ADV Modular Units

ADV Next Air 01-16

Air flow rate 800÷41.000 m³/h

Features

Highly performing new generation structure

Energy efficiency of excellence

Plug and play integrated intelligence

Exclusive solutions exclusive for Indoor Air Quality

Tax incentives*

Modular air handling units.

The ADV Next Air range is developed from the new Rhoss air handling vision.

Innovative ideas and cutting-edge technology are the winning combination that characterise it.
This, together with our thirty years of experience in the sector, leads to the new innovative line of air handling units that looks to the future of air conditioning. The strength of the product lies in the use of creative, cutting-edge engineering solutions, preserving the qualitative excellence and the reliability traits that have made Rhoss a well-known name. The fully modular nature and the wide range of configurations come together in the Next Air range to create perfect balance between customisation and standardisation, flexibility and industrialisation.

STRUCTURE
• Sturdy and self-bearing structure made from one 50 mm thick single-piece sandwich panel, internally and externally hot galvanised sheet steel painted with oil-free polyester paint, highly resistant to corrosion. The internal surfaces are completely smooth to inhibit microbial proliferation and prevent the accumulation of dust.
• Insulation of self-extinguishing polyurethane base resins with a density of 48 kg/m3. Fire reaction Euroclass Cs3d0.
• The step-type full-face front inspection sandwich panels are housed in the profile seat, with thermal cut interruption, a soft PVC double gasket that simultaneously ensures tightness and prevents humidity, water or any other unwanted element from entering the machine.
• The fixing profiles are made of latest generation plastic material (PVC-RAU). Specifically made on Rhoss design, their geometry ensures perfect thermal insulation of the structure and complete interruption of thermal bridge, optimally resistance to exposure to sunlight (UV rays) and atmospheric agents, ensuring outstanding resistance to ageing.
• The condensate drain pans are made of magnesium and aluminium alloy sheet steel, ensuring excellent resistance to corrosion. They are installed inside the machine structure and are fully insulated.
Thanks to the double inclination, full drainage of fluid is guaranteed thus avoiding any kind of unwanted stagnation.
• All units are suitable for both indoor and outdoor installation.

Mechanical features EN 1886 achieved by the ADV Next-Air Range
Mechanical Resistance D1
Leakage (-400Pa) L1 (M,R)
Leakage (+700Pa) L1 (M,R)
Bypass Factor Filters F9
Thermal Transmittance T2
Thermal bridge factor TB1
STANDARD SET-UPS
The standard supply for each section is:
• Holes for the passage of signal or power cables protected internally and externally by a multi-hole cable gland with IP 65D in order to prevent altering the mechanical performance of the machine and facilitate on site operations.

MAIN COMPONENTS
Heat recovery units
• Sensitive or enthalpic rotary recovery unit
• Cross-flow recovery unit with integrated bypass
• Cross-flow heat recovery unit with integrated indirect adiabatic cooling system
• Twin coil heat recovery unit
• Unidirectional regenerative heat recovery unit (RRMR)
Fans
• High efficiency backward blade fans
• EC Brushless free impeller fans
• Plenum fan free impeller fans

Filters
• Standard or Airsuite Biocide G4-ISO COARSE 55% pleated synthetic filters
• G1 flat metal mesh filters
• Standard or Airsuite Biocide rigid bag filters M6 ePM10 70%, F7 ePM1 50%, F8 ePM1 70%, F9 ePM1 85%
• Soft bag filters M6 ePM10 80%, F7 ePM10 80%, F8 ePM2,5 70%, F9 ePM1 85%
• Semi-absolute and absolute rigid bag filters E12 H13
Heat exchangers
• Water fed coils
• Electric coils

Humidifiers
• Disposable water evaporating pack humidifiers
• Recirculation water evaporating pack humidifiers
• Autonomous immersed electrode steam humidifiers with producer
• Set-up for the installation of other types of humidifiers

Various sections
• Outdoor/mixture/exhaust air intake dampers with
- Servo-controllable dampers
- Manual dampers
• Empty inspection sections
• Silencers

Available versions:

• Type A Unidirectional machine
• Type B Machines with mixing chamber
• Type C Crossed flow heat recovery for primary air
• Type D Crossed flow heat recovery for all air systems
• Type E Rotary heat recovery for primary air
• Type F Rotary heat recovery for all air systems
• Type G Twin heat recovery for primary air
• Type H Twin heat recovery for all air systems
• Type I Indirect adiabatic heat recovery for primary air
• Type J Indirect adiabatic heat recovery for all air systems

Factory fitted accessories

• Dirty filters monitoring system
• Fan motors inverter and rotary recovery
• Fan compartment protection grilles
•Wired fan section disconnect switch
•Electronic control of fans at constant flow rate
• Indoor lighting system
• Anti-vibration fittings for ducting connection
• Rain and anti-intrusion grilles

The ADV Next Air range is also available in the Full Plug&Play version, which fully incorporates both the electrical power and control part and machine management, thus obtaining utmost comfort and minimum energy consumption. The Rhoss offer also includes all field components and elements needed for optimal control and management of the AHU.

ENERGY FUNCTIONS
• Automatic management
of both temperature and enthalpy heat recovery systems
• Built-in “freecooling” and “freeheating” functions
• Cascade control of the heating/cooling devices
• Holiday and special day functions, with reduced set-point
COMFORT FUNCTIONS
• Temperature and/or humidity control with different seasonal set-points
• Compensation of the seasonal set-point
• Operation in comfort, pre-comfort or economy mode
• Management of the water temperature minimum limit;
• 4 daily time bands
• Automatic summer/winter, manual or based on the water temperature
FUNCTIONS BASED ON SYSTEM NEEDS
• Fan inverter check at constant speed, air flow rate or pressure or based on air quality
• Air quality check with CO2 and VOC probes;
• Management of 3- or 2-way modulating or pressure independent valves
• Management of pumps for pre-heating/cooling/post-heating coils
CONNECTIVITY
The ADV Next Air range
is fully interfaced and integrated with third-party BMS systems through
Modbus, LonWorks and BACnet protocols.

Technical data

ADV Next Air MODEL		01	02	03	04	05	06	07	08
Air flow rates									
Air flow rate at 1.5 m/s	m³/h	890	1160	1430	1770	2250	2860	3610	4360
Air flow rate at 2 m/s	m³/h	1180	1550	1910	2360	3000	3820	4820	5820
Air flow rate at 2.5 m/s	m³/h	1480	1930	2390	2950	3750	4770	6020	7270
Air flow rate at 3 m/s	m³/h	1770	2320	2860	3550	4500	5730	7230	8730
Air flow rate at 3.5 m/s	m³/h	2070	2700	3340	4140	5250	6680	8430	10180
External front dimensions									
Base	mm	790	875	975	1075	1175	1275	1375	1480
Height	mm	520	640	720	720	760	840	840	950
Crossed flow heat recovery units									
Recovery at total air flow rate									
Nominal recovery air flow rate	m³/h	1300	1700	2100	2600	3300	4200	5300	6400
Minimum air flow rate	m³/h	600	800	1000	1300	1600	2100	2600	3200
Maximum air flow rate	m³/h	1700	2200	3000	3700	4900	5500	6900	8800
Dry yield with balanced flow rates	%	73,5	73,2	73,7	69,8	73,4	75,1	75,1	74,9
Efficiency EN 308	%	80,5	80,4	79,3	77,3	79	80,8	80,8	80,6
Recovery at partial air flow rate									
Nominal recovery air flow rate	m³/h	650	850	1050	1300	1650	2100	2600	3200
Minimum air flow rate	m³/h	300	400	500	600	800	1000	1300	1600
Maximum air flow rate	m³/h	850	1100	1350	1700	2200	3000	3700	4900
Dry yield with balanced flow rates	%	73,5	73,5	73,5	73,5	73,6	73,7	69,8	73,3
Efficiency EN 308	%	80,6	80,5	80,5	80,5	80,5	79,3	77,3	78,9
Rotary heat recovery									
Recovery at total air flow rate									
Sensitive recovery									
Nominal recovery air flow rate	m³/h	1150	1650	2100	2600	3300	4200	5250	6300
Balanced flow rate dry efficiency	%	73,0	73,1	74,4	74,9	74,9	74,5	73,0	73,1
Hygroscopic recovery									
Nominal recovery air flow rate	m³/h	1200	1700	2100	2600	3300	4200	5300	6400
Balanced flow rate dry efficiency	%	73,3	73,7	75,1	75,4	75,5	75,2	73,9	73,8
Recovery at partial air flow rate									
Sensitive recovery									
Nominal recovery air flow rate	m³/h	1150	1150	1150	1650	1650	2250	2900	3700
Balanced flow rate dry efficiency	%	73,0	73,0	73,0	73,1	73,1	73,2	73,0	73,0
Hygroscopic recovery									
Nominal recovery air flow rate	m³/h	1200	1200	1200	1750	1750	2400	3100	3950
Balanced flow rate dry efficiency	%	73,3	73,3	73,3	73,2	73,2	73,2	73,0	73,0

ADV Next Air MODEL		09	10	11	12	13	14	15	16
Air flow rates									
Air flow rate at 1.5 m/s	m³/h	5180	6070	7160	8520	10160	12000	14450	17730
Air flow rate at 2 m/s	m³/h	6910	8090	9550	11360	13550	16000	19270	23640
Air flow rate at 2.5 m/s	m³/h	8640	10110	11930	14200	16930	20000	24090	29550
Air flow rate at 3 m/s	m³/h	10360	12140	14320	17050	20320	24000	28910	35450
Air flow rate at 3.5 m/s	m³/h	12090	14160	16700	19890	23700	28000	33730	41360
External front dimensions									
Base	mm	1575	1775	1925	1980	2085	2275	2535	2665
Height	mm	1000	1100	1100	1200	1320	1500	1500	1680
Crossed flow heat recovery units									
Recovery at total air flow rate									
Nominal recovery air flow rate	m³/h	7600	8900	10500	12500	14900	17600	21200	24700
Minimum air flow rate	m³/h	3800	4400	5200	5800	6900	8300	10000	11300
Maximum air flow rate	m³/h	10500	12300	14500	17600	21000	24800	29600	32000
Dry yield with balanced flow rates	%	74,9	74,9	74,9	73,4	73,4	73,4	73,4	73,0
Efficiency EN 308	%	80,6	80,6	80,6	79,0	79,0	79,0	79,0	78,6
Recovery at partial air flow rate									
Nominal recovery air flow rate	m³/h	3800	4200	5300	6400	7600	8900	10500	12800
Minimum air flow rate	m³/h	1900	2100	2500	2700	3000	3600	4200	5100
Maximum air flow rate	m³/h	5500	5500	6900	8800	10500	12300	14500	17600

Dry yield with balanced flow rates	%	73,3	75,1	75,1	74,9	74,9	74,9	74,9	74,9
Efficiency EN 308	%	78,9	80,8	80,8	80,6	80,6	80,6	80,6	80,6
Rotary heat recovery									
Recovery at total air flow rate									
Sensitive recovery									
Nominal recovery air flow rate	m³/h	7500	8900	10500	12500	14800	17600	21200	25900
Balanced flow rate dry efficiency	%	73,0	75,2	74,7	73,9	73,0	73,0	73,3	73,0
Hygroscopic recovery									
Nominal recovery air flow rate	m³/h	7600	8900	10500	12500	14900	17600	21200	26000
Balanced flow rate dry efficiency	%	73,8	75,7	75,3	74,7	73,9	74,0	74,2	73,8
Recovery at partial air flow rate									
Sensitive recovery									
Nominal recovery air flow rate	m³/h	4600	5250	5250	6300	7500	10150	11600	14800
Balanced flow rate dry efficiency	%	73,0	73,0	73,0	73,1	73,0	73,0	73,0	73,0
Hygroscopic recovery									
Nominal recovery air flow rate	m³/h	4900	5500	5500	6750	8050	10850	12400	15800
Balanced flow rate dry efficiency	%	73,0	73,3	73,3	73,1	73,0	73,0	73,0	73,0

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