eliminator, ensuring optimal performance and air quality.

Featuring aerodynamically designed polypropylene blades, the eliminator effectively captures moisture without impeding airflow. It is housed within a robust, screw-fixed extruded aluminum frame, providing excellent structural stability and long-lasting durability in demanding air handling conditions.

Drain Pan

The condensate drain pan is essential for effectively removing excess moisture generated during the cooling process. Designed with front and rear drain connections, the pan is made from powder-coated galvanized steel (GI) for enhanced corrosion resistance.

Its wide, V-shaped sloped design ensures rapid and complete drainage, helping to prevent standing water, microbial growth, and mildew formation. Optional stainless steel drain pans are available for added durability and hygiene in high-demand environments.



Drain Pan



Control Dampers

Control dampers play a key role in regulating airflow within the AHU, helping to optimize air distribution, minimize pressure loss, and reduce noise levels.

Our mixing box dampers feature aerodynamically designed, contra-rotating blades that ensure smooth and efficient operation. The blades are driven by a durable polycarbonate gear mechanism, enabling precise control and reliable performance in various air handling applications.

Control Dampers







Filters

Air filtration is a critical component of the AHU system, ensuring superior Indoor Air Quality (IAQ). To meet varying environmental requirements, we offer both single-stage and multi-stage filter options, all from reputable manufacturers and compliant with ASHRAE and Eurovent standards.



Filters are housed in galvanized steel frames for easy side removal and maintenance. Manometer plug ports are included to monitor pressure drop across the filters, providing a clear indication when maintenance or replacement is needed.

Filter

AHU DATA&DIMENSION







| | | | | DIMENSION (MM) | | | | | |
|-------------|-------------------|----------------------------|----------|----------------|-----------|----------|-----------|-------------|-----------|
| MODEL DB | AIR VOLUME CFM | COOLING CAPACITY MBH | FAN SIZE | H (mm) | W (mm) | A FAN | B COIL | C FILTER | L (mm) |
| 48/60 | 1600/2000 | 80 | 225 | 842 | 1066 | 680 | 645 | 620 | 1945 |
| 80 | 2670 | 80 | 225 | 842 | 1296 | 680 | 645 | 620 | 1945 |
| 100 | 3330 | 100 | 250 | 842 | 1522 | 680 | 645 | 620 | 1945 |
| 120 | 4000 | 120 | 280 | 990 | 1458 | 680 | 645 | 620 | 1945 |
| 150 | 5000 | 150 | 315 | 1170 | 1448 | 680 | 645 | 620 | 1945 |
| 180 | 6000 | 180 | 400 | 1170 | 1662 | 1000 | 645 | 620 | 2265 |
| 200 | 6670 | 200 | 400 | 1320 | 1595 | 1000 | 645 | 620 | 2265 |
| 225/250 | 7000/8330 | 250 | 450 | 1320 | 1898 | 1000 | 645 | 620 | 2265 |
| 300 | 10000 | 300 | 500 | 1470 | 1969 | 1000 | 645 | 620 | 2265 |
| 350 | 11670 | 350 | 500 | 1470 | 2234 | 1000 | 645 | 620 | 2265 |
| 400 | 13330 | 400 | 560 | 1620 | 2257 | 1000 | 645 | 620 | 2265 |
| 500 | 16670 | 500 | 630 | 1770 | 2488 | 1000 | 645 | 620 | 2265 |
| 600 | 20000 | 600 | 710 | 1920 | 2675 | 1380 | 645 | 620 | 2645 |
| | | | | | | | | | |

Note : The total length of the unit can be various depending on units configuration. For final dimension, refer to AHU selection