

# BPS BOXER PACKAGED SOLUTIONS - CONSULTANTS SPECIFICATION

## OPERATION

The packaged supply and extract unit shall be manufactured from Aluzinc corrosion resistant steel, with 50mm double skinned panels and anodized aluminium frame. All external fittings and fixings shall be stainless steel, aluminium or non-metallic. All panels and frames will be of a totally thermally-broken design, complying with the following specification in accordance with BS EN 1886: Mechanical strength, D1; Leakage class, L1; Thermal transmittance, T2; Thermal bridging, TB1. Panels and frames will be sealed without the use of silicon, mastic or other liquid gasket.

The unit shall include the following items: - a high efficiency, ERP compliant heat exchanger with automatic bypass (power saving partial bypass on plate HX), complete with a condensate tray and pump offering 20m of head pressure. G4 pre-filter and F7 main supply filters shall be fitted with a single M5 bank present on the extract side. Slides for alternative panel and bag options shall be present and pressure drop monitoring for maintenance notification will be included.

Performance optimised backward curved impellers and IP54 EC motors shall be used to provide low specific fan powers and stepless speed control without tonal noise generation. Fan pressure transducers shall be fitted (ES Connect & Adapt only) for constant pressure/flow control and energy monitoring. Internal lighting and inspection portholes shall be present on all fan modules.

All hinged access panels shall be lockable and removable (with a common key for all) allowing full maintenance access from the side. The unit has left (and right option) hand arrangement in direction of supply air flow.

- A LPHW heater battery shall be fitted (on LPHW units).
- An electric heater module shall be present (on Electric heater units), complete with power controller to allow output modulation from the unit control.
- A fail-safe auto-reset safety device shall be present.
- A chilled water cooling coil shall be fitted (on chilled water units).

A reverse cycle DX coil shall be fitted (on DX-R units), with 5 psi oxygen free nitrogen (OFN) holding charge. The coil is sized to suit the compatible Mitsubishi condensing unit (2 will be required) with the required control interface (PAC controller) and sensors pre-fitted to the unit.

Structural baseframes shall be fitted, powder coated with covered forklift slots and 50mm square lifting bar holes for site manoeuvrability. Three axis alignment clamps shall be fitted externally.

All modules and ancillaries shall be individual weatherproofed with nanotech hydrophobic roofing, providing unparalleled corrosion resistance and aesthetic longevity.

An IP66/67 lockable isolator shall be present for power connection on main and electric heater modules. Sealing grommets will be present for control cable access to the unit internals without the need for drilling on site. Module electrical interconnection shall be made using pre-fitted plug and socket arrangements.

Modules shall be provided with identification labelling to aid assembly and QR coded badges to simplify document retrieval via portable devices.

Autodesk REVIT files shall be provided for Building Information Modelling and all units shall be based on performance testing carried out within an AMCA certified test laboratory.

## CODE DESCRIPTION

**B 6 17V / LR / CO - L**  
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 1 2 3 4 5 6 7 8

1. BOXER Package Solution Range
2. ERP year:  
6 = 2016, 8 = 2018
3. Unit: 17 or 22
4. Heat Exchanger:  
V = Vertical Plate  
T = Thermal Wheel
5. Heater:  
L = LPHW, E = Electric,  
N = No Electric or LPHW
6. Cooling:  
R = Reverse Cycle\*\*  
X = DX\*  
C = Chilled Water  
N = No Cooling
7. Control type:  
AT = Ecosmart Adapt (Trend)  
CO = Ecosmart Connect  
ES = Ecosmart Classic  
BC = Basic control
8. Handing:  
L = Left, R = Right

\*Condenser Unit and control by others.

\*\*Ecosmart Connect & Adapt models only.

## BPS BOXER PACKAGED SOLUTIONS - CONTROL OPTIONS CONSULTANTS SPECIFICATION

### ECOSMART CLASSIC OPTION - DEMAND CONTROLLED VENTILATION

Provides the facility for energy saving via an intelligent stand-alone AHU function with local diagnostic status indication, or allows convenient integration with the client BMS with a minimal co-ordination requirement.

The factory fitted Ecosmart Classic control includes:- integral infinitely variable speed / duty control for the supply and extract fans, with independent minimum, maximum and offset adjustment for accurate commissioning. The control assembly is mounted internally. The control features a run on timer and "background" ventilation function, and is provided with unit status indication, run and fail relays and interface connections for Ecosmart Classic sensors/enablers and system dampers.

The heat exchanger bypass is automatically operated according to temperature and a pre-defined strategy.

\*\*\*The heating output (LPHW or electric) is automatically regulated to control the Air - Off condition.

The Ecosmart control module can additionally be connected to provide the following integrated BMS interfaces.

- 0 - 10 volt inputs. This will enable the following functions:- Switch the unit ON/OFF. Variable speed / duty control, Switch from low speed to high speed, Enable heating/cooling.
- 2 No. Volt free contacts give fan run and failure unit status indication.

Units fitted with Ecosmart Classic control have a 5 year warranty.

### ECOSMART CONNECT OPTION – ENHANCED DEMAND CONTROLLED VENTILATION

A comprehensive unit control specification - The control assembly is mounted internally, factory fitted and tested to provide guaranteed operation from a single supplier – one who will take responsibility.

The unit integrated Ecosmart Connect system provides the facility for operational efficiency and energy saving by allowing a comprehensive range of unitary control functions and / or full BMS integration (by others) via standard BACnet (MS/TP). The system incorporates a web access enabled controller, and is augmented by application specific unit interface and diagnostic circuits.

Controller software is optimised and pre-configured, and each unit / control assembly is fully functionally tested at works (Refer to technical documentation for full controller functional specification).

Units fitted with Ecosmart Connect control have a 5 year warranty.

### ECOSMART ADAPT WITH TREND OPTION – ENHANCED DEMAND CONTROLLED VENTILATION

A comprehensive unit control specification - The control assembly is mounted internally, factory fitted and tested to provide guaranteed operation from a single supplier – one who will take responsibility. The unit integrated Ecosmart Adapt system provides the facility for operational efficiency and energy saving by allowing a comprehensive range of unitary control functions and / or full BMS integration (by others) via standard BACnet IP configuration.

The system incorporates a web access enabled Trend IQ4E with 8DO expansion module controller, and is augmented by application specific unit interface and diagnostic circuits. Controller software is optimised and pre-configured, and each unit / control assembly is fully functionally tested at works.

(Refer to technical documentation for full controller functional specification).

Units fitted with Ecosmart Adapt control have a 5 year warranty.

(Refer to 'Description of control' for further details).

The unit shall be manufactured by Nuair.

Note: The Reverse Cycle DX coil/Condenser can only be used with Ecosmart Connect or Adapt Control options.

The Mitsubishi condenser has a 3 year warranty.

Constant Pressure Control is standard on both Ecosmart Connect & Adapt Control options.

For Basic control option contact Nuair.