

Biddle

SR COMFORT AIR CURTAIN

SPECIFICATION SHEET

i-sense technology:

The groundbreaking i-sense technology ensures that the SR comfort air curtain is providing the correct level of airflow at the correct temperature all the time. The i-sense collects temperatures from several points from both inside and outside the doorway, whilst a sensor in the return air measures room temperature collecting real-time and accurate data. This data is then automatically used within the unit to determine the fan speed and heat level, reducing the energy consumption, reducing running costs, and creating the ideal environment inside the building. This auto-active control has been demonstrated to produce savings of up to 75% when compared with a manually controlled air curtain. The i-sense also eliminates the need to install a separate outdoor sensor and door contact, reducing the installation time considerably.

Rectifier technology

The patented rectifier ensures that the turbulent air from the fans is transformed into a [virtually laminar air stream](#). This makes sure the airstream reaches the floor, needing much less air speed than it would in a rectifier-free air curtain. All this whilst ensuring the discharge air stream stays within the building, so no heated or cooled air is lost.

Control-Air-Technology

Controlled Air strength technology ensures that the air stream reaches the floor containing the right volume of air, by calibrating airspeed and outlet width. At lower speeds (and hence lower air volumes) the damper partially opens to create a greater 'impulse' to the air stream, providing a more energy efficient air curtain. At higher speeds, the damper opens to adjust the outlet velocity to deal with more demanding situations. This ensures a very high level of comfort depending on the weather situation.

CHIPS-Technology

The SR air curtain utilises CHIPS (Corrective Heating and Impulse Prediction System) technology to automatically adjust discharge velocity, air volume, discharge temperature, and heat output. Outside, return air and discharge temperature sensors are used to determine how much heat is required and the bespoke control algorithm 'translates' the data into the strength (a combination of air volume and velocity) required for complete climate separation and comfort. Negating the need for the user to continually adjust the air curtain's setting when the inside/outside temperatures and/or weather change.

The air outlet volume and heating capacity of the air curtain is controlled fully automatically and separately from each other. Via temperature sensors and door contact, the control automatically matches the air volume flow and air outlet temperature to each other and adapts them to external conditions. This auto-active control has been demonstrated to produce savings of up to 75% when compared with a manually controlled air curtain.

Housing

To make sure the SR is durable the casing is made of zinc plated sheet steel, manufactured in a reinforced design to prevent vibrations. We have installed an inspection panel in the bottom to create easy access for maintenance. The inlet grilles are made of anodised aluminium with fixed fins. The inlet module and the end panels as well as the casing are, as a standard, supplied in silver grey (RAL 9006) or traffic white (RAL 9016). Other RAL casing colour finishes are available to allow the SR to fit into any room. The inlays in the end panels are supplied in grey and white as standard, however, as they are removable these end panels can also be styled specifically if required (e.g. colour and logo).

To keep the weight of the unit to a minimum, the ceiling suspension brackets, maintenance plate on the underside, removable intake grille are all made from aluminium profiles. These are easily removable for cleaning of the filter.

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Heat exchanger

Water: The water connections are G1" female thread made from 3/8" (S/M) and 1/2" (L/XL) copper tubes and aluminium fins. The maximum operating pressure is 6 bar at 110°C. However, when needed higher pressure levels, up to 10 bar, are available upon request. The permissible pressure difference is with S / M $p = 0.5$ bar, and with L / XL $p = 1.0$ bar.

Electric: The exchanger is assembly is engineered to be as energy efficient as possible consisting of electric heating elements with lightweight and durable aluminium fins. To avoid unit failure from overheating, the exchanger is controlled by the electronic control unit and is specially fitted with overload protection and when the unit is switched off, the fans will continue to run until the heating coils have cooled off sufficiently.

Hybrid: a combination of water heating coil with an electrical stitched wire heating element.

MOTOR/FAN UNIT

The air curtain is equipped with two or more (depending on the type) dual-inlet, vibration free suspended centrifugal fans. Each fan is driven by a rotor motor on bearings, which are sealed for life and no maintenance is required. The fan casing and the impeller are made of zinc coated plate steel. The motors, as standard, are fitted with thermal contacts. These thermal contacts break the circuit of the motor when the maximum permissible motor temperature is exceeded. Protection class IP 54, insulation class F.

Regulation/operation

The automatic CHIPS (Corrective Heating & Impulse Prediction System) technology ensures the most appropriate setting at any moment in time. The i-sense in the discharge grille measures the indoor and outdoor temperatures active in the door opening collecting real-time data. This process ensures that the SR is always functioning correctly and yields an ideal, energy-efficient indoor climate without the need for user input. The auto-active SR device is equipped as standard with the b-touch control panel and i-sense infrared technology. It is also possible to communicate via Modbus.

The b-touch control panel has a simple menu structure making it very easy to select preferred settings, such as room temperature and switching the device on/off. Due to the fact, the SR's intelligent software is integrated, once the device is installed, it may also function without the btouch being connected. The b-touch may then be used as a service panel only.

The b-touch can also be used as a component of a complete climate system. For instance, the Modbus BMS local operations via the b-touch and central management actively function simultaneously. A single b-touch can be used to control a maximum of 10 units. (Modbus cable not included in delivery). A USB connector is located on the underside of the b-touch for exporting data usage, importing or exporting adjustments as well as updating new software

Electrical installation

To connect hot water and ambient units to the mains supply, they come with a fixed cable (approx. 2m long) with a moulded, earthed plug. The pipework connections for water and hybrid units and the connector plate are fitted on the top of the unit, these can be supplied from the side of the unit also. The mains cable to electrically heated (and hybrid) units must be connected within the unit. The top of the unit has a cable gland for feeding through the mains cable. A 5-core cable (3 phases + earth + neutral) is required for connection.

The b-touch control panel (accessory) is connected via a pre-assembled Biddle control cable (accessory) with RJ11 plugs (Plug&Play system). Biddle cables can also be used for the simple coupling of several Biddle air curtains.

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