YMA
Air Handling Units

YORK
BY JOHNSON CONTROLS

Certifications

EUROVENT CERTIFICATION COMPANY SCRL
62 Bd de Sébastopol 75003 Paris FRANCE - RCS Paris B 393 363 460 - Code APE : 748K

Certification Diploma N° :

04.01.048

EUROVENT Certification Company certifies that

Air Handling Units

from

AL SALEM YORK Manufacturing Co,Ltd

Located at

P.O Box 122336 , 21332 Jeddah Saudi Arabia

Range

YMA

Software for calculation of performances

Nexus v.601.3014

Trade name

YORK

have been assessed according the requirements of following standard

OM-5-2006

The list of certified products is displayed at :

http://www.eurovent-certification.com

Manufacturing places

Jeddah , Saudi Arabia

AL SALEM YORK Manufacturing Co,Ltd
is authorised to use the EUROVENT Certification mark in accordance with the rule
specified in the Operational Manual
OM-5-2006

Jacques BENOIST
Director of certification

Approval date : 22/01/04
Re-checked on : 01/12/07

Valid until : 30/09/08

ARI Standard 410

UKAS QUALITY MANAGEMENT 001

AHU N° 04-01-048 Range YMA

BY JOHNSON CONTROLS

YMA Modular Air Handling Units

Air Volume Range 0.25 m^3/s to 26 m^3/s

The YMA family of air handling units has air volumes ranging from 0.25 m^3/s to 26 m^3/s and total static pressures as high as 1600 Pascal. Custom designed units with larger capacities up to 50 m^3/s are also available. All units are designed using NEXUS 1V.601.3014.

All units are constructed from extruded aluminium profiles and have flush fitting panels and doors to provide aesthetically pleasing lines. All panels are completely removable.

The thermally insulated rigid enclosure is fully sealed and has a high acoustic performance.

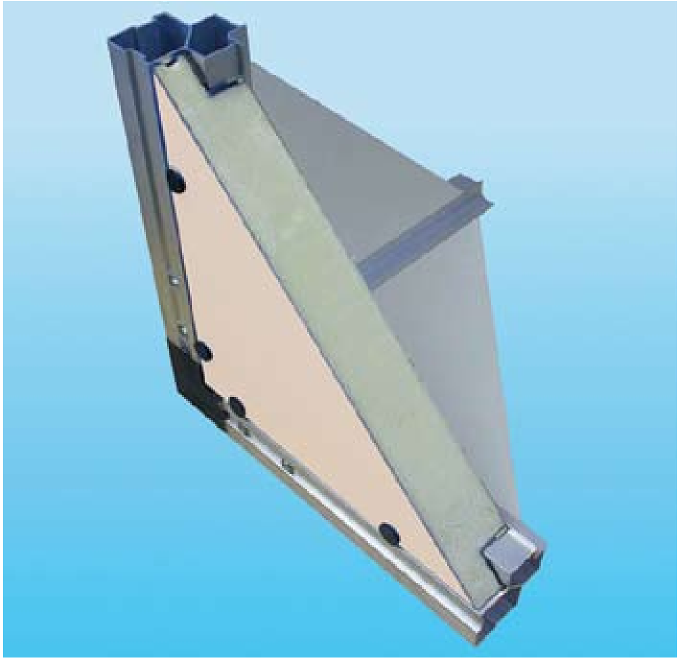
Accurate computer selection ensures cost effective matching of all components to satisfy the specified conditions. YMA Air Handling Units can be manufactured in varied configurations, with a wide selection of components, to meet customer requirements.

They may include combinations of any of the following:

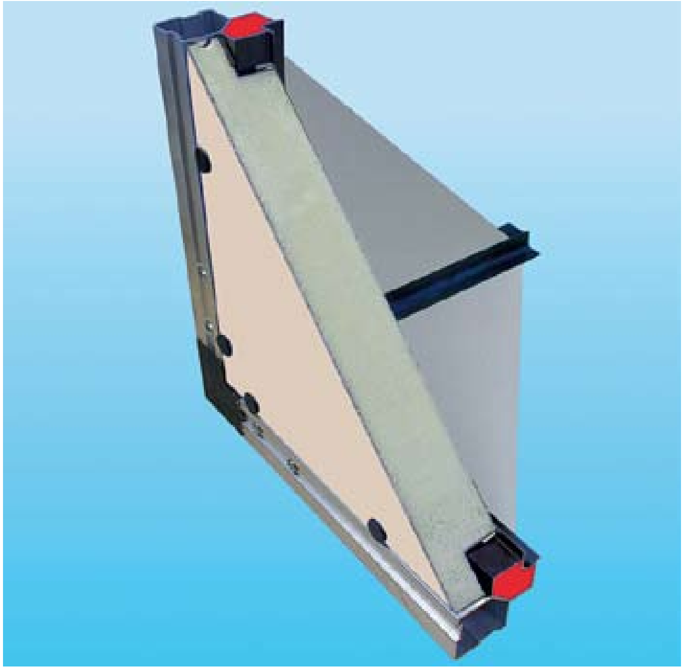
- **Single or double decked units.**
- **Indoor or outdoor applications.**
  Outdoor units are available with a flat or sloping roof, louvres, rainhoods, birdscreens and special finishes.
- **Site assembled units.**
  Where space constraints restrict the size of a single item modules can easily be aligned and locked together by gaskets and stainless steel bolts inserted into factory predrilled assembly holes.
- **Air mixing boxes.**
- **Various filter options.**
- **Cooling and heating coils.**
- **Cell deck Humidifiers.**
- **Heat recovery systems.**
- **Various fan types and drives.**
- **Sound attenuation.**
- **Miscellaneous components.**

The Frame

The low weight corrosion resistant aluminium alloy twin box section profile is designed to provide strength and stability. Gaskets, between panels and profile, ensure airtight sealing. A thermal bridge free profile can be provided. Unit sections are mounted on a 4mm thick extruded aluminium base frame.



Standard Construction



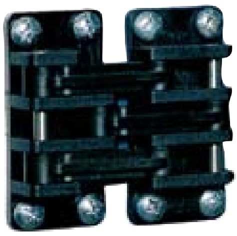
Cold Bridge Free Construction

Panels

Standard 30mm or 60mm double skinned galvanised panels comprising 0.6mm internal and external skins and 40kg/m3 density pressure injected polymerised polyurethane foam insulation. Optional panels can be manufactured from pre-plastic coated steel, or Perluman. Panels are fixed to frame with galvanised screws.

Access

Panels are fully removable. Access doors are equipped with half turn nylon handles and cam locks. Hinges are fibreglass reinforced plastic with stainless steel pivots. Optional double glazed viewing portholes can be supplied.



Dampers

Extruded aluminium dampers are the opposed blade type. Flanged frame is provided for ductwork connection. A gasket is installed to minimise air leakage. Spindles are manufactured from aluminium or nylon and have nylon bushes. Control links are aluminium.

Web Address: http://www.eurovent-certification.com

Programme	Participant	Brand
Air Handling Units	AL SALEM - YORK MANUFACTURING CO.LTD.	YORK

Air Handling Units

AHU

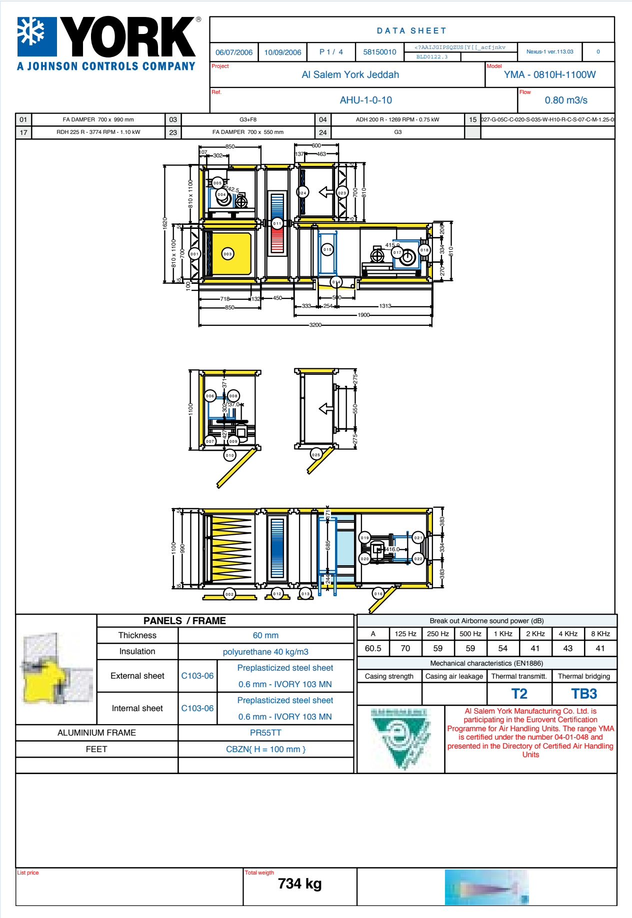
04.01.048	Range: YMA	
Construction Sizes		
Model	Height	Width
Designation	mm	mm
YMA-XXXX/YYYY WITH: XXXX=HEIGHT AND YYYY=WIDTH	from 450 to 4050mm in step of 40mm	from 500 to 7000mm in step of 50mm

Performance characteristics YMA	Catalogue
	Selection Software : **NEXUS-1 v.601.3014**
Performance characteristics (air flow, available pressure, power input, cooling and heating capacity, sound power, heat recover y system) as given in the above selection software are certified.	

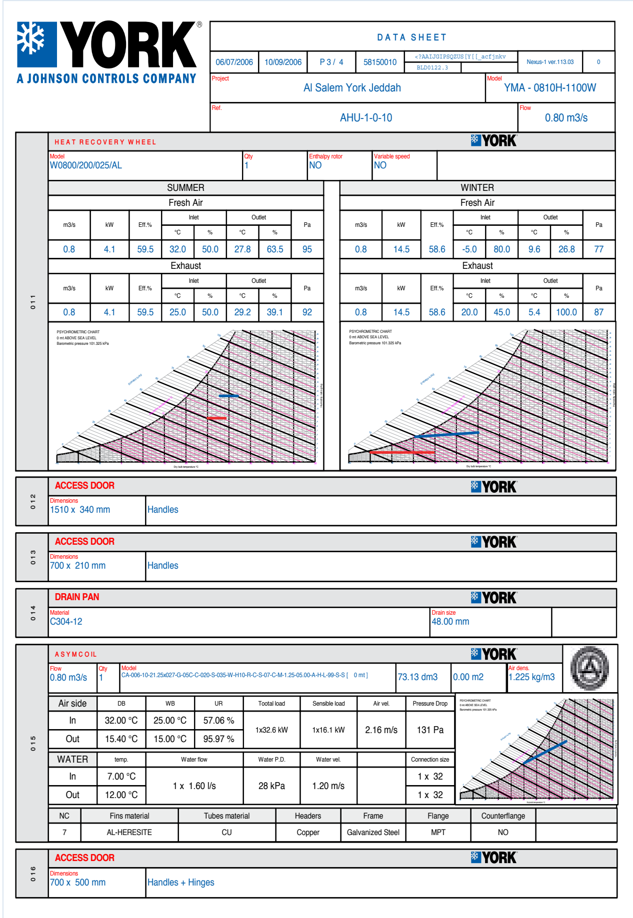
Mechanical characteristics	Class				
	Casing designation				
Characteristics	MB30 POLYYURETHANE	MB60 POLYYURETHANE	MB60 POLYYURETHANEtb	MB60 ROCKWOOL	MB60 ROCKWOOLtb
Casing strength	2	2A	2A	2A	2
Casing air leakage under -400 Pa	B	B	B	B	B
Casing air leakage under +700 Pa	B	B	B	B	B
Filter bypass leakage	F8	F8	F8	F8	F8
Thermal transmittance	T3	T2	T2	T2	T2
Thermal bridging factor	TB4	TB4	TB3	TB4	TB2

	Acoustical Insulation						
	Insertion Loss						
Casing Designation	Frequency (Hz)						
	125	250	500	1000	2000	4000	8000
MB30 POLYYURETHANE	13	13	15	14	16	31	37
MB60 POLYYURETHANE	12	13	14	15	26	33	36
MB60 POLYYURETHANEtb	11	14	14	15	27	33	37
MB60 ROCKWOOL	13	26	34	32	30	36	37
MB60 ROCKWOOLtb	13	25	33	31	30	36	31

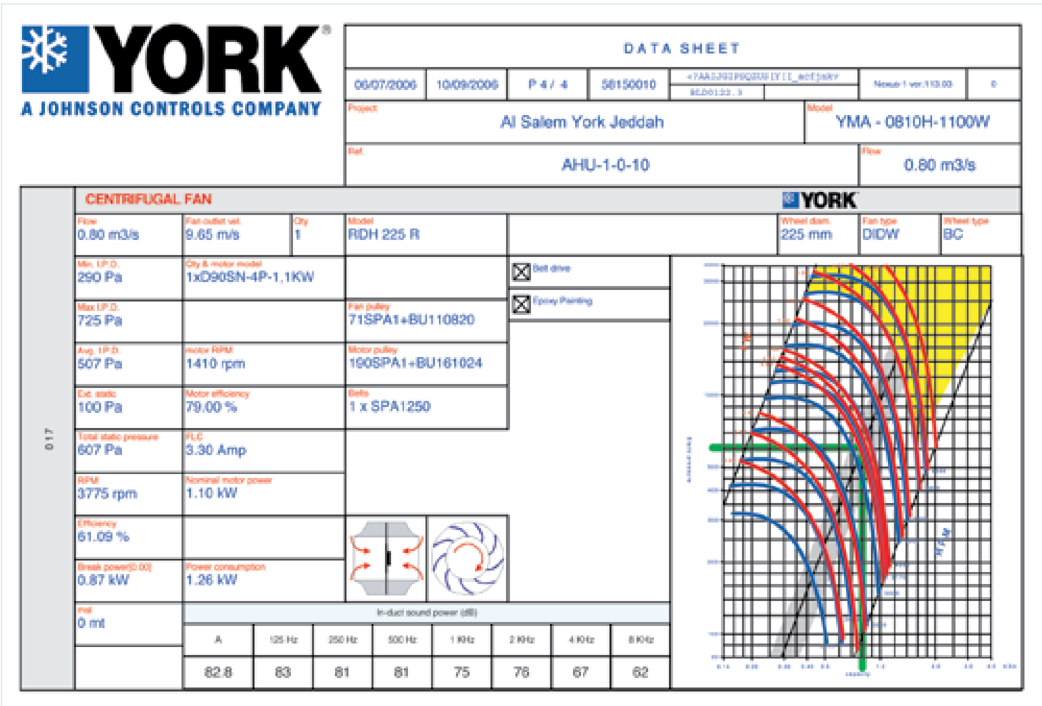
Johnson Controls



Sample Printout



Sample Printout



Sample Printout

Filters

Filter sections are designed for easy withdrawal of the following filter types:

Prefilters
Synthetic or glass-fibre media panel filters, class EU2 to EU4 (EU3 supplied as standard) arranged in galvanised steel frames or sliding rails.

Main Filters
Synthetic or glass-fibre media bag filters, class EU5 to EU8 (EU6 supplied as standard) arranged in galvanised steel frames with gaskets to avoid air bypass.

Final Filters
High efficiency compact cell filters, class EU10 to EU12 (HEPA 95 to 99.99% Nacl), fixed with brackets, nuts and bolts or clamps to a heavy galvanised steel gasketted structure.

Cooling and Heating Coils

Cooling and heating coils are computer selected to achieve the optimum psychrometric efficiency with low air and water pressure drops.

Coils
Standard coils are constructed from copper tubes mechanically bonded to aluminium fins, with threaded copper headers, all contained in a galvanised steel frame. Air vents and drain connections are provided.

Coils are leak tested at 30 bar with a maximum design pressure of 16 bar. The cooling coil assembly is located in a drain pan. The coil section can be removed easily from either side.

Condensate pans are a "dry pan" design, manufactured from a choice of aluminium or stainless steel to ensure complete condensate removal.

The drain pan is double skin insulated PPTM droplet eliminators are fitted after cooling coils when the air velocity exceeds 2.5m/s or high latent load on request.

Coil options are:
- Medium/high pressure steam coils.
- Copper fins.
- Electro-tinned copper fins.
- Epoxy coated fins.
- Direct expansion coils.
- All steel coils.
- Stainless steel drain pans.
- Aluminium droplet eliminators.

Electric Heating Coils
Manufactured from low temperature screened stainless steel tube and spiral fin heating elements secured to a heavy gauge steel frame. A automatic reset safety thermostat.

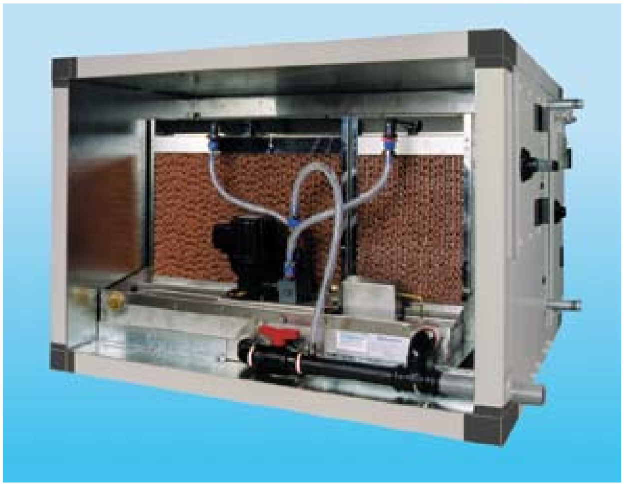
Optional
- High temperature cutout
- Airflow switch are fitted
- Step or modulating control

Humidifiers

Generated Steam Humidifier (Special Option)
Consists of immersed electrodes, steam cylinder, stainless steel distribution pipe and electronic controls for water regulation and automatic flushing.

Cell Deck Humidifier
A viscose-coated evaporating pack is moistened with water, circulated by an internally mounted pump with removable strainer, from a header tank. The base tank includes a ball valve, overflow and drain. The assembly is constructed from aluminium alloy sheets.

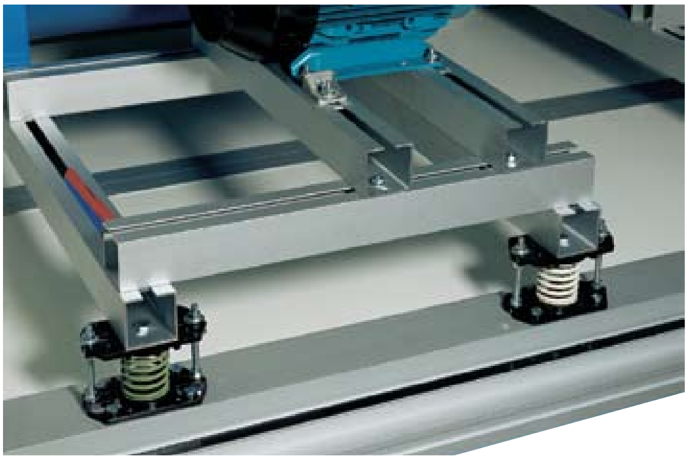
Options
Galvanised and painted internal parts. Stainless steel structure, tank and eliminators.

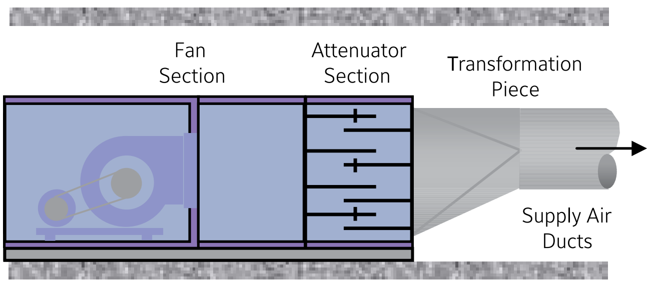


Fans

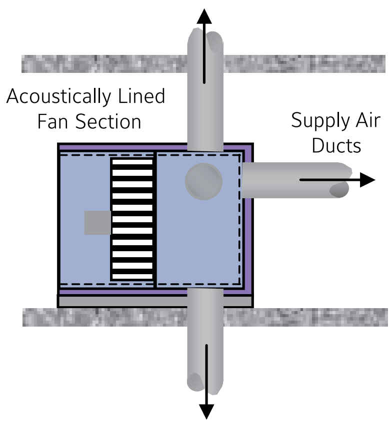
YMA units are supplied with one or two double inlet, double width forward or backward curved centrifugal fans. Fan inlets are aerodynamically designed and wheels statically and dynamically balanced according to airflow and speed. Smaller fans have sealed for life bearings and larger versions have pillow block type self aligning ball journals with grease points. Vee belt fan drives have removable fan guards. (Option)

Motors are totally enclosed fan cooled type class F insulation to IP55 protection.





Standard Centrifugal Fan Configuration



Plenum Fan Configuration

The total fan assembly is installed on a separate frame isolated from the unit structure by spring anti-vibration mounts.

Where plant space is at a premium plenum type fans may be used. The plenum fan pressurises an acoustically lined fan chamber and circular or rectangular discharge duct connections can be located on the external faces of the chamber. This reduces the length of the air handling plant by eliminating the need for external attenuators or complicated duct transformation pieces. Please contact local sales office for fan application details.

Fan Controls

·Double speed fan motors.

·Direct drive fans.

·Fan speed frequency inverters.

Sound Attenuation

Standard attenuation sections, having baffles of galvanised steel and hygroscopic material, are available in six lengths from 600mm to 1800mm. Perforated plate liners are optional.

Heat Recovery

The following forms of heat recovery equipment can be supplied:

Plate Heat Exchanger
Manufactured from aluminium (optional stainless steel or polycarbonate) and turbulation channels to permit heat transfer from warm to colder air systems without mixing the two air streams. Drain trays are provided for condensate collection.

Heat Pipe
Vertically mounted tubes, charged with refrigerant, exchange heat by the evaporation of warm air stream in the lower section and re-condensation in the cold air stream in the upper section.

Horse Shoe Heat Pipe
By circuiting heat pipes in sections before and after the cooling coil heat is removed from the air stream before it encounters the cooling coil. The passively pre-cooled air means less sensible cooling is required by the coil, providing more latent capacity, and superior dehumidification ability. The now "Over-cooled" air passes across the re-heat section of the heat pipe, bringing the

air temperature to a comfortable supply condition.

Thermal Wheel
Available with a hygroscopic or non-hygroscopic rotor for recovering and transferring heat energy from the exhaust to the supply air streams.

Lighting

Optional water resistant bulkhead lights and switches can be supplied.

Computer Selection Programme
The flexible computerised programme provides the optimum equipment selection, to satisfy the specified conditions, and provides full technical information and certified drawings.
NEXUS - 1 V.601.3014

Notes

Johnson Controls JV
Jeddah - Kingdom of Saudi Arabia

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YMA/EUV/03-2008
Supersedes YMA/EUV/09-2006

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