Halton Windis DWI – Air curtain

Overview

Halton Windis DWI is an air curtain that generates an invisible and uniformly controlled air stream directed downwards in an open doorway. It is a water-heated air curtain designed for integrated installation. It is compact and compatible with various entrance types, and installation is up to a maximum height of 3.5m. With its integrated energy measurement, energy consumption remains under control. The unit employs EC motors and features with adjustable impulse force for an efficient air barrier function.

Application area

- Excellent for retail spaces, shops, offices, schools, and daycares.
- Interior or exterior doorways.
- Designed for horizontal installation directly above door openings with a maximum height of 3,5 m.

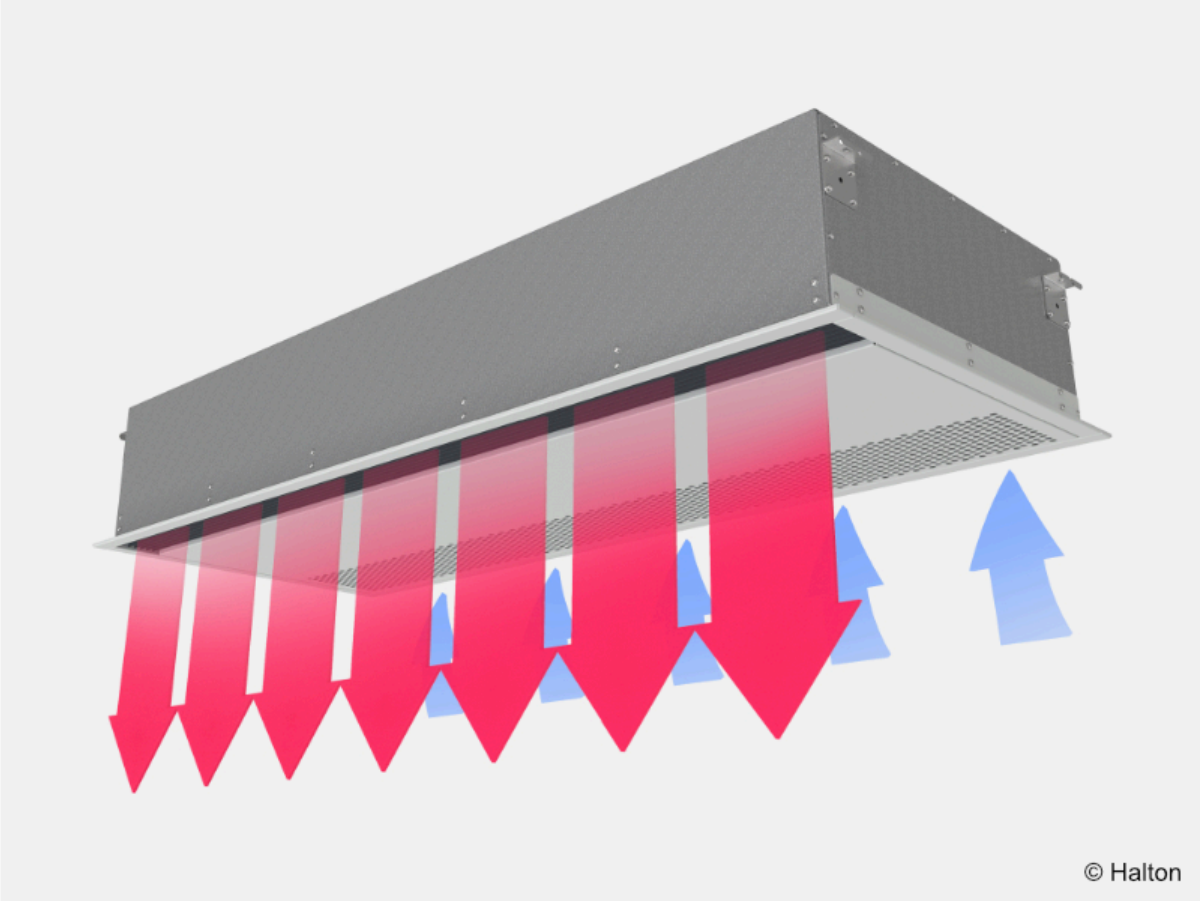
Key features

- Fast and easy to install, requires no opening of the product for connection.

- Recessed mounting and water heated.
- Connectivity to automation is simple and via a QR code.
- Built-in thermal energy measurement.
- Intelligent Controller - with web server and ready-to-use Modbus and BACnet interfaces.
- Adjustable impulse force.
- Integrated water valves.

Operating principle

Fig. 1. Operating principle of Halton Windis DWI air curtain



Air curtains, distinguished by their unique aerodynamic design, offer a highly efficient solution for separating two temperature zones or two environments. This unique design not only provides effective separation but also contributes significantly to energy conservation, making it a cost-effective choice.

When faced with challenges of natural heat exchange through open doors, air curtains step in as a practical solution. These curtains effectively separate two areas or environments, halting the natural heat transport and thereby playing a crucial role in energy conservation.

In principle, an air curtain is a device equipped with a fan and a heat exchanger (water or electrical). It operates by pushing air to the floor in a smooth, laminar flow, creating a 90% air seal. This seal, akin to an invisible waterfall, effectively stops heat transfer, dust, and flying insects, thereby maintaining a controlled indoor environment.

Key technical data

Feature	Description
Airflow rate	73-1404 l/s or 1750-3900 m^3/h
Sound pressure level	30-77 dBa
Dimensions	Height [H] = 600 mm
	Width [W] = 1017, 1517, 2017, 2517 mm
Weight	46 - 95 kg
Adjustability / Positions	3
Mounting height	3,5 m (maximum)

Features and options

Feature	Description
Color	**Frame**: RAL 7035 **Grille**: RAL 7024
Casing	Galvanised steel
Fans	EC - motor, Ball bearings
Heat exchanger	Copper (3/8"), aluminium, G1" thread, max 6 bar/100°C
Electrical connections	Power supply 2m, safety grounded plug
Other connections	M12 connector, Ethernet, USB
Standard delivery	2-way heating valve, Heating energy meter, Filter G4, Room sensor NTC10
Internal temperature sensors	• Water in and water out • Air in and air out
Cables	10m cable - BMS - RS-485 connection (M12 connector)
	10m cable - Room sensor (M12 connector)
	10m cable - Door switch (M12 connector)
	0m cable - Slave device (M12 connector)

Product selection

Technical data (Air, volume and sound)

Halton Windis DWI, 1000

Regulation	Air volume		HVC	Sound pressure level	Power consumption
1	[l/s]	[m^3/h]	Position	[dB(A)] 10 m^2 sab	[W]
10	531	1913	1	74	333
8	421	1516	1	69	175
6	290	1043	1	60	68
4	153	552	1	47	20
2	80	288	1	30	8
10	524	1885	2	74	333
8	402	1446	2	69	176
6	290	1043	2	61	68
4	152	546	2	47	20
2	74	266	2	30	8
10	524	1885	3	75	333
8	402	1446	3	69	175
6	287	1033	3	61	68
4	148	533	3	48	20
2	73	262	3	31	8

Halton Windis DWI, 1500

Regulation	Air volume		HVC	Sound pressure level	Power consumption
1	[l/s]	[m^3/h]	Position	[dB(A)] 10 m^2 sab	[W]
10	766	2757	1	76	502
8	620	2232	1	71	268
6	444	1597	1	63	104
4	257	926	1	50	31
2	116	416	1	32	12
10	759	2733	2	77	503
8	595	2142	2	71	268
6	415	1496	2	63	104
4	241	867	2	49	31
2	113	408	2	32	12
10	725	2611	3	77	503
8	560	2016	3	71	268
6	398	1431	3	63	104
4	268	964	3	49	31
2	106	381	3	32	12

Halton Windis DWI, 2000

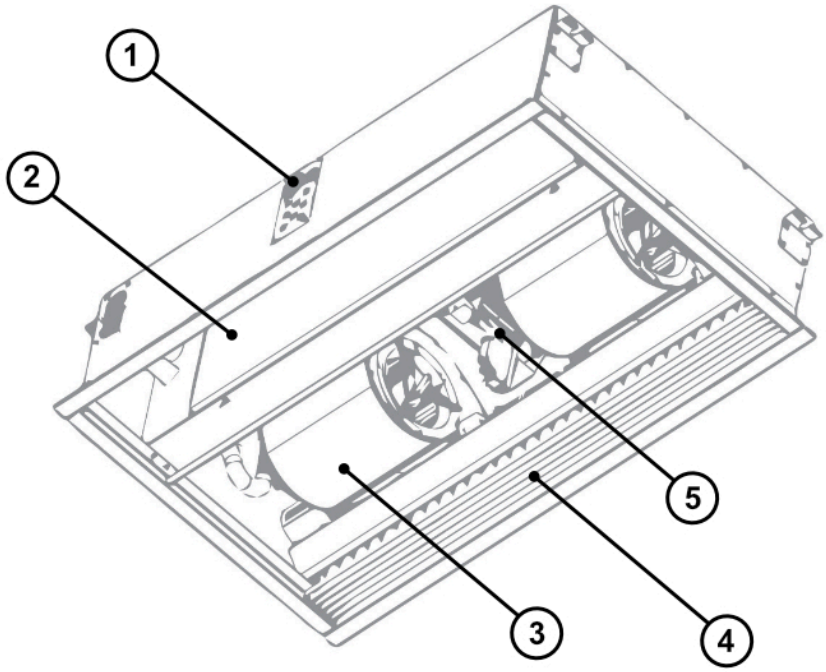
Regulation	Air volume		HVC	Sound pressure level	Power consumption
1	[l/s]	[m^3/h]	Position	[dB(A)] 10 m^2 sab	[W]
10	1016	3656	1	77	666
8	871	3135	1	73	384
6	585	2105	1	64	149
4	336	1210	1	51	44
2	142	513	1	34	17
10	1016	3656	2	77	667
8	871	3135	2	73	383
6	565	2034	2	64	149
4	331	1192	2	51	44
2	135	485	2	34	17
10	1016	3656	3	78	667
8	841	3029	3	73	384
6	554	1993	3	65	149
4	324	1166	3	51	44
2	133	478	3	35	17

Halton Windis DWI, 2500

Regulation	Air volume		HVC	Sound pressure level	Power consumption
1	[l/s]	[m^3/h]	Position	[dB(A)] 10 m^2 sab	[W]
10	1404	5055	1	77	665
8	1142	4112	1	72	355
6	811	2919	1	64	137
4	415	1496	1	51	41.9
2	231	831	1	34	17
10	1349	4857	2	78	665
8	1102	3966	2	73	355
6	772	2781	2	64	138
4	406	1460	2	51	41.9
2	220	792	2	35	17
10	1244	4478	3	78	665
8	990	3565	3	73	355
6	718	2585	3	64	138
4	381	1372	3	51	41.9
2	220	792	3	36	17

Structure and materials

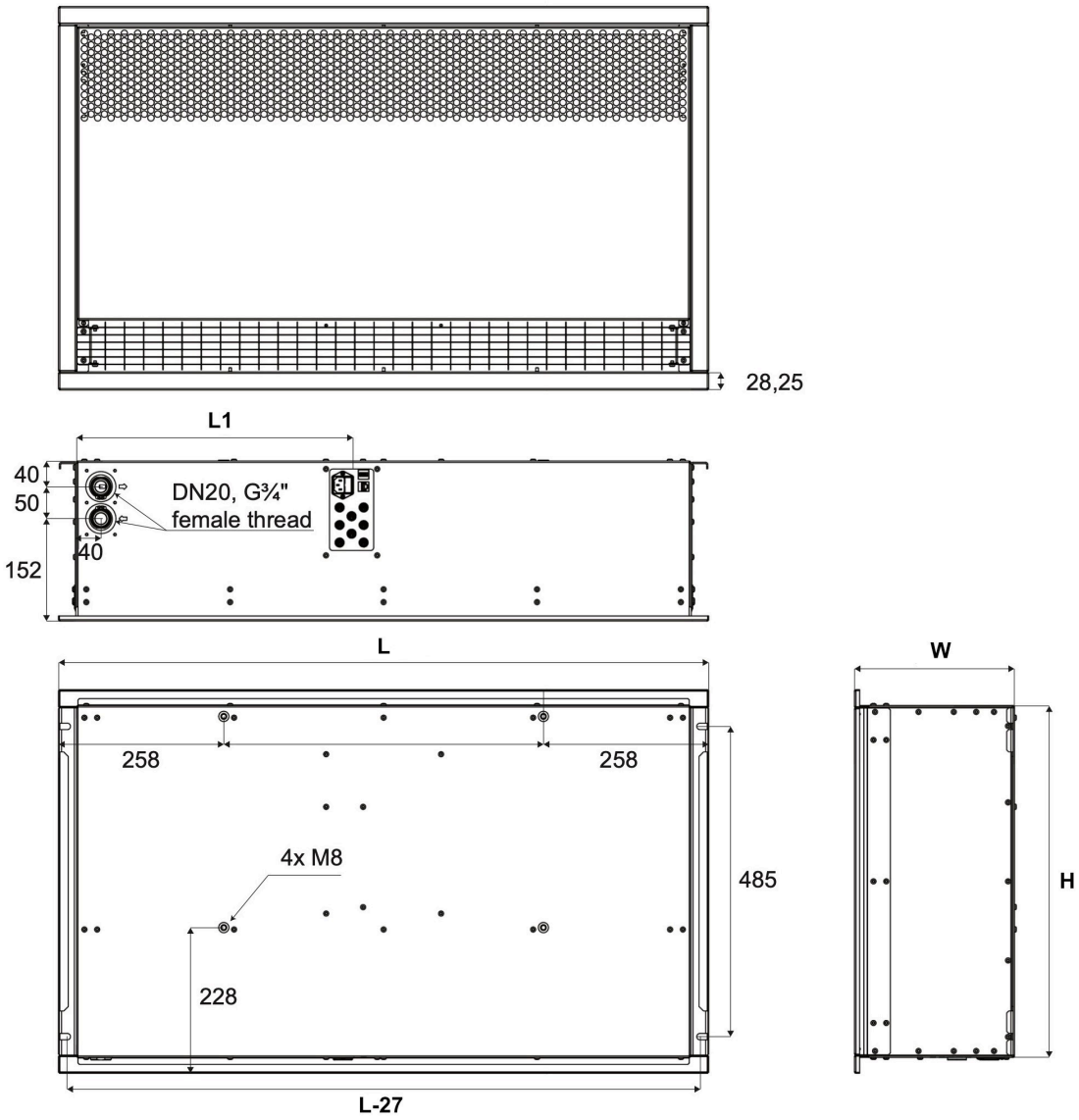
Fig. 2. Halton Windis DWI structure



No.	Part	Description	Note
1	Connector panel	Plastic, steel	PVC cable
2	Filter	Aluminium	-
3	EC-fan	Metal	-
4	Outlet grille	Aluminium / Steel	-
5	Intelligent controller	-	-

Dimensions and weight

Fig. 3. Dimensions of Halton Windis DWI



DWI	L [mm]	W [mm]	H [mm]	L1 [mm]	Weight [kg]
1000	1017	250	550	432	46
1500	1517	250	550	432	60
2000	2017	250	550	432	79
2500	2517	250	550	432	95

Specification

The Halton Windis DWI is an air curtain designed for integrated installation. The system features integrated thermal energy measurement using precise ultrasound technology, a smart controller with a built-in web server and ready Modbus and BACnet interfaces, and an adjustable blowing impulse to tailor specific needs.

Function

- Four product models equipped with integrated controls eliminate the need for additional controls on the walls and allow for a clean, streamlined design.
- Adjustable blowing speeds and an inbuilt schedule function for efficient management.
- Includes programmatic freeze protection and a Master-Slave function for synchronized operation.
- Integrated control valves and actuators, along with energy measurement, air bubble detection, and pressure measurement of the heating network.
- Featuring a counter for door openings, enhancing overall functionality.
- Supporting ECM engines and allows optimized operation for each building.
- Ready-to-implement graphic images simplify design processes.
- Functional changes to easily adapt to specific needs.

Structure

- Available in four different widths: 1000 mm, 1500 mm, 2000 mm, and 2500 mm.

Material

- The frame is painted with light grey RAL 7035 and the grill with graphite grey RAL 7024. The colours are customizable RAL xxxx.
- The heating radiator system features 3/8" copper pipes with aluminium strips for enhanced heat dissipation and a G1" internal thread for secure connections. Designed to operate at a maximum pressure of 6 bar and a temperature of up to 100°C.
- The electrical connections include a 2-meter power supply with safety grounding, a spark plug, and additional interfaces like an M12 connector, Ethernet, and USB.
- The fan is equipped with centrifugal blades and ball bearings for efficient and reliable operation.
- The system includes a 2-way heating valve, a heat energy meter, a G4 filter, adjustable blow impulse, and supports Modbus TCP, BacNet TCP, Modbus RTU, BacNet MSTP, and an I/O interface for connectivity.

Integrated controller

- The automation system of the door curtain unit provides significant advantages by ensuring all components are pre-tested and the control system operates as intended.
- The pre-tested control system adapts quickly to changing conditions, optimizing performance and energy efficiency in real time.
- This advanced controller integrates seamlessly with building automation systems via Modbus or BACnet interfaces. Network topology options include TCP/IP or RS-485, ensuring flexible and robust communication.
- It contains various integrated sensors for measuring air temperature, water-side energy meter, water pressure and freeze protection. Apart from these, external sensors can be connected.
- The controller can be integrated into the BMS, allowing all control signals to be managed

directly through the BMS, except for the freeze protection function, which cannot be bypassed.

Installation

Installation instructions covering installation options, space requirements, wiring and other installation requirements are available in a separate document.

See **Halton Windis DWI Installation and commissioning guide**.(preparation is in-progress and the link will be enabled when it is available)

Commissioning

The commissioning of both the central unit and the Controller is available in a separate document.

See **Halton Windis DWI Installation and commissioning guide**. (preparation is in-progress and the link will be enabled when it is available)

Maintenance

Maintenance instructions are available in the **Halton Windis DWI Quick Guide**. (preparation is in-progress and the link will be enabled when it is available)

Order code

DWI-M-L; VC-CO-ZT

Main options	
M = Model	
S	Small
L = Length [mm]	
	1000, 1500, 2000, 2500

Other options and accessories	
VC = Impulse force	
1	Position 1
2	Position 2
3	Position 3
CO = Colour	
TG	Grey
x	Special colour (RAL xxxx)
ZT = Tailored product	
N	No
Y	Yes (ETO)

Order code example
DWI-S-1500; VC=2, CO=TG ,ZT=N